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YCCCART 2022 /Y1

Geophysical Surveys at Upper East Park, Blagdon

YATTON, CONGRESBURY, CLAVERHAM AND CLEEVE ARCHAEOLOGICAL RESEARCH TEAM (YCCCART)

Resistivity survey on a cold morning

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Abstract

Geophysical surveys in Upper East Park, Blagdon revealed a wealth of anomalies including a potential banjo enclosure and possible structures.

Acknowledgements

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

This survey would also not have been carried out without the willing permission of the landowner Holt Farms Ltd.

The authors are grateful for the support given by Sheila Johnson and Blagdon Local History Society. Also the hard work by the members of YCCCART in performing the surveys and Richard Pearson for his work on Lidar and other images.

Introduction

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

Our objective is to undertake archaeological fieldwork to enable a better understanding and management of the heritage of the area while recording and publishing the activities and locations of the research carried out.

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Site Location

Fig 1 Site locations. Field indicated by yellow star.

The field lies to the north of Blagdon church and south of Blagdon Lake. GPS co-ordinates are provided in the Appendix.

Land use and geology

The field is used for grazing. There is no public access.

Geology is the Mercia Mudstone Group – Mudstone and Halite – stone.

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Historical & archaeological context

The Rev John Skinner (1772–1839) was a parish vicar and amateur archaeologist In an 1821 manuscript he wrote:

"On entering Parkfield we picked up fragments of grey, red and black pottery, also fragments of the pennant roofing stone. I have before noticed that small Roman coins could be found, when digging deep".

This suggests a Roman structure in Parkfield. but where is Parkfield? Skinner recorded that it was below the church and he **passes them** on his way to visit Fairy Toot Blagdon.

Fig 2: Tithe Map 1842

The Tithe Map of 1842 (See Fig 2) records field names as follows:

330 – West Park

449 – Park Meads

453 – Upper East Park

454 – Lower East Park

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RAF aerial photos from 1963 show crop marks in Upper East Park. A rectangular structure or structures were indicated.

In October and November 2004 a resistivity survey was undertaken in Upper East Park.

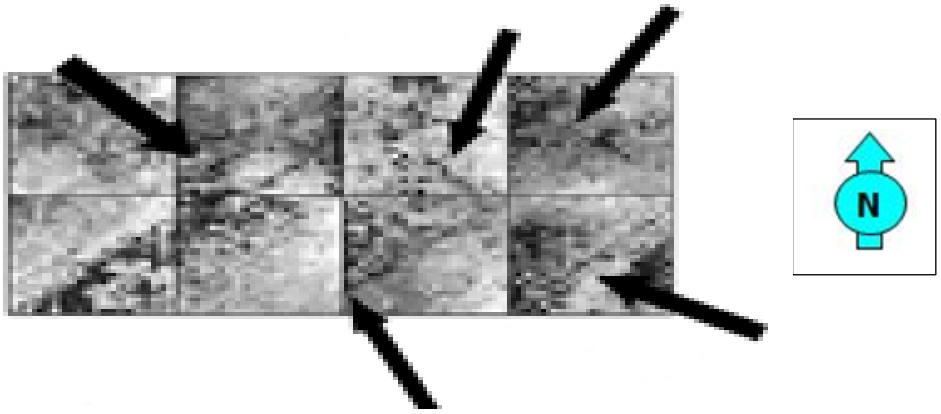

Fig 3. 2004 published resistivity survey results.

The results in Fig 3 above were described as follows:

" *The dark colour implies buried features of high resistance such as masonry, or rubble, and do not appear to be related to underlying geology, as the features are regular, and include right-angles. Arrows point to a possible semi-circular feature; the larger walled enclosure, and what appear to be walls within the larger enclosure."*

Fig 4. Trench 1. 2009

In 2009 limited excavations were undertaken. Trench 1 was 2 by 1 metre and trench 2 was one metre square.

Trench 1 revealed a wall shown in the photograph at Fig 4. Finds from this trench were limited to a shard of Ham Green ware (circa 1150 – 1300 AD) and a boar's tooth. There were no finds in trench 2.

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Lidar

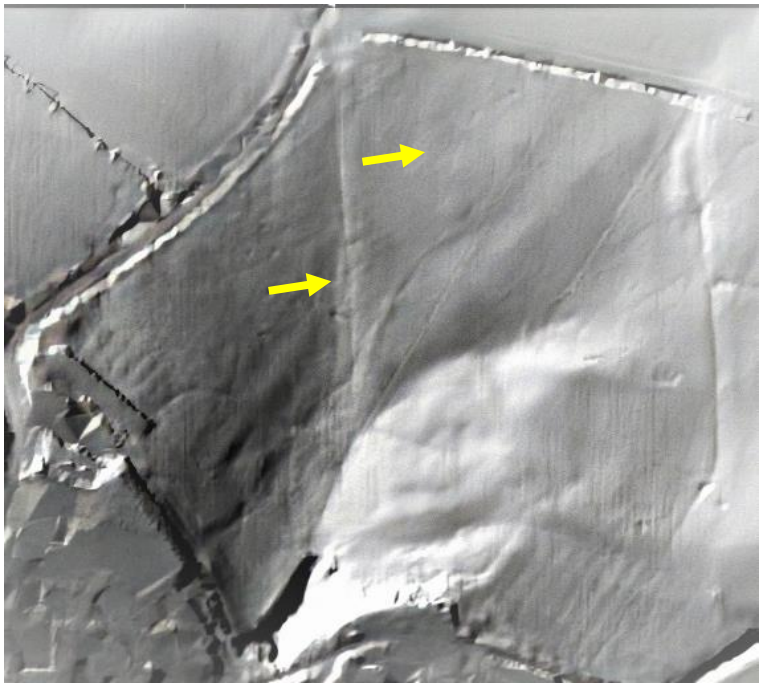

Fig 5: Lidar image. The bottom yellow arrow points to a former field boundary and the top arrow to a circular feature. https://houseprices.io/lab/lidar/map

Fig 6: Lidar image courtesy of Richard Pearson. The yellow arrow points to a raised circular feature.

