

**YCCART 2011 /Y 8
North Somerset HER 2011/084**

**Interim report on geophysical surveys at Cadbury Hill, Congresbury
YATTON, CONGRESBURY, CLAVERHAM AND CLEEVE ARCHAEOLOGICAL
RESEARCH TEAM (YCCART)**

General Editor: Vince Russett



Richard operating the RM 15, Colin on the wire and behind them members of the manual survey team.

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Abstract

YCCCART has agreed with the Heritage Lottery Fund to undertake a project over two years commencing May 2009 to establish the extent of the Congresbury Roman kiln sites and investigate the archaeology of the environs on and around Cadbury Hill, Congresbury. Gradiometry and resistivity surveys, although incomplete, show a number of known and unknown features and confirm the need for future survey action on this most important site.

Acknowledgements

A Heritage Lottery Grant enabled the purchase, by YCCCART, of a Geoscan RM 15 Resistance Meter and a Bartington Gradiometer 601, without which this survey could not have been undertaken.

This survey would also not have been carried out without the willing permission of Yatton and Congresbury Parish Councils and English Heritage.

The authors are grateful for the British Library for permission to reproduce the sketch by the Rev Skinner, Mark Corney for allowing us to reproduce his Cadbury Hill plan, the hard work by the members of YCCCART in performing the surveys and Vince Russett for editing this report.

Introduction

Yatton, Congresbury, Claverham and Cleeve Archaeological Research Team (YCCCART) is one of a number of Community Archaeology teams across North Somerset, supported by the North Somerset Council Development Management Team.

The objective of the Community Archaeology in North Somerset (CANS) teams is to carry out archaeological fieldwork, for the purpose of recording, and better understanding of, the heritage of North Somerset.

Site Location



Fig 1: Site location

Cadbury Hill is part of the Cadbury Hill Local Nature Reserve, sited on the parish boundary between Yatton and Congresbury parishes, in North Somerset, the centre of the site being at ST441650. The site is the westernmost point of Broadfield Down, the largely limestone down which occupies much of the central area of North Somerset.

The site can be accessed from the north by Henley Lane, off Frost Hill in Yatton parish, which leads to a small public car park: there is also access by Blind Lane, off the A370 at Rhodyate Hill in Congresbury parish.

Land use and geology

Cadbury Hill is a public area owned by Congresbury and Yatton Parish Councils and North Somerset Council, and enjoyed by walkers (particularly dog walkers).

The hill fort is situated on a small outcrop of Oxwich Head limestone which overlies the Clifton Down limestone formation. The junction of these two formations appears to result in a steeper slope in some places, and at Cadbury Hill this steep slope has been utilised as part of the outer defences.



1959 excavation on the site of the eastern entrance (Late Keith Gardner collection)

Rahtz et al 1968-1973

Large scale open plan excavations took place at Cadbury in the late 60s and early 70s, to the north of the plantation. This revealed several unexpected facets of the archaeology of the hill, not least, the recognition of post-Roman roundhouses, and connections to the rest of Europe in the fifth and sixth centuries, which until this point had been thought of as a 'Dark Age' in British affairs.

The report (Rahtz et al 1992) summarised its findings: The hill-top of Cadbury Congresbury was frequented in Neolithic and Bronze Age times. Substantial defences were built in the pre-Roman Iron Age, when the site became a multivallate hillfort. This was re-occupied in the latest Roman period (late fifth century AD); new earthworks were subsequently built, including a bank dividing the hillfort into two parts, with a linking entrance way.

In the sixth century the group who had initiated these works (or a group supplanting them) had clearly achieved high status, patronising craft-workers, and having access to glass and ceramics from the Anglo-Saxon areas to the east, and from the Eastern Mediterranean, North Africa and possibly France or Spain.

In the late sixth or early seventh century the settlement declined and was abandoned, probably due to the major changes initiated by Anglo-Saxon military, political and ecclesiastical domination. Subsequently, some use was made of the hill in the medieval and post-medieval periods.

Eight structures of late or post-Roman date were defined, of both rectilinear and sub-circular plan, and a wide variety of other features, including cairns, pits, post-holes, timber-slots, and other emplacements.

Finds include flint and other stone, fired and baked clay, ore and slag, iron objects, copper alloy, gold, lead, glass, enamel, coins, bone, pottery (including imports of Phocian Red

Slip Ware, African Red Slip Ware, B Ware amphorae, and other ceramics), human and animal remains, mollusca, and botanical residues.

Interpretation of the site can be only tentative on the basis of the small sample excavated (five per cent). The late/post-Roman earthworks may be seen as defensive, but may be merely enclosing banks, possibly defining status, or even delimiting ritual areas. Some evidence suggests that one or more structures and other features had a religious function; there are indications of cult practice involving one or more human skulls of Iron Age date, and a hint of the replacement of this by a feature which has Christian analogues.

Discussion ranges over the cultural, political, and religious affiliations of the community; and on its role (or that of its ruling elite) in permanent or periodic activities in relation to a defined territory around the hill. There is also speculation on the available resources, communications, and contacts with the wider British and European world.

Corney 2004

Mark Corney, an independent archaeologist, formerly a surveyor for the Royal Commission on Historic Monuments in England (now English Heritage) was commissioned to carry out a detailed earthwork survey of Cadbury hill fort in winter 2003-4 (Cadbury Hill Fort. An Analytical survey by Mark Corney with Nik Morris. YCCCART 2011/Y3, North Somerset HER2011/041)

This survey, carried out in near-perfect conditions, revealed a previously unrecognised wealth of earthworks of prehistoric and later features on the hill top.

Unfortunately, Corney's commission did not extend to the survey of the presumably iron age earthworks on the hill slopes around the hill top. This work has been completed on the whole accessible area of the hill fort by YCCCART (some is still under impenetrable undergrowth).

Tabor 2003

Richard Tabor was commissioned by English Heritage to carry out a magnetometry survey of the hilltop at Cadbury Hill. Unfortunately, the material appears to have never been published or even fully processed.

Survey objectives

The survey had the following objectives.

- 1) To identify any archaeological features.
- 2) To use the survey to further train YCCCART members and members of Community Archaeology in North Somerset (CANS) in the use of the RM 15 Resistance Meter and Bartington 601 gradiometer.

Methodology

The survey was undertaken during the period February to May 2011 by teams from YCCCART using a Geoscan RM 15 Resistance Meter and Bartington 601 Gradiometer, with settings as per the site records in Appendix A.

The completed survey was downloaded to the ArcheoSurveyor and Snuffler programmes

ArcheoSurveyor composites were adjusted using the following filters

Grad shade
Despiked
Clip SD2

In addition the destripe filter, Red, Green Blue 2 and Black, Green, White filters were used to produce gradiometry results.

The report was written in Microsoft Word 2003.

Site photographs were taken by members of YCCCART, and remain the copyright of YCCCART.

Results

Gradiometry and manual survey

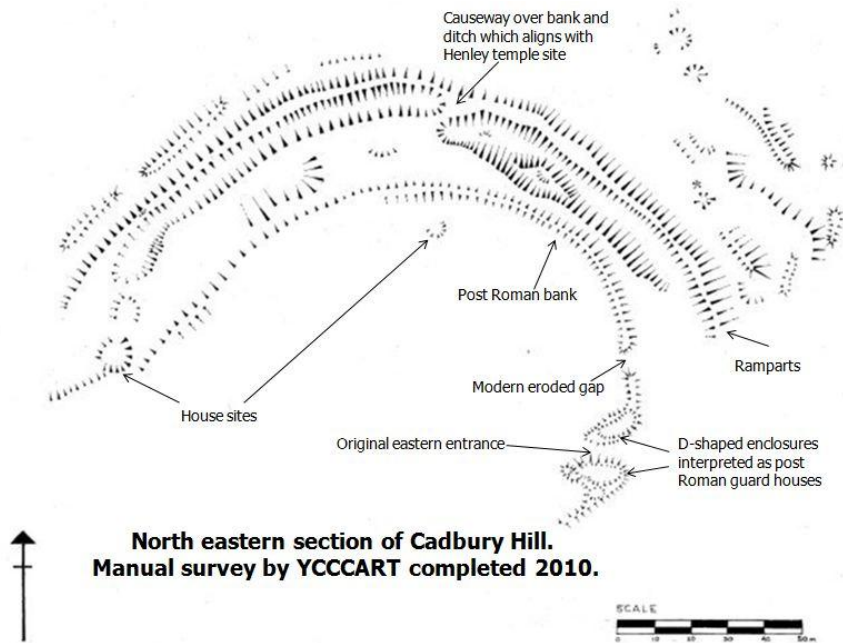


Fig 3: YCCCART manual survey of north east section of hill fort.

