

PEOPLE OF THE HEATH: UNDERSTANDING AND CONSERVING PETERSFIELD'S PREHISTORIC BARROWS



GEOPHYSICAL SURVEYS OCTOBER 2015

Mary and Neville Haskins

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Prepared by: Dr Neville J. Haskins, Mary I. Haskins

Position: Leaders, Geophysical Survey Team

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This report has been prepared for the “People of the Heath: Understanding and Conserving Petersfield's Prehistoric Barrows” project

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Photo front cover – Barrow 17 from the west.

SUMMARY

A geophysical survey using an earth resistance meter has been carried out on two barrows which are part of the Petersfield Heath group.

The survey of barrow 8 showed an area of relatively low resistance corresponding with the mound forming the barrow itself. The contrast was pushed to show variation but this remained slight. The barrow is approximately 30m. diameter. No significant features were observed within this area. The barrow had been covered with small trees, holly, bramble, etc. This had been cleared but left a thick layer of decomposing leaf litter which reduced the contrast for the measurements. In addition the presence of mature trees on the barrow also reduced the response. The lack of variation across the barrow may therefore be an artefact of the condition of the overlying soil.

The survey of barrow 17 showed a feature with raised resistance comprising a ring of approximately 7m. diameter. The area surveyed had been covered with tussocks of grasses and soft rush and this had been “topped” prior to the survey.

1. INTRODUCTION

1.1 THE CIRCUMSTANCES OF THE SURVEY

Petersfield Heath is situated on the east side of the town of Petersfield in Hampshire. It is home to a nationally important Bronze Age barrow cemetery comprising a total of at least 21 barrows, known as the Petersfield Heath group. Round barrow cemeteries of this type date from approximately 1900-1500 BC although some individual monuments may be earlier. They can contain different types of round barrow and often may contain additional burials between the mounds.

The Petersfield Heath group has been recognised for over 200 years, and early maps such as the first edition Ordnance Survey of 1810 indicate that the cemetery was once far more extensive with additional barrows to the north and east which are now destroyed by modern housing.

Apart from Ordnance Survey maps, the barrows have not been extensively surveyed and remain little understood. In the 1930s Stuart Piggott produced a plan of their locations on the Heath (Fig. 1) (Grinsell 1939). At least one barrow, number 4, was planned in detail by Piggott. There is a possibility that some of the monuments have been degraded or erased over time. The site was also developed as a golf course which led to the introduction of raised tees which look confusingly like barrows! Extensive tree planting took place on the barrow mounds. Dredged material from the Heath Pond may also have been left in dumps on the Heath in the past.

1.2 THE AIMS OF THE PROJECT

This monument complex deserves to be better understood and therefore Petersfield Museum has sponsored the project "People of the Heath: Understanding and Conserving Petersfield's Prehistoric Barrows". The project is largely funded by the Heritage Lottery Fund and the South Downs National Park Authority. Part of this community project will investigate the Mesolithic and Bronze Age prehistory of the Heath. This archaeological survey is directed by George Anelay and Stuart Needham. The aims of the project are:-

1. To understand the evolution of Petersfield Heath, with special reference to the Bronze Age funerary complex.
2. To place this complex in the broader settlement and land use patterns of the region during the Neolithic and Bronze Ages.

As part of this project, an advisory committee was formed and first met on 30th May 2012. The committee included interested parties such as Hampshire County Council, University of Reading, Petersfield Town Council; Petersfield Tomorrow; East Hampshire District Council, Chichester District Council; Historic England; Friends of Petersfield Heath; Petersfield Area Historical Society. and the South Downs National Park Authority. The committee supported the proposal from the archaeological directors to undertake geophysical surveying of the Heath barrows and the areas in between.

The nature of Petersfield Heath (peaty soils overlying sandy sub-soils and variable water content) is such that it was not certain that geophysical surveying would give adequate results. A pilot study was proposed to test the available geophysical methods (magnetometry and earth resistance) for identifying features associated with the barrows such as banks, ditches and trackways. This study indicated that twin probe earth resistance measurement was the technique of choice, giving clear results despite the nature of the Heath soils (Haskins and Haskins 2012).