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Survey objectives

The surveys were requested by Blagdon Local History Society. The objective being to build on the information obtained from the 2004 geophysical survey and 2009 excavation.

Methodology

The survey of the fields were undertaken during the period November 2021 and April 2022 by teams from YCCCART using:

1) A Geoscan RM 15 resistance meter
The completed survey was downloaded to a TerraSurveyor programme and the resultant composite adjusted using the following filters:

- Band weight equaliser
- Grad shade
- Despiked
- Clip SD2
- High Pass filter.
- Periphery Match – all grids
- Colour- Green, White, Black and Red Green Blue 2

2) A Bartlington 601 gradiometer
The completed survey was downloaded to a TerraSurveyor programme and the resultant composite adjusted using the following filters:

- Band weight equaliser
- Grad shade
- Despiked
- Clip SD2
- Periphery Match – all grids
- Colour - Green, White, Black and Red Green Blue 2

The report was written in Microsoft Word.

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Results

Gradiometry

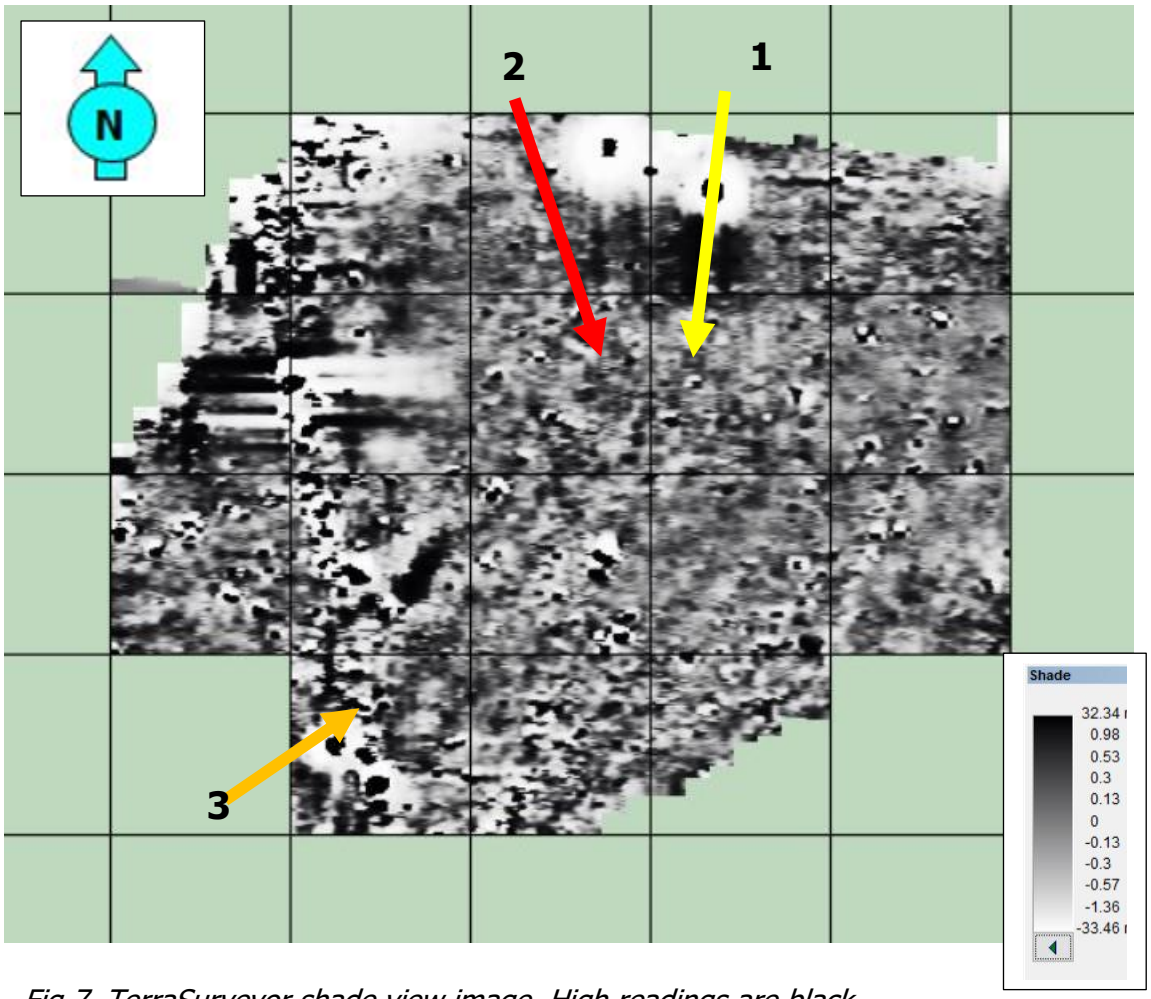

Fig 7. TerraSurveyor shade view image. High readings are black.

The most obvious features in Fig above are

1) The circular feature indicated below the yellow arrow which is sub divided with a square upper left indicated by the red arrow.
2) A linear tube-like feature running south-west from the circular feature towards a linear feature running north-west to south-east
3) Below 2) is a subdivided circular feature indicated by the orange arrow.

A spring runs down the hillside towards these features. Is there an association?

Banjo Enclosures

Could 1) and 2) be a banjo enclosure?

Historic England has published a document which includes the following

"*They are relatively small in area, predominantly sub-circular in outline and are notably furnished with a single, markedly elongated, entrance passageway; this*

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funnelled approach giving the ground plan the appearance of a banjo or frying pan Artefactual evidence from a number of sites, indicates a more intense usage between 100 BC and AD 43. Recent studies of banjo enclosures suggest that most, if not all, were settlement sites, perhaps of high status.