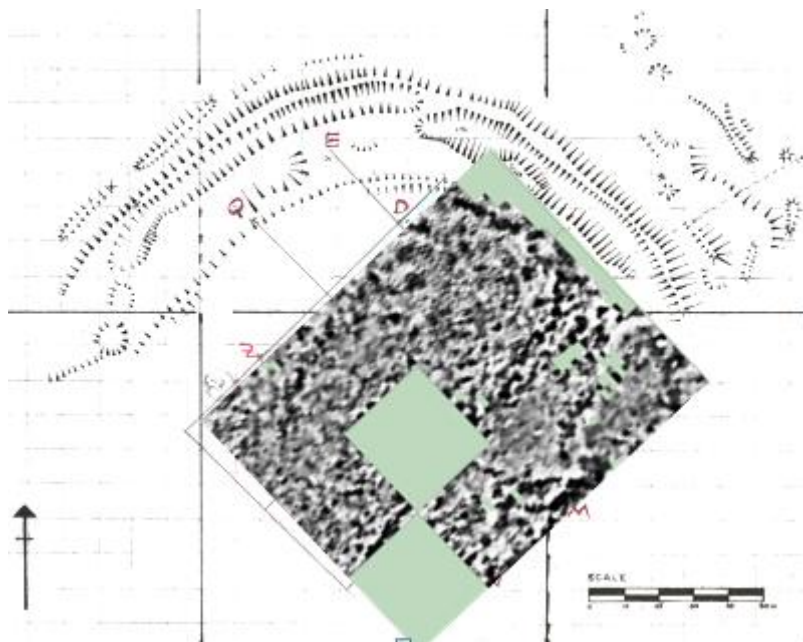


Fig 4: Gradiometry survey overlaid on manual survey

Parallel lines

Circular feature

Circular features

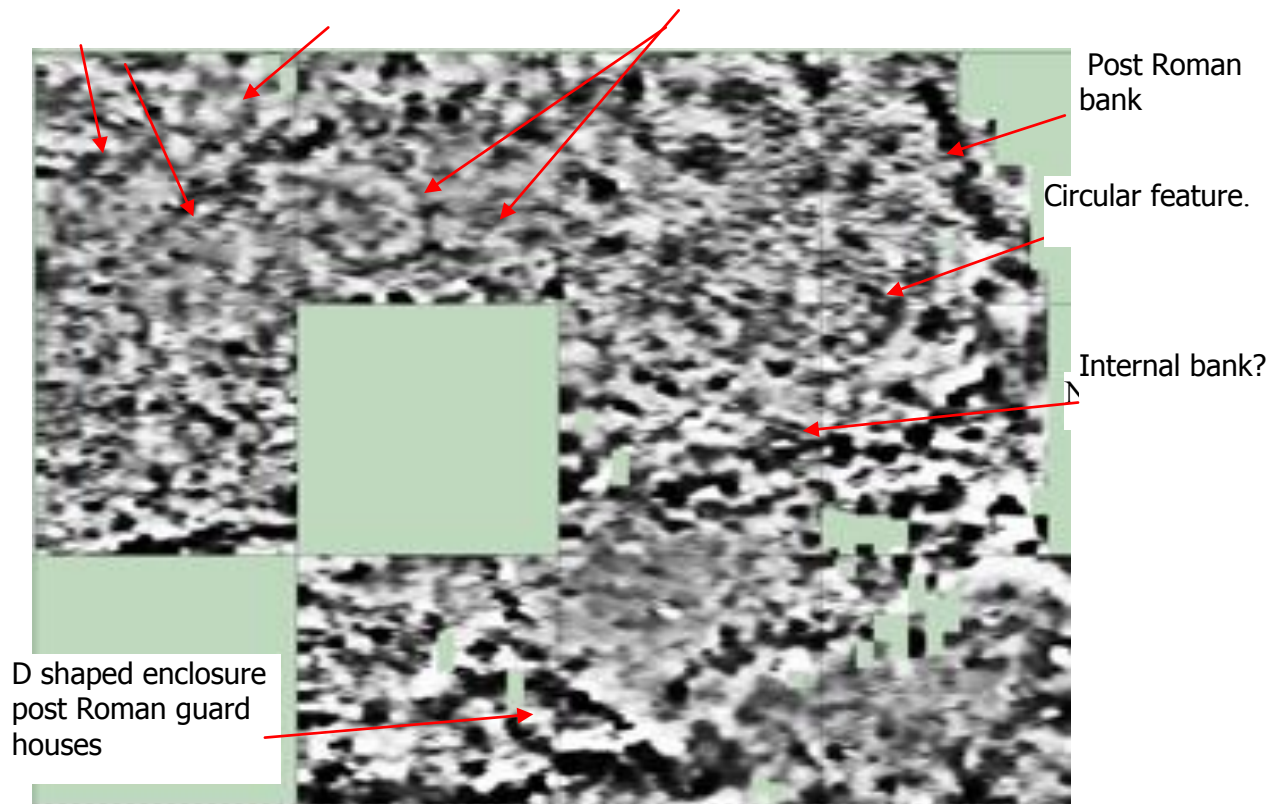
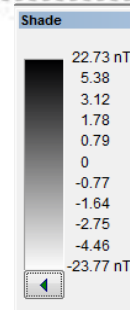
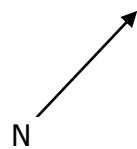


Fig 5: Shade view (ArcheoSurveyor image). High readings are black.



The results shown in figure 5 above reveal a wealth of features, including previously unrecorded circular structures features (The one arrowed far left could be a round house, and was known prior to this survey).

Also previously unrecorded are what appears to be an internal bank and parallel lines (track ways?). These initial interpretations will be more fully realised in the final report after this year's geophysics campaign.

The post Roman guard houses and internal bank shown in the manual survey at figure3 are also evident.

The two green squares on the left have yet to be cleared of bushes and brambles and surveyed.

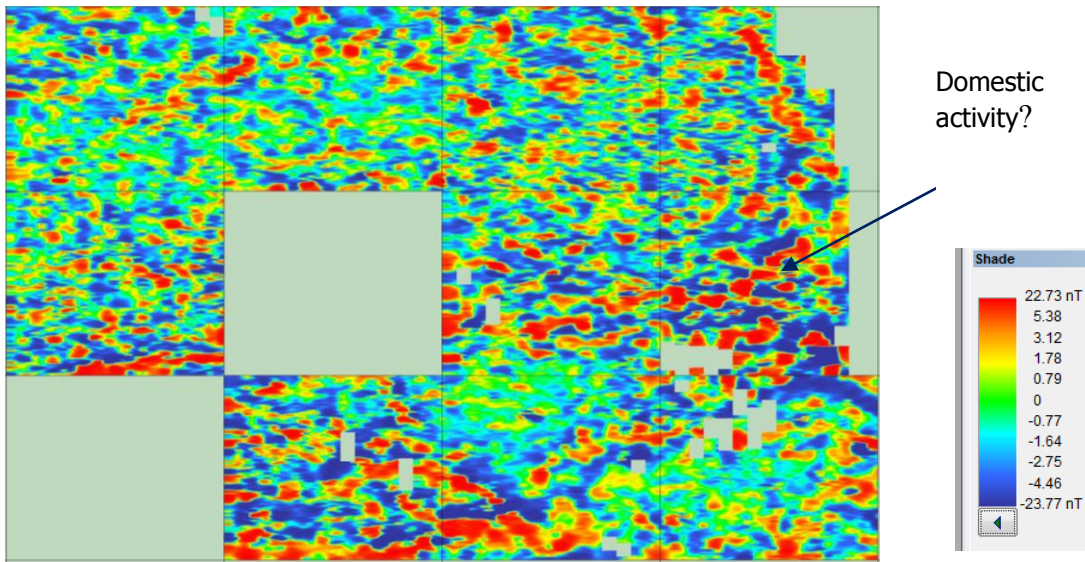


Fig 6: Shade view (ArcheoSurveyor image) with survey plan. High readings are red

The colour view highlights a potential domestic area, although the high (red) levels may result from agricultural or other debris. It is not known how much noise in the results is due to the iron ore bodies known to exist on parts of the hill top.