Part of the main project is to introduce local inhabitants to the use of geophysical techniques before undertaking archaeological investigations. To meet these requirements time is made available during the surveys to train and explain the techniques to inexperienced volunteers from the community who wish to be involved. In addition, members of the survey team would explain the activities to members of the public passing by.

1.3 THE LOCATIONS OF THE SURVEY

The areas selected for this survey are shown (Figure 2). The position of the grids is approximate at this scale. Barrow 8 had until recently been covered with woodland comprising small trees with an undergrowth of bramble, bracken and gorse. This was cleared by volunteers prior to the survey but the clearance left piles of loose scrub, etc. Mature trees were also present. The surface was covered in a layer of leaf litter of varying depth. Main footpaths ran along the western side and across the south eastern corner.

Barrow 17 was in a flat area clear of woodland scrub but covered with tussock grasses and soft rush. These were cut before the survey leaving rough ground with stalks of 10-20cm in height.

2. METHODOLOGY

2.1 LICENCE

An Historic England licence was obtained to carry out this geophysics survey. This was necessary as both barrows are Scheduled Ancient Monuments and are protected under the Ancient Monuments and Archaeological Areas Act 1979 (as amended), section 42.

2.2 SCRUB CLEARANCE

Barrow 8 was cleared by Community Payback Volunteers working under the guidance of the Friends of the Heath. The area over Barrow 17 was cut by a contractor again arranged by the Friends of the Heath.

2.3 LAYING OUT GRIDS

The grids for Barrow 8 were laid out on a north-south alignment using a baseline of 40m. length running along the eastern edge.

The single grid for Barrow 17 was laid out using the southern edge as a baseline.

2.4 EARTH RESISTANCE (TWIN PROBE) SURVEY

Earth resistance surveying was carried out using a Geoscan Research RM15 twin probe earth resistance meter. The pilot study (Haskins and Haskins 2012) had shown this to be the most appropriate technique on the soils of the Heath. This technique measures fluctuations in the soil resistivity due to the presence of varying amounts of water. Dry materials such as sand will contain less water than soil and will exhibit higher resistivity, whilst ditches and peat may contain more water leading to lowered resistivity. Walking lines were laid out at 1m intervals and the instrument was moved in 0.5m steps to produce the plot. All grids were walked in a north-south direction and walking up and back along the lines in a zig-zag manner. When an obstacle was encountered such as a large tree or tree stump, dummy logs were acquired.

Data were collected and stored for later download to a computer. Data were processed using a program (Geoplot, Geoscan Research) to construct an intensity plot of the variation in resistivity across the grids. Further processing used a program (Snuffler, Sussex Archaeology) to construct variable range plots.

2.5 LOCATING TREES ON THE BARROWS

The positions of trees and tree stumps were taken from the dummy logging acquired during the survey.

3. FIELDWORK RESULTS

3.1 WEATHER AND OTHER ENVIRONMENTAL CONCERNS

The weather preceding the survey had been dry with occasional wet days. The first day of the survey (October 23rd) was dry but overcast. It was planned to survey on the 24th but this was cancelled due to frequent and possibly heavy showers forecast during the day (which duly arrived). The third day, October 25th, was sunny for the majority of the day.

3.2 TWIN PROBE RESISTIVITY SURVEYS OF BARROWS 8 AND 17

The twin probe resistivity survey requires the operator to push the probes into the ground at regular intervals to make a reading. There was no problem in doing this across both barrows as the ground was soft.