They are usually found on hill slopes, valley sides or at the heads of now dry valleys and occur as isolated sites, as pairs, and occasionally in larger groups – banjo landscapes.

The functions of banjo enclosures, the ancillary enclosures and the outer compounds are disputed. When first identified, banjo enclosures were interpreted as stock corrals, the funnel-like entrances and trackways being related to stock control, the main enclosure being for stock containment. The cambered flint-metalled surface noted at a number of earthwork sites perhaps argues against their use as animal compounds. Additionally, all excavated banjo enclosures have produced evidence of intensive occupation within the central enclosure and since this appears to be similar with the evidence from other enclosed settlements of the same date, many are now thought to be occupation sites, possibly of high status."

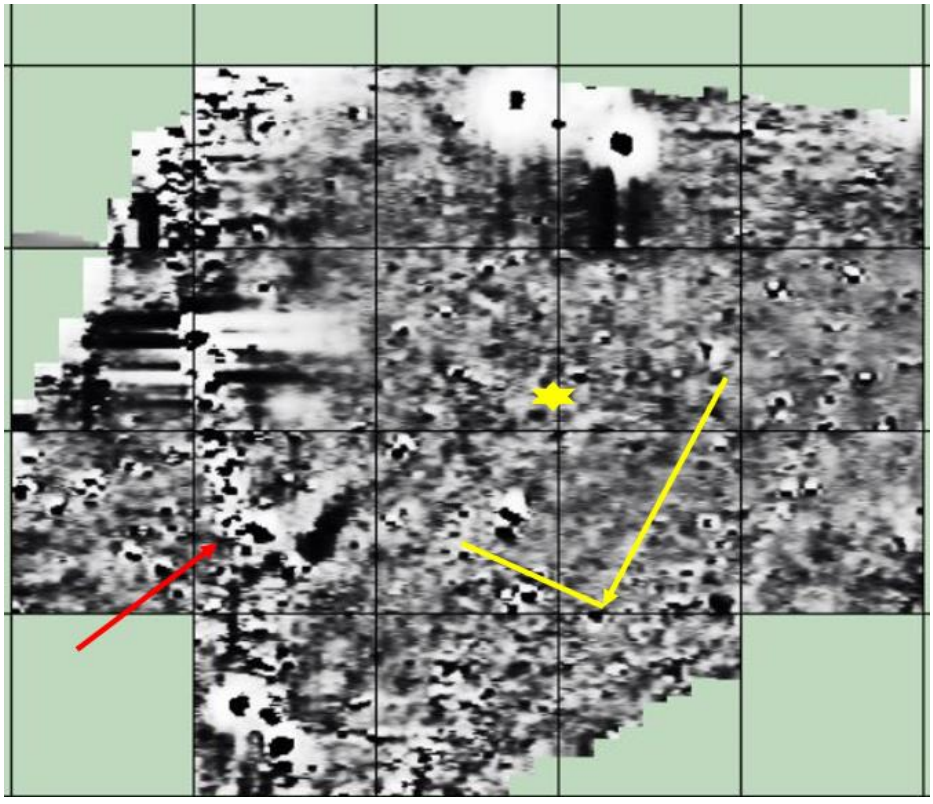

Fig 8. Possible interpretation of gradiometry results

Below the large circular feature in Fig 8 above, indicated by the yellow star, are linear features shown in yellow. The red arrow to the left indicates a field boundary shown on the Tithe Map (See Fig 2)

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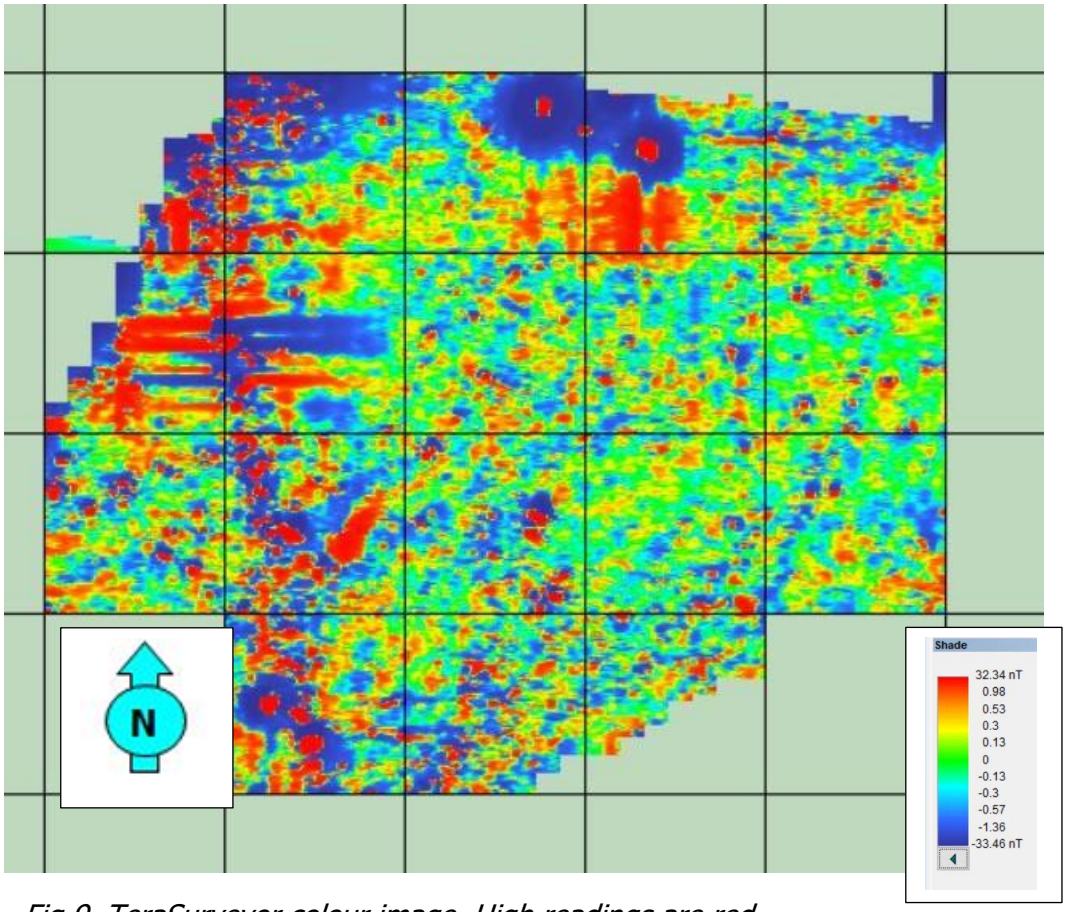

Fig 9. TeraSurveyor colour image. High readings are red.