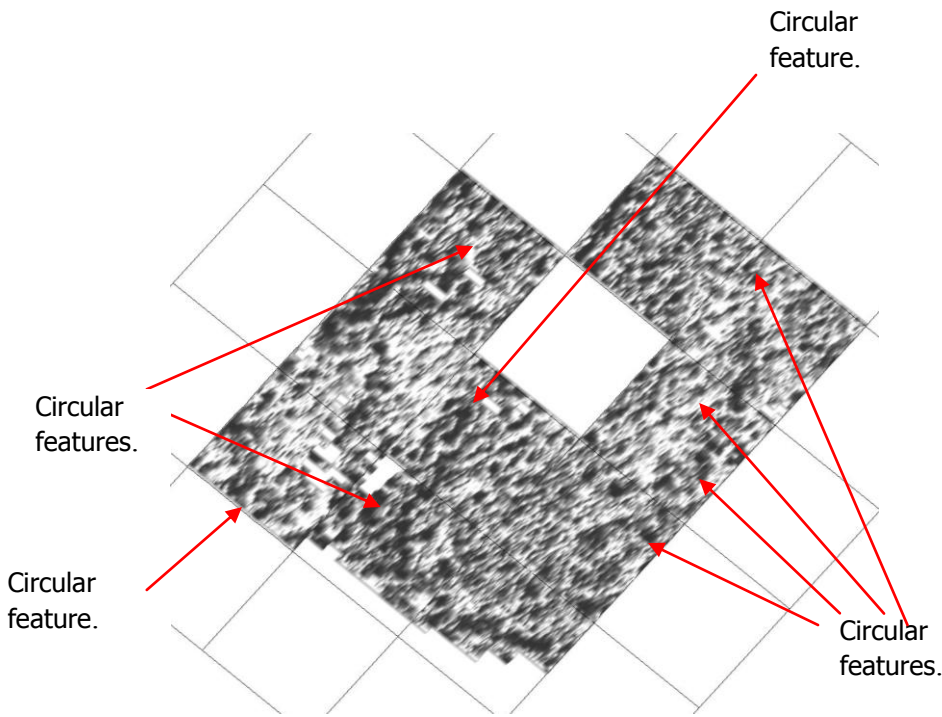
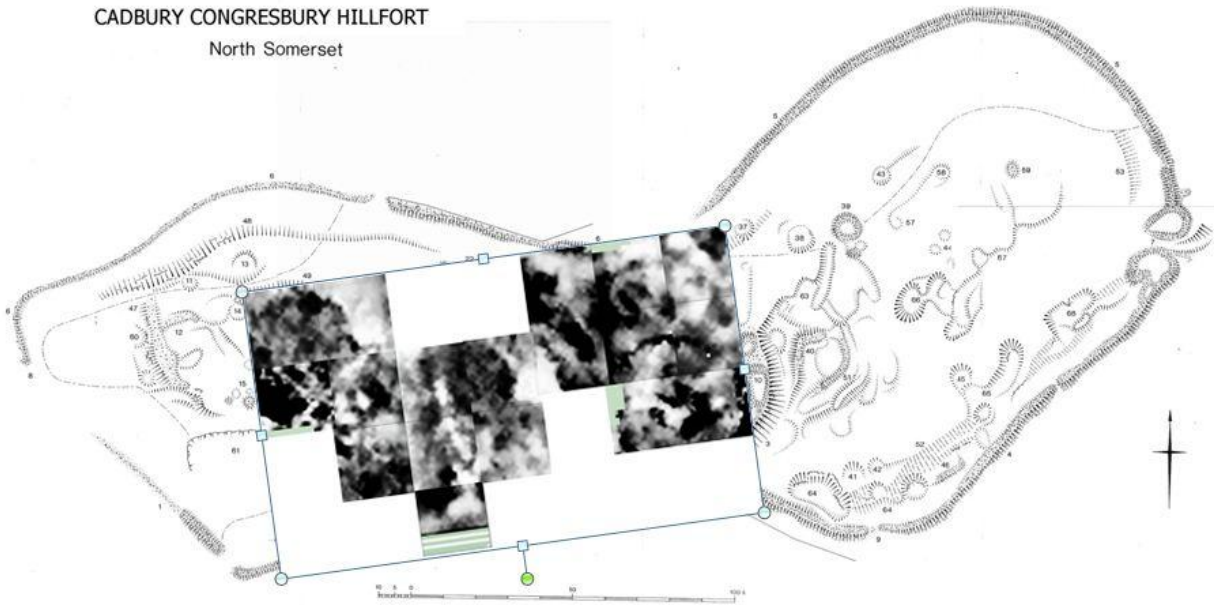


Fig 7: Axonometric view

These results illustrate the points made under the shade view and shows further circular features.

Resistivity survey

CADBURY CONGRESBURY HILLFORT
North Somerset



				18 April 5		
3 March 1	3 March 2	Brambles to be cleared	11 April 2	14 April 2	18 April 1	
17 March 1	24 March 2	7 April 2	11 April 1	14 April 1	18 April 2	5 May grid 1
17 March 2	24 March 1	7 April 1	Brambles to be cleared	Brambles to be cleared	28 April grid 1	28 April grid 2

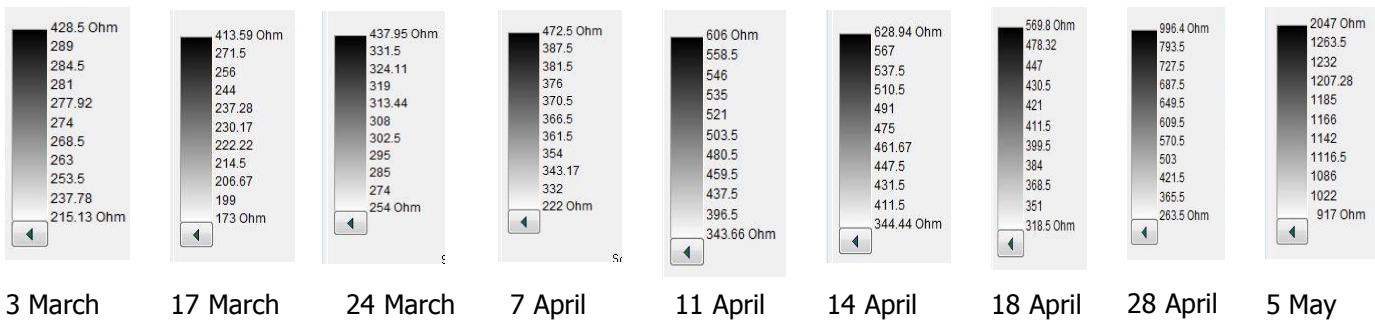


Fig 8: Resistivity survey superimposed on map produced by Mark Corney (By his kind permission) together with grid layout and range of readings from each survey day.