The field boundary is even clearer on the colour image at Fig 9 above (Red/blue line on the left). Along this boundary and south of the field large flat stones were noted.

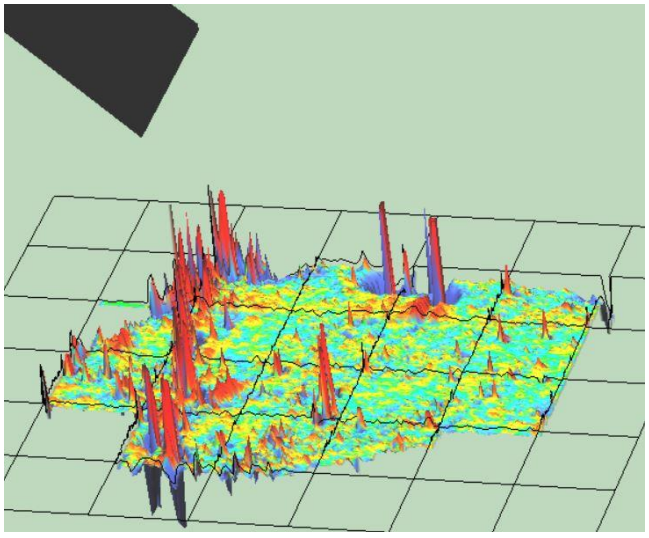

Fig 10. Terra Surveyor 3D image

The 3d image at Fig 10 shows, on the left, the high readings along the line of the field boundary

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Fig 11. Gradiometry results superimposed on Google Earth image.

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Resistivity

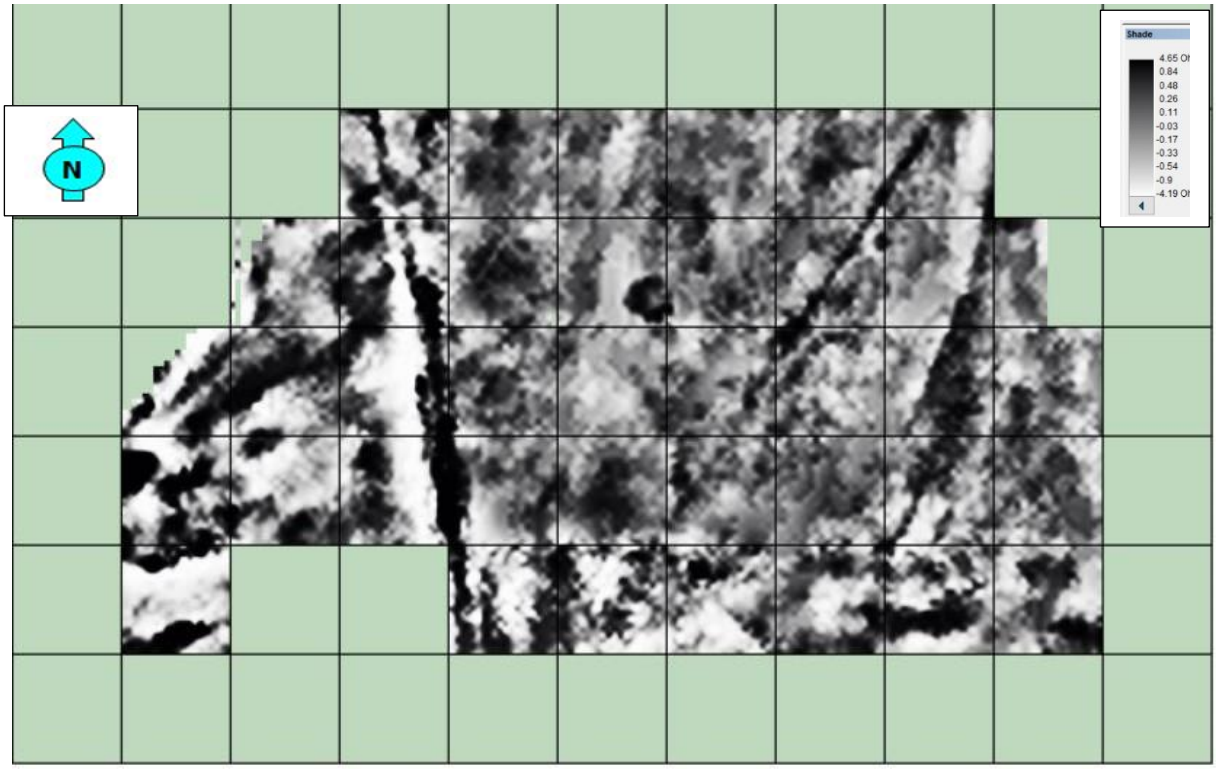

Fig 12: *TerraSurveyor shade view image. High readings are black.*

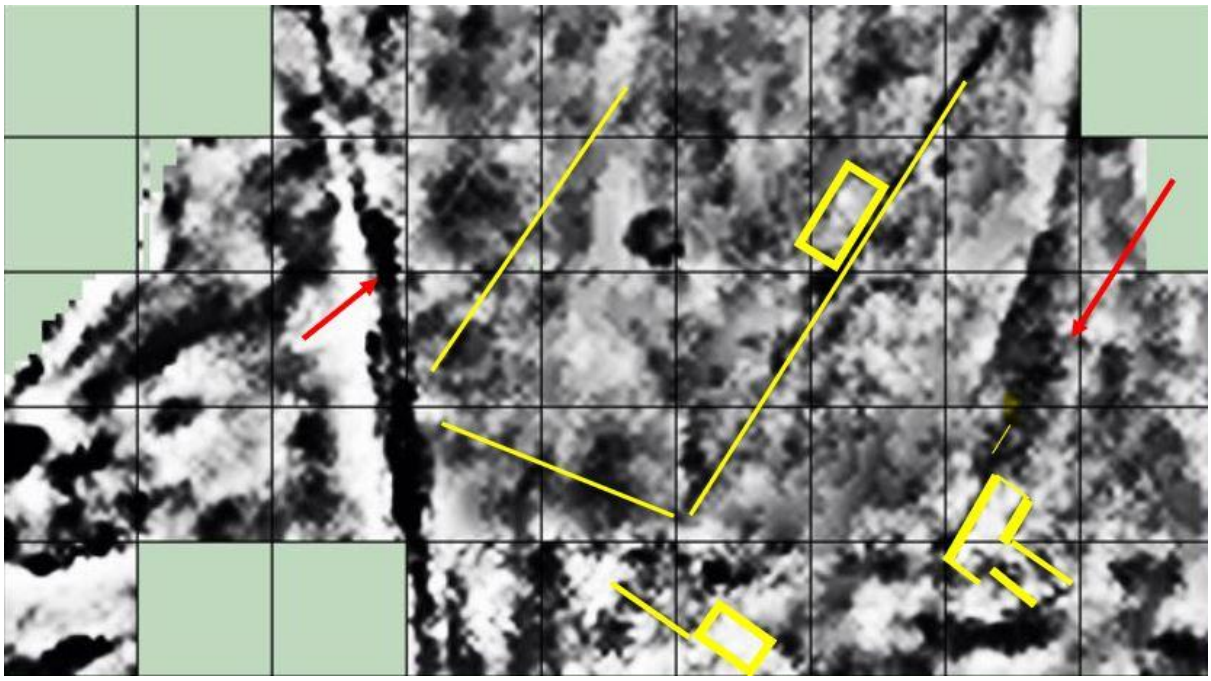

Fig 13: A possible interpretation

1) The black line indicated by the red arrow on the left is the field boundary shown on the Tithe Map at Fig 2.
2) The central yellow lines indicate a possible large enclosure within which (on the right hand edge) is an approximately 15 metre long rectangular feature (a

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potential structure, also illustrated in yellow). The yellow line indicated beside this rectangular feature shows up on the Lidar image (Fig 5),

3) Below (also illustrated in yellow) are two further potential structures, the right side one being on the same alignment as that in the "enclosure."
4) The potential structure, bottom right, is on its south side under the beginning of the hillside and perhaps has an extension to its right.
5) The red arrow on the right indicates a ribbon of small north-south circular features, adjacent to which (left) is a solid back line also on the Lidar image.

Fig 14: Resistivity result superimposed on Google Earth image

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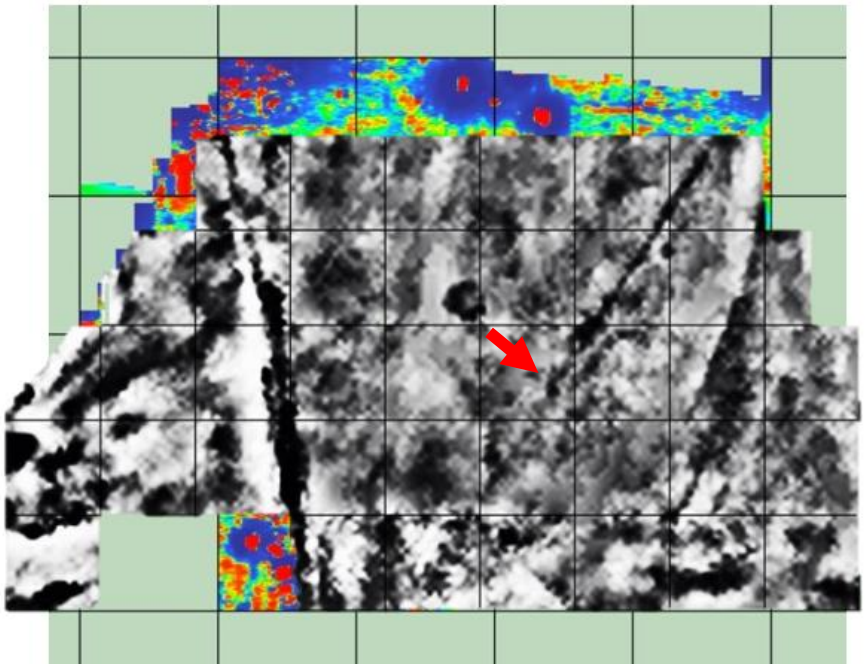

Fig 15: Resistivity result overlaid on gradiometry result.

The circular feature on the resistivity survey indicated by the red arrow sits within the possible large circular feature (banjo enclosure?) on the gradiometry survey and possibly relates to the raised feature on the Lidar image at Fig 6.