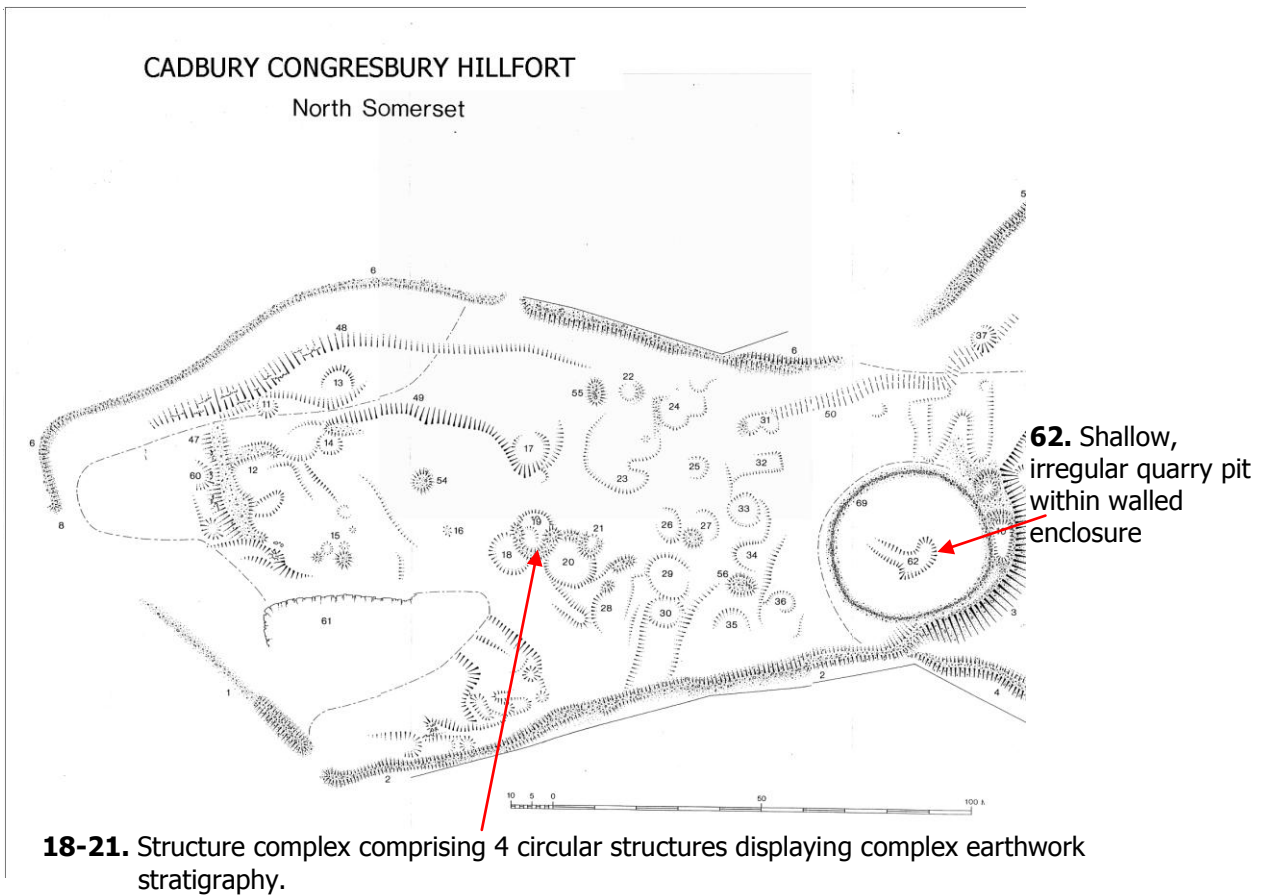


Fig 9: Part of the main survey drawing from Cadbury Hill Fort an Analytical survey by Mark Corney with Nik Morris. YCCART 2011/Y3, North Somerset HER2011/041.

The above survey was completed during 2004. Figure 9 shows only the eastern section of the survey which corresponds to the resistivity survey undertaken by YCCART. Highlighted in red are two features referred to in the results which follow.

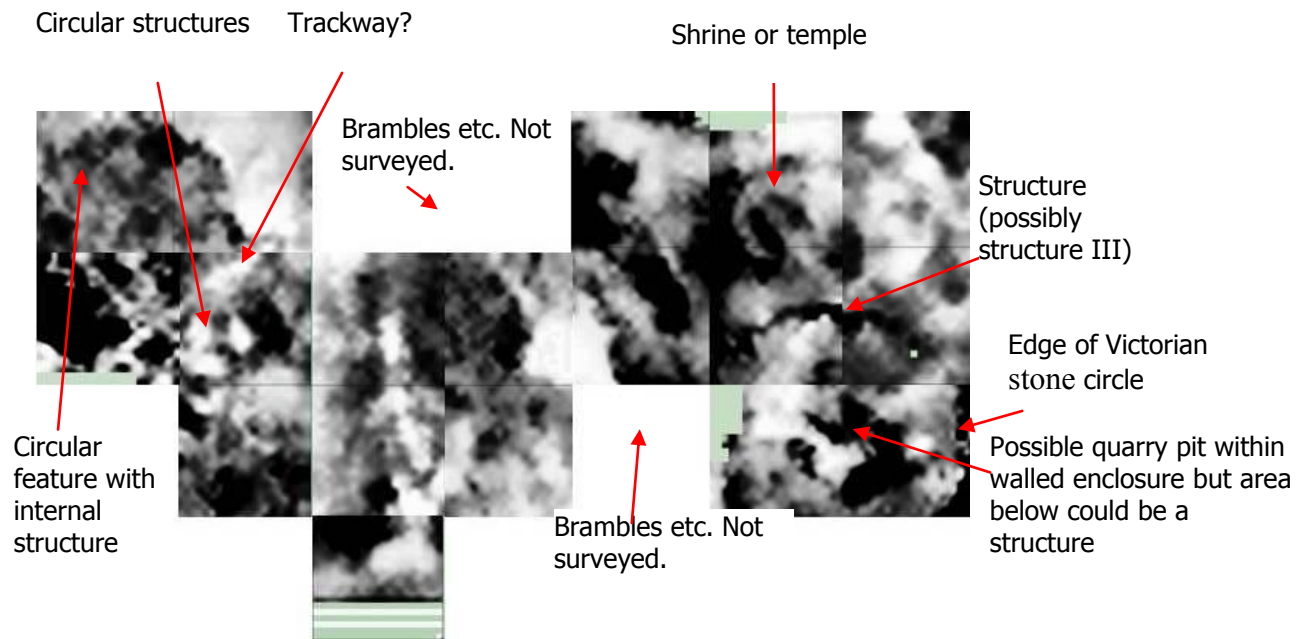


Fig 9: Shade view. ArcheoSurveyor image. (High reading are black)

Despite the survey being incomplete a large number of features have been revealed.

The most recognisable is the circular feature towards the top right, which mirrors the plan of Structure II described in the report on the Cadbury Hill excavations during 1968 to 1973 as a shrine or temple (Rahtz, PA, Fowler, P et al 1992. p197). Just below the shrine appears to be part of a structure described in the same report as Structure III. (YCCART hope to obtain permission to reproduce plans from this report at a later date.)

The circular structures top left appear to relate to the structures described in Mark Corney's survey (See YCCART report 2011 /Y6) as '18-21. Structure complex comprising 4 circular structures displaying complex earthwork stratigraphy.'

At bottom right, within the remains of a stone circular walled enclosure believed to have been constructed in Victorian times, is the feature described within Mark Corney's survey as '62. Shallow, irregular quarry pit within walled enclosure. This feature could be that shown but the survey results also shows a potential new structure abutting the south of the potential quarry.

Other features include a low resistance line across the middle grids to the left and also top left a large circular feature which seems similar to that at bottom right.

As for the gradiometry results, this initial interpretation of the resistivity results will be expanded in the final report after this years campaign. The results are certainly sufficiently encouraging to continue with the work.