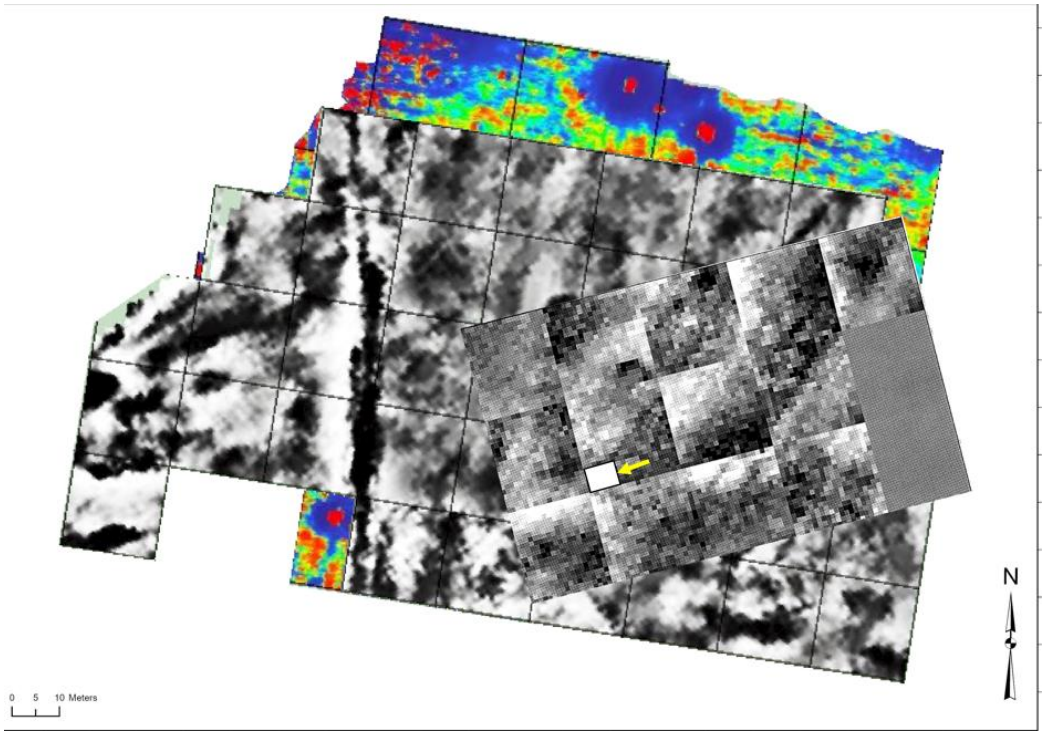

Fig 16: Old and new resistivity surveys overlaid on the gradiometry survey.

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A yellow arrow on Fig 16 above indicates the position of the 2019 trench 1 on the 2004 resistivity result (shown in white). This is not evident on the current surveys.

The relationship between the 2004 and current resistivity survey was established by Richard Pearson using grid layout data provided by Blagdon History Group and utilising related known features shown on Lidar and historic Google Earth imagery.

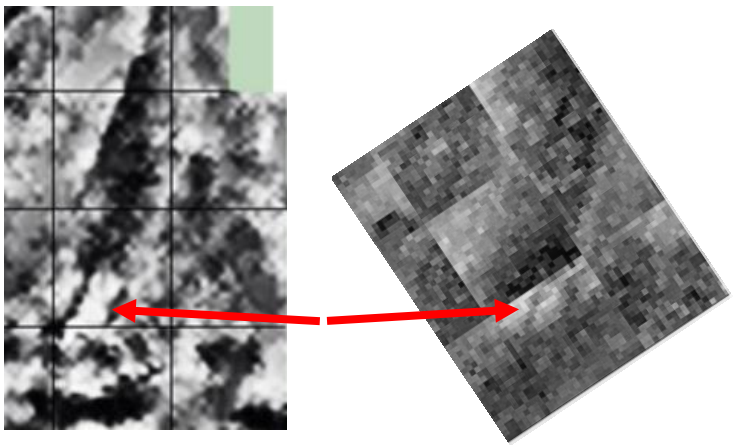

Fig 17: Left is a section of the current survey resistivity survey and right a section from the 2004 survey.

A potential match is illustrated in Fig 17 above. The rectangular features indicated by the red arrows sit below a ribbon of north-south small circular features. The two features, with a similar shape size and alignment are about 15m apart from each other in Fig 16 above.

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Recommendations

A further excavation is required to investigate the range of anomalies.

References

Blagdon Local History Society, 2006	*A History of Blagdon. Volume 2*
Historic England 2018	*Banjo Enclosures*: Introductions to Heritage Assets. Swindon. Historic England.

Chris Short

2022

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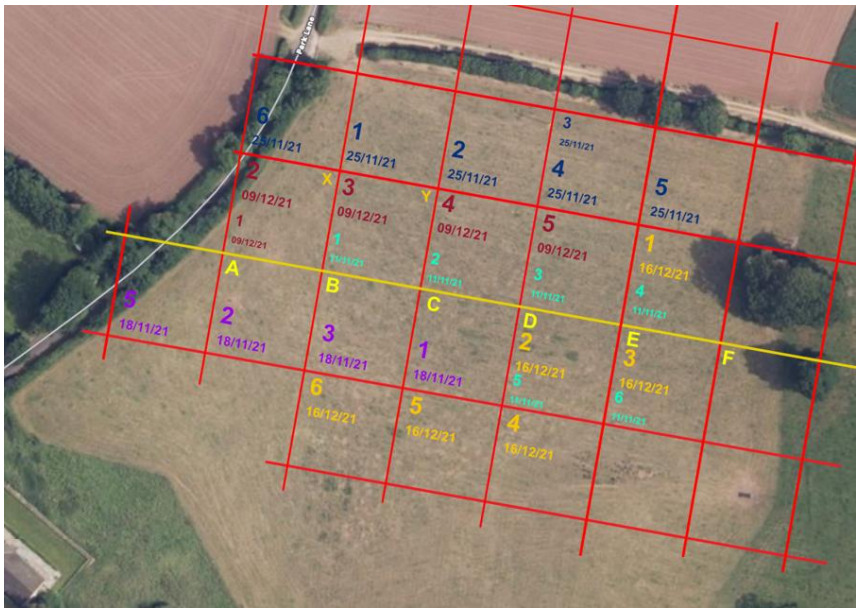
APPENDIX - GRID LAYOUT