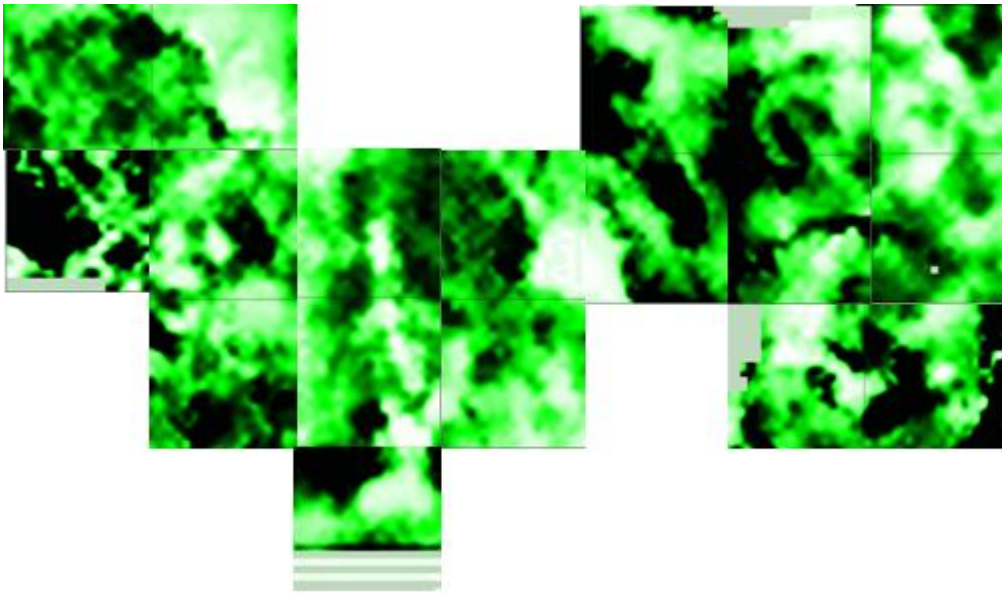


Fig 10: Shade view. ArcheoSurveyor Black, Green, White image. High reading are black and low (white)

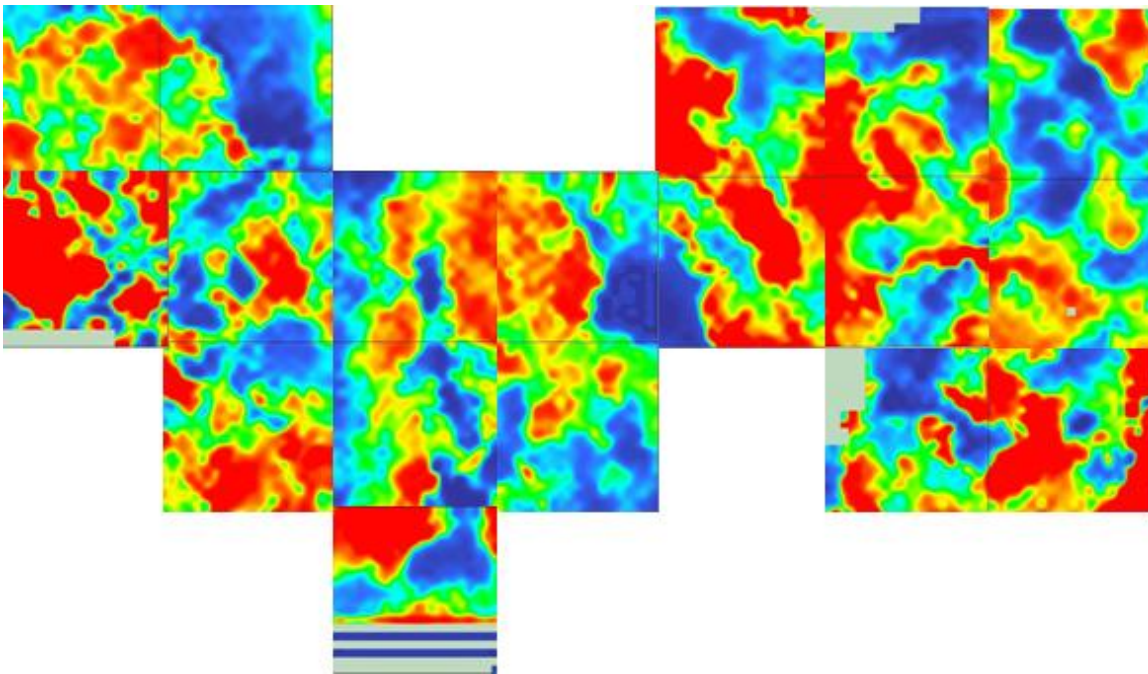


Fig 11: Shade view. ArcheoSurveyor Red, Green Blue 2 image. High reading are red and low are dark blue)

The coloured results in figures 10 and 11 above further illustrate the features described above.

Recommendations

Action was incomplete due to:

- 1) The expiry of the English Heritage licence.
- 2) The site becoming overgrown making it dangerous to undertake gradiometry surveys.
- 3) Dry weather which made it very difficult to obtain resistivity readings.
- 4) Survey sites becoming overgrown.

It is recommended that:

- a) A further English Heritage licence is obtained in order to attempt to complete survey action over the period October 2011 to May 2012.
- b) The site is cleared of brambles etc so that as large an area as possible is surveyed.
- c) Pseudosection surveys are undertaken on selected areas.

References

Corney M. Morris N, 2004	<i>Cadbury Hill Fort An Analytical survey by Mark Corney with Nik Morris. YCCCART 2011/Y3,North Somerset HER2011/041)</i>
Fowler, P, Gardner, K and Rahtz, P. 1970	<i>Cadbury Congresbury, Somerset, 1968.</i> Bristol
Rahtz, PA, Fowler, P et al 1992	<i>Cadbury Congresbury 1968-73. A Late/Post Roman hilltop Settlement in Somerset.</i> British Archaeological Reports, British Series 223

Author. YCCCART members.

Date May 2011

Appendix A

Site record for gradiometry

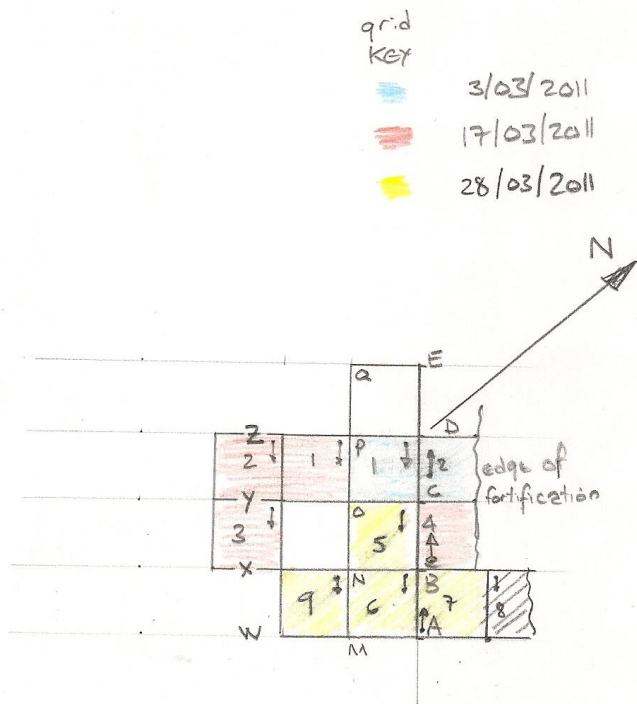
YCCART Site Survey Project – Cadbury Hill		
Survey date	28th rd March 2011	
Report date	28th March 2011	
Type /Instrument	Grad 601	
	Pace :1.5m/s Lines/m : 1 Range:100nT Volume: High Sensors:2	Grid size: 30m x30m Pattern : Zig Zag Samples/m:4 Audio: On Threshold:1nT Reject:50 Hz
Location	Cadbury Hill	
	See annex A	
Ref	none	
Site name		
Landowner		
Tenant		
HER ref		
Site type	Open field	
Description	Grass	
Period	Unknown	
Geology	Limestone	
Land use	recreation	
Survey team and conditions		
24th February 2011	Team	Peter Wright, Ferdi, Mike Fox & Ian Morton
	weather	cold & overcast
3 rd March 2011	Team	Peter Wright, Ferdi, Mike Fox, Sue Dugas & Ian Morton
	weather	cold & overcast
17 th March 2011	Team	Peter Wright, Ferdi, Mike Fox, John Wilcock, Peter English, Sue Dugas & Ian Morton
	weather	Sunny and warm
28 th March 2011	Team	Peter Wright, Ferdi, Mike Fox, John Wilcock, Peter English, Anne Dimmock & Ian Morton
	weather	Overcast, cool, dry

Survey area		notes			readings		
		size	walk direction	max	min	mean	
27th February 2011		Setting out grids					
Grid ref #	03/03/2011	1	30 x 30 m	SE	+36.4	-9.3	+1.4
		2	30 x 30 m Mirror and return Grid terminated	NW	+29.4	-35.5	+0.5
Grid ref #	17/03/2011	1	30 x 30 m	SE	+36.7	-20.6	+2.7
		2	30 x 30 m Obstacles; dummy data entered	SE	+38.7	-96.9	+2.4
		3	30 x 30 m Obstacles; dummy data entered	SE	+70.0	-24.6	-2.0
		4	30 x 30 m Obstacles; dummy data entered Grid terminated	NW	+100.0	-100.0	-0.6
Grid ref #	28/03/2011 Note: grid #s start at 5 because previous grids not deleted from machine).	5	30 x 30 m	SE	+30.0	-98.9	+2.3
		6	30 x 30 m	SE	+98.6	-100.0	-2.3
		7	30 x 30 m	NE	+75.4	-90.9	+1.8
		8	30 x 30 m Grid not to be used. Wrong start point	SE	+47.8	-22.1	+3.0
		9	30 x 30 m	SE	+46.5	-28.5	+1.7

Gradiometry setting out details

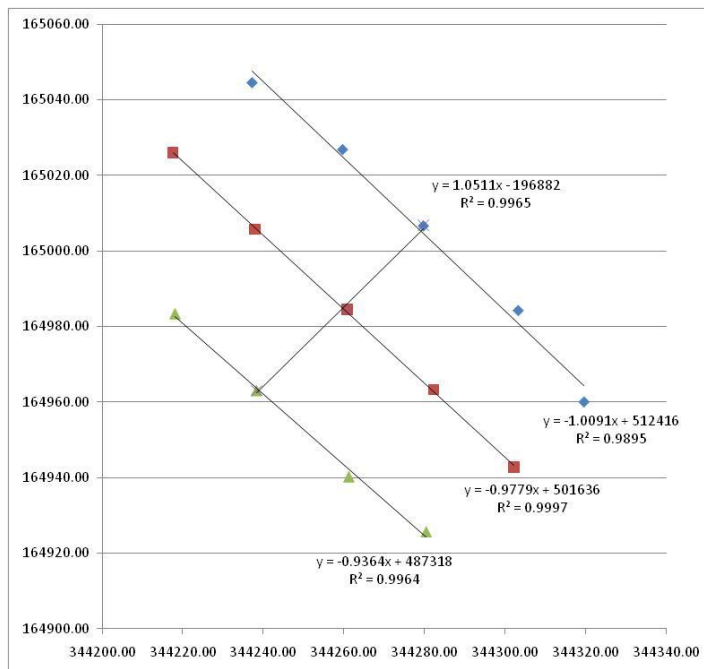


Gradiometer survey area



Gradiometry grid location details

GPS				
Cadbury I				
location	E	N		
A	344319.70	164960.10		
B	344303.35	164984.30		
C	344279.78	165006.70		
D	344259.69	165026.89		
E	344237.19	165044.60		
M	344302.20	164942.70		
N	344282.35	164963.26		
O	344260.80	164984.46		
P	344237.87	165005.70	????	Suspect reading
Q	344217.60	165026.00		
W	344280.45	164925.67		
X	344261.27	164940.25		
Y	344238.39	164963.07		
Z	344218.19	164983.42		



Site record for resistivity surveys

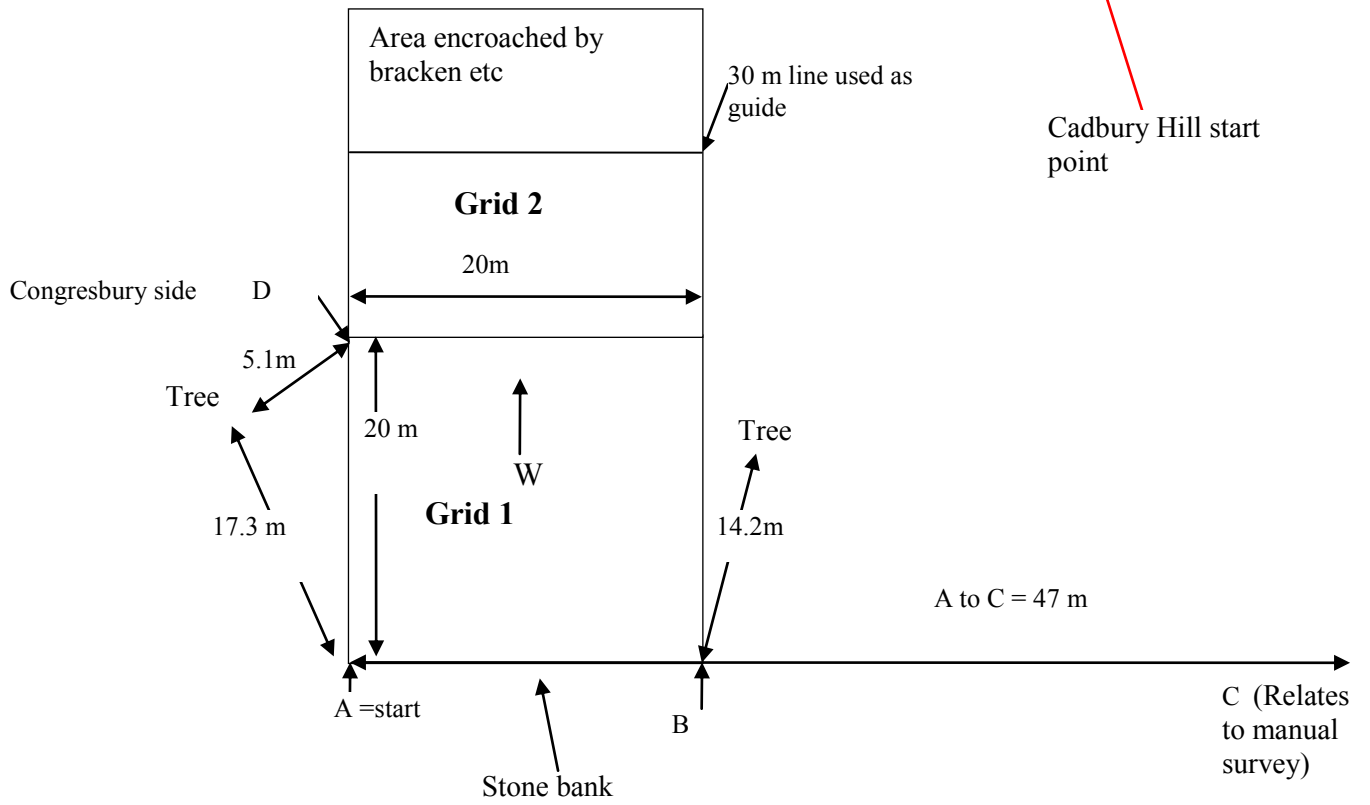
YCCART Site Survey			
Project – Cadbury Hill Fort			
Survey date	3 March 2011 to 5 May 2011		
Report date	May 2011		
Type /Instrument	RM15		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Gain x1, Current 1mA Frequency 137Hz Probes 'Config 1' (2 probes)</td> <td style="width: 40%;">Grid size: 20m x20m Pattern : Zig Zag Sample interval 1m Traverse Interval 1m. Mode Zig-Zag</td> </tr> </table>	Gain x1, Current 1mA Frequency 137Hz Probes 'Config 1' (2 probes)	Grid size: 20m x20m Pattern : Zig Zag Sample interval 1m Traverse Interval 1m. Mode Zig-Zag
Gain x1, Current 1mA Frequency 137Hz Probes 'Config 1' (2 probes)	Grid size: 20m x20m Pattern : Zig Zag Sample interval 1m Traverse Interval 1m. Mode Zig-Zag		
Weather	3 March: Dry but overcast and grass damp 17 March: Dry and sunny 24 March: Dry & sunny 7April : Dry & sunny 11 April: Cool, overcast and grass very damp 14 April : Warm, overcast, grass damp 18 April : Warm, sunny and dry 28 April: Warm, sunny and dry 5May : Warm and sunny.Ground very dry		
OS Ref or Lat-Longitude	ST		
Site name	Cadbury hill fort		
Landowner			
Tenant	Congresbury & Yatton Parish Councils		
HER ref			
Site type	Iron Age /Post Roman		
Description	Hill fort		
Period	Unknown		
Geology	Oxwich Head Limestone Formation –OOIDAL LIMESTONE		
Land use	Public amenity		
<i>Survey team</i>	<i>3 March: Colin Campbell, Chris Short, Richard Baker & John Wilcox, David Long & Brian Bradbury. 17 March : Colin Campbell, Chris Short, Richard Baker, David Long & Brian Bradbury. 24 March : Colin Campbell, Chris Short, David Long & Nick Joy. 7April: Colin Campbell, Chris Short, David Long, Geoff Pearson ,Vince Russett & Philippa Cormack. 11 April: Chris Short, Anne Dimmock, Ferdi, Pete Wright & Brian Bradbury 14 April : Chris Short, Pete Wright, Ian Morton, Richard Baker, Philippa Cormack, Judy and Charlotte Sack 18 April: Chris Short, Pete Wright, Colin Campbell, Ferdi and Pete English 28 April: Chris Short, Pete English, Ferdi ,Geoff Pearson, David Long, Susan Degas & Maggie Rosevink</i>		