(Including TerraSurveyor grid layout)

Gradiometer

Survey area		notes		readings		
		size	walk direction	max	min	mean
Date	Grid number					
11/11/2021		Setting out base line and grids for base line and first row				
	1	30 x 30	N	+100	-100	+0.8
	2	30 x 30	N	+12.7	-10.4	+1.5
	3	30 x 30	N	+24.1	-5.2	+1.6
	4	30 x 30	N	+8.4	-26.1	+1.4
	5	30 x 30	N	+13.6	-4.5	+1.3
	6	30 x 30	N	+28.3	-13.7	+0.8
18/11/21	1	30 x 30	N	+91.6	-100.0	-1.9
	2	30 x 30	N	+78.7	-100	-0.5
	3	30 x 30	N	+100	-100	+0.8
	4	Partial M & R	N	Ignore data operator error		
	5	Partial M & R	N	Data not collected		
25/11/21	1	30 x 30 Wire fence by hedge in all grids	N	+100	-100	-4.3
	2	30 x 30	N	+100	-73.0	-5.0
	3	Partial M & R	N	Ignore grid operator error		
	4	Partial M & R	N	+100	-99.4	-2.9
	5	Partial M & R	N	+5.7	-11.9	-0.3
	6	Partial M & R	N	+99.3	-100	-21.9
09/12/20	1	Partial M & R	N	Ignore grid operator error		
	2	Partial M & R	N	+19.6	-91.3	-2.2
	3	30 x 30	N	+100	-100	-0.2
	4	30 x 30	N	+18.6	-12.3	+0.6
	5	30 x 30	N	+14.0	-8.7	+08
	6	30 x 30	N	Ignore grid operator error		
16/12/21	1	30 x 30	N	+8.3	-45.6	-0.8
	2	30 x 30	N	+27.2	-7.3	-1.2
	3	30 x 30	N	+20.9	-18.1	-1.3
	4	Partial M & R	S	-7.1	-10.4	-1.8
	5	Partial M & R	S	+36.5	-50.7	-1.9
	6	30 x 30	S	+100	-100	-2.9



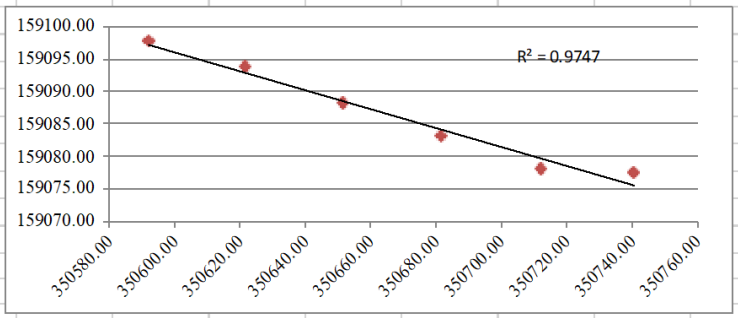
Setting out detail

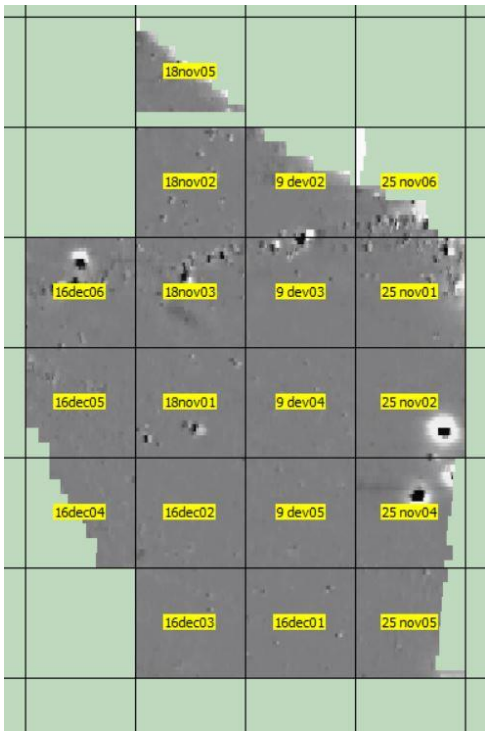
Position A is 6.6m to white mark on fencepost to North and 7.9m to white mark on Fence post to South
Position F 22.72m to large oak to NE and 13.35m to small oak to East

Position of quiet spot – 16.9 West
and 14.2 East of points X and Y as marked on cross points of grid

E 350643.03. N159115.75

Grid Ref.	All ST	
	eastings	northings
A	350592.20	159097.60
B	350621.80	159093.70
C	350651.50	159088.10
D	350681.70	159083.10
E	350712.20	159078.20
F	350740.60	159077.60
G		
quiet spot	350643.03	159115.75





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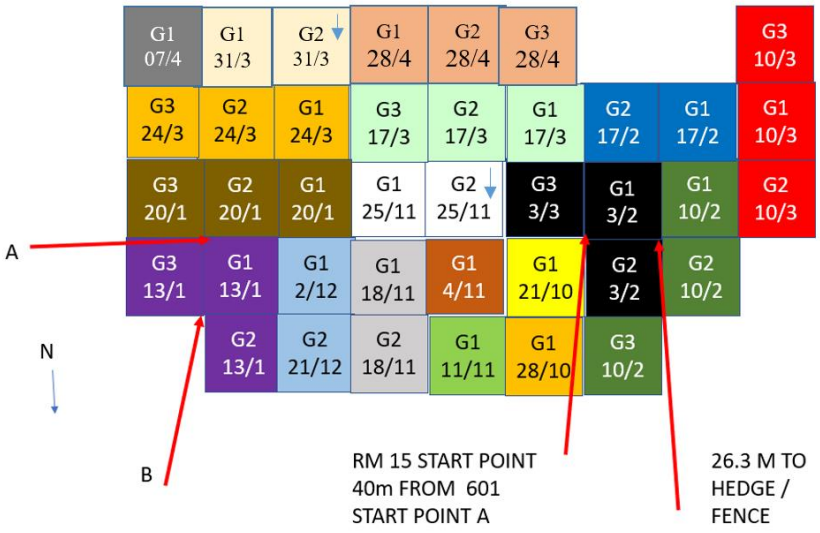
Resistivity

Date	Number of grids	Grid size	Direction of survey
21 October 2021	1	20 x 20m	NORTH
28 October 2021	3	20 x 20m	NORTH
4 November 2021	2 Repeat of grids 2 & 3 Oct 28	20 x 20m	NORTH
11 November 2021	1. Repeat of November 4 grid 2	20 x 20m	NORTH
18 November 2021	2	20 x 20m	NORTH
25 November 2021	2	20 x 20m	NORTH
2 December 2021	2	20 x 20m	NORTH
13 January 2022	3	20 BY 20M EXCEPT GRID 3 = 20 BY 10M BECAUSE OF SLOPE BY TREE	NORTH
20 January 2022	3	20 x 20m	NORTH
3 February 2022	3	20 x 20m	NORTH
10 February 2022	3	20 x 20m	NORTH
17 February 2022	2	20 x 20m	NORTH
10 March 2022	3	20 x 20m Grid 2 only 6m one end	NORTH
17 March 2022	3	20 x 20m	NORTH
24 March 2022	3	20 x 20m	NORTH
31 March 2022	2	20 x 20m	NORTH
7 April 2022	1	20 x 20m	NORTH
28 April 2022	3	20 x 20m	NORTH



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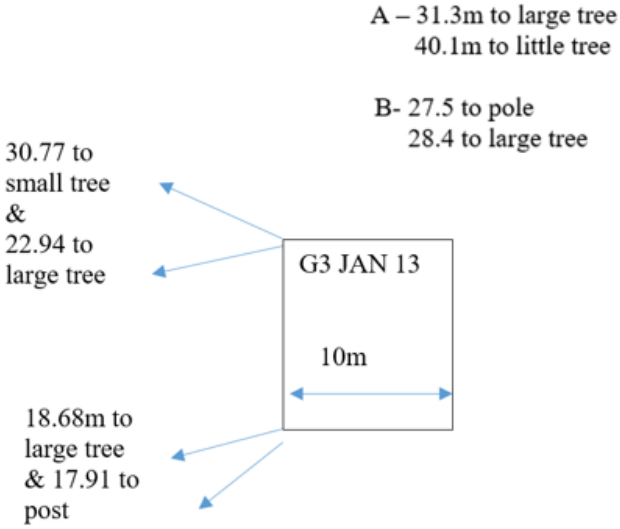
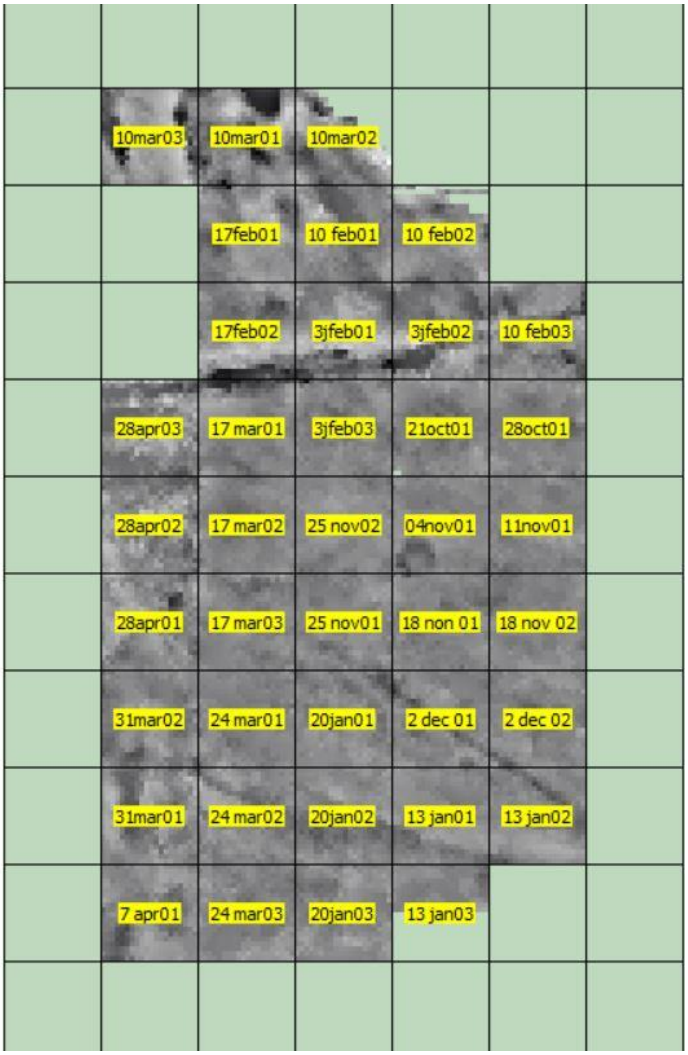

A – 31.3m to large tree
40.1m to little tree
B- 27.5 to pole
28.4 to large tree
30.77 to small tree & 22.94 to large tree
G3 JAN 13
10m
18.68m to large tree & 17.91 to post


10mar03
10mar01
10mar02
17feb01
10 feb01
10 feb02
17feb02
3jfeb01
3jfeb02
10 feb03
28apr03
17 mar01
3jfeb03
21oct01
28oct01
28apr02
17 mar02
25 nov02
04nov01
11nov01
28apr01
17 mar03
25 nov01
18 non 01
18 nov 02
31mar02
24 mar01
20jan01
2 dec 01
2 dec 02
31mar01
24 mar02
20jan02
13 jan01
13 jan02
7 apr01
24 mar03
20jan03
13 jan03