		<i>5May : Chris Short, Pete English, Maggie Rosevink, Colin Campbell, Pete Wright, Ian Morton and Pete English</i>				
Survey area		notes		readings		
		size	walk direction			
3 March	Grid 1 Grid 2 (Part grid. Terminated by use of <i>Finish grid</i> (western end covered with brambles etc)	1 x 20m 1 x 20m	W W			
17 March	Grid 1 Grid 2 (Part grid. Terminated by use of <i>Finish grid</i>	1 x 20m 1 x 20m	W W			
24 March	Grid 1 (Part grid) Grid 2	1 x 20m 1 x 20m	W W			
7 April	Grid 1 (Part grid) Grid 2	1 x 20m 1 x 20m	W W			
11 April	Grid 1 Grid 2	1 x 20m 1 x 20m	W W			
14 April	Grid 1 Grid 2	1 x 20m 1 x 20m	W W			
18 April	Grid 1 Grid 2 Grid 3 (Part grid & without dummy log ay beginning) Grid 4 Abortive Grid 5 (14 m wide grid. 6 lines of dummy data interested at start)	1 x 20m 1 x 20m 1 x 20m 1 x 20m	W W W W			
28 April	Grid 1 Grid 2	1 x 20m 1 x 20m	W W			
5 May	Grid 1 (Limited by brambles, bushes etc) Grid 2 (Abortive) Grid 2 abandoned because ground so dry machine would not register or	1 x 20m 1 x 20m	W W			

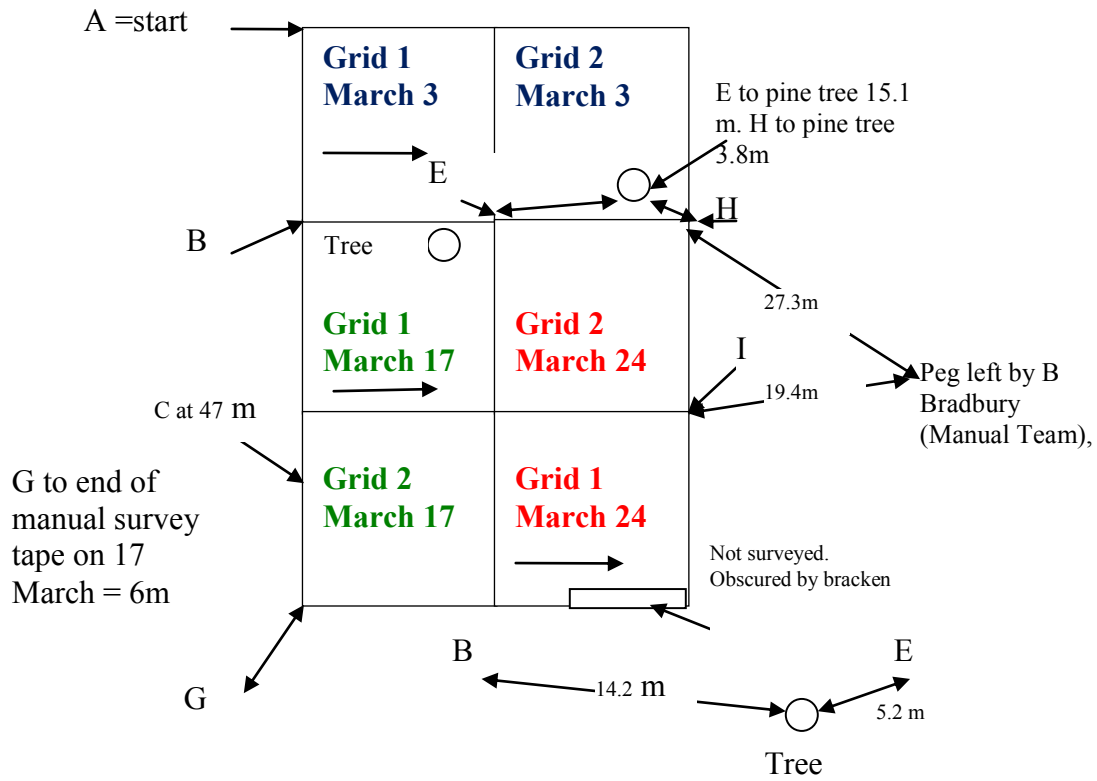
	readings exceeded maximum.					
Summary		<p>Downloaded to :</p> <p>ArcheoSurveyor:</p> <p>Cadcong / 3Mar 1 & 2</p> <p>Cadcong / 17 March 1 & 2</p> <p>Cadcong / 24 March 1 & 2</p> <p>Cadcong / 7 April 1 & 2</p> <p>Cadcong /11 April 1 & 2</p> <p>Cadcong /14 April 1 & 2</p> <p>Cadcong / 18 April 1 to 5</p> <p>Cadcong /28 April 1 & 2</p> <p>Cadcong / 5 May 1 & 2</p> <p>Snuffler: Cad 1 to 19</p>				

Resistivity survey site plan

Site plan – Not to scale



Update 24 March

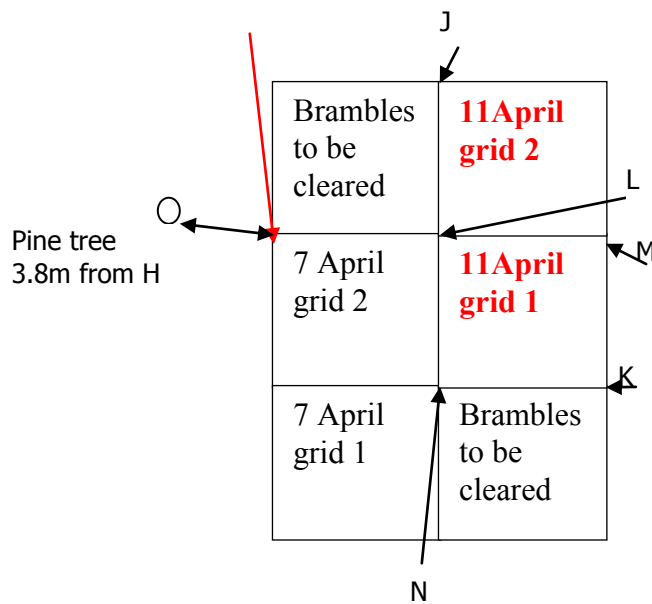


Update 7th April 2011

3 March grid 1	3 March grid 2	Brambles to be cleared	Pegs
17 March grid 1	24 March grid 2	7 April grid 2	
17 March grid 2	24 March grid 1	7 April grid 1	Brambles to be cleared

Update 11 April 2011

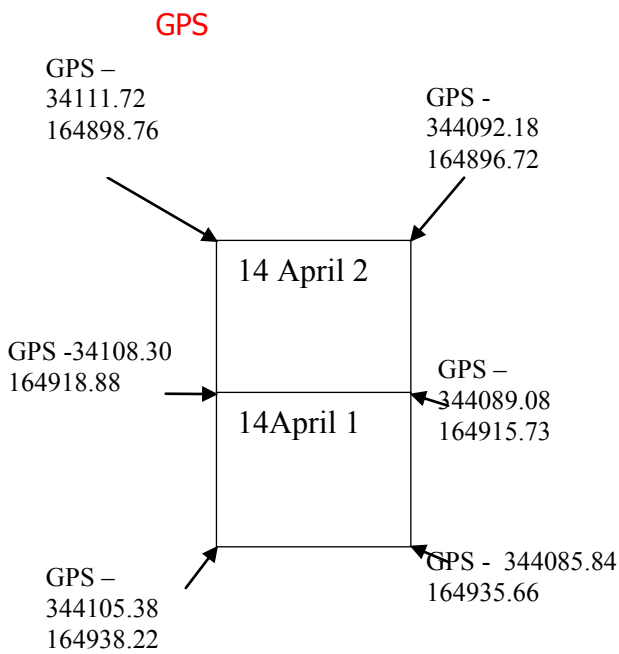
H –see update
24 March



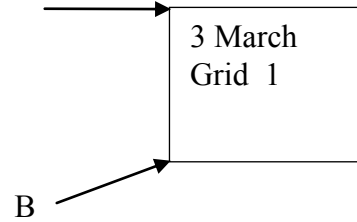
- K= 48m from pine tree
- J = 31.2 m from pine tree
- L= 23.6m from pine tree
- M= 43.7m from pine tree
- N= 30.8m from pine tree

To 14 April

3 March 1	3 March	To be cleared	11 April 2	14 April 2	<p>Small tree</p> <p>30m</p> <p>23.8m</p> <p>31.6m</p>
17 Mar 1	24 Mar 2	7April 2	11April 1	14April 1	
17 Mar 2	24Mar1	7 April 1	To be cleared		



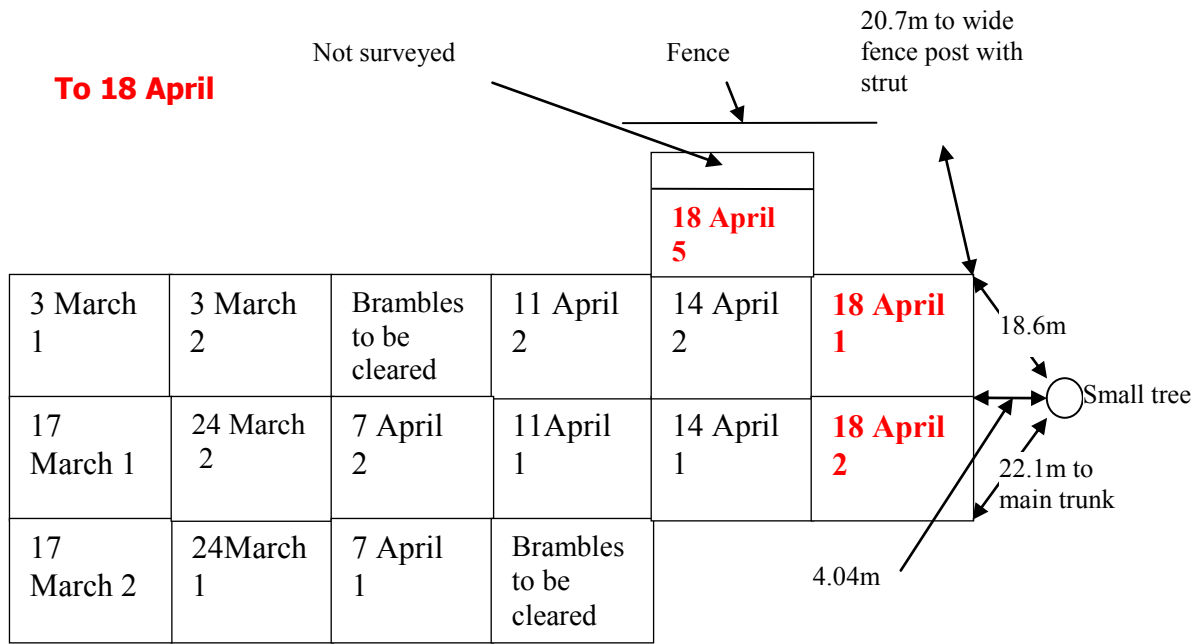
A =start point



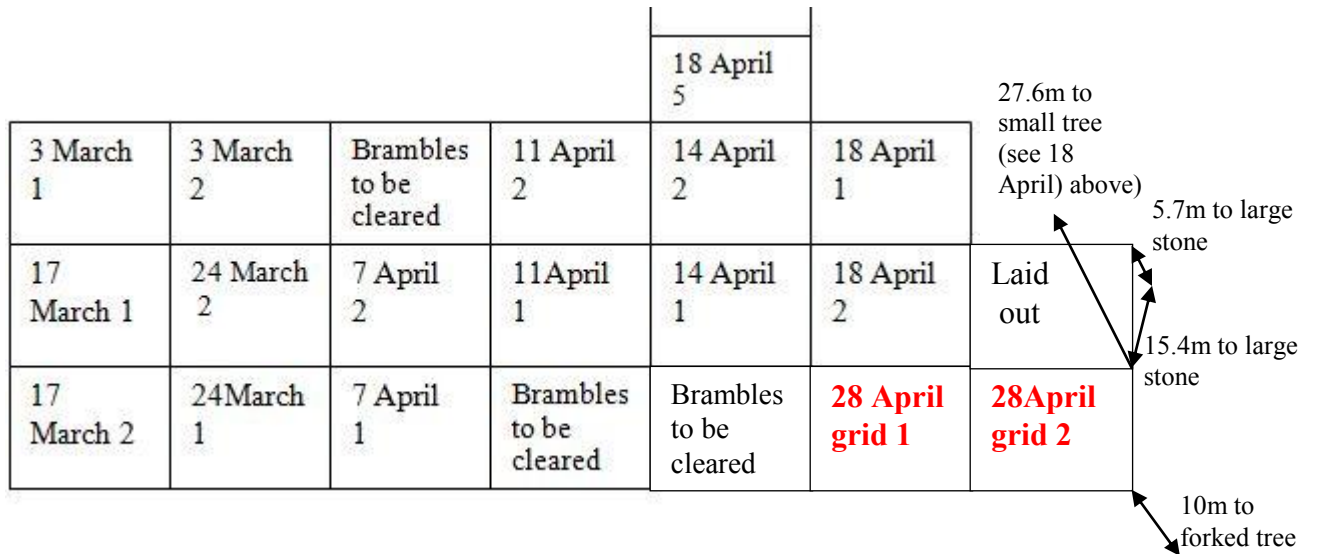
A- Eastings 344188.74
Northings 164912.25

B Eastings 344186.89
Northings 164931.68

To 18 April



To 28 April



W = Direction of survey of all grids



Update 5 May 2011

				18 April 5				
3 March 1	3 March 2	Brambles to be cleared	11 April 2	14 April 2	18 April 1			
17 March 1	24 March 2	7 April 2	11 April 1	14 April 1	18 April 2	5 May grid 1	5 May grid 2	
17 March 2	24 March 1	7 April 1	Brambles to be cleared	Brambles to be cleared	28 April grid 1	28 April grid 2		

*Survey inhibited by bushes
and brambles*

A to small tree 1 = 18.85m
 A to B = 17 m
 A to small tree 2 = 20.25m
 A to small tree 3 = 12.4m

B to small tree 1 = 2.5m
 B to small tree 2 = 4.0m