The density plot for Barrow 8 is shown in Figure 3. This barrow has a number of mature trees (shown in red). There was also a well-trodden footpath running along the western edge as well as a path running from the south west through the south eastern corner. Experience has shown that footpaths tend to give high resistivity. The top of the barrow had a uniform response being approximately 220-270 Ω . This small variation was highlighted by processing the data to give a narrow scale using the program Snuffler (Figure 4). Around the base of the mound the ground showed a response ranging from 350 to 500 Ω . This lack of contrast is probably explained by the covering of decomposing and wet leaf litter of varying depth which will affect the response of the sensing probes. In addition piles of sandy material were thought to be sand brought to the surface by bioturbation

The density plot for Barrow 17 is shown in Figure 5. Apart from the ring there is an area of raised resistance to the west of the ring. Note the close proximity of Barrow 16 which could not be surveyed at this time as it was heavily wooded.

COMMUNICATING WITH THE PUBLIC

An important aspect of this project is to inform the public who are passing by. Sadly only a few wanted to stop and take interest.

4. DISCUSSION

4.1 CARRYING OUT THE SURVEY

The survey of Barrow 8 was problematic. This barrow had been covered with an impenetrable copse beforehand and although much of this had been cleared, there were many remaining mature trees as well as stumps and fallen logs. In addition the undergrowth of mainly gorse, holly and bracken had been collected but this left piles of soft sandy material exposed. There was a thick layer of mulch from leaf litter. It was thought that this in particular reduced the ability to obtain good contrast across the barrow.

The survey of Barrow 17 was relatively flat with the rough tussocks similar to those that created problems when we surveyed sites 11, 23 and 24 (Haskins & Haskins June 2014). However the area had been cleared of most of the tall grasses and rushes (see front cover). There was good contrast for this survey allowing easy visualisation of the expected circular feature (Fig. 3). This area was relatively flat and as such was used for training the new volunteers who took part in this survey.

4.2 RESULTS FOR BARROW 8

The density plots for Barrow 8 are shown in Figures 3 and 4. The low resistivity area corresponds with the mound of the barrow and shows this to be approximately 30m. in diameter. The higher resistance area around the base of the barrow contains many trees which will dry out the soil and increase observed resistance. This is seen more clearly in Figure 3. The very high resistance in the south east corner corresponds with a footpath. This has been observed previously (Haskins & Haskins, 2014). The plot was aligned with the topographical survey for this part of the Heath (Figure 6).

4.3 RESULTS FOR BARROW 17

The density plot for Barrow 17 is shown in Figure 5. The survey comprised a single 20m. grid laid on a north-south axis covering the site. There is a clear feature comprising a ring of greater resistivity approximately 7m. diameter to the west of centre of the grid. It is probable that this is the barrow described by Piggott and which is shown on his plan in this position (Figure 1). However this size could also be due to a hut circle. The plot was aligned with the topographical survey for this part of the Heath (Figure 7). Red triangles mark the positions of semi-permanent marker pegs used for the earlier survey.

4.4 SELECTION OF VOLUNTEERS

For this survey, an open invitation was made. Three novices joined us. The survey across Barrow 17 was used for initial training being a relatively straightforward site. Seven experienced volunteers also joined us.

4.5 RECOMMENDATIONS

The survey of Barrow 8 showed little variation across the top of the barrow or around the base. By reducing the scale for the plot it appears that this is a mound approximately 30m. diameter which has slumped. This deserves further investigation to determine the original extent of the barrow mound.

The survey of Barrow 17 has shown a significant feature not visible from the surface. Again this would be worthy of further investigation as it is small for a barrow but could be a hut circle instead.

ACKNOWLEDGEMENTS

We acknowledge the help and guidance given by George Anelay and Stuart Needham as directors of the project. George Anelay also provided the plots pasted onto the topographical survey of the Heath.

We acknowledge the huge effort by the Friends of Petersfield Heath led by Richard Warton (who also organised the participation of community payback volunteers in this) to clear the tall vegetation and bramble covering the areas before the survey could go ahead.

We thank the Remote Sensing Team (Andy Payne, Neil Linford and Paul Linford), Heritage Protection Department, Historic England, Fort Cumberland, Portsmouth for their advice. We also thank the Chichester City Walls Project Trust for the loan of their resistivity meter, with especial thanks to James Kenny for organising this.

We thank the volunteer surveyors who carried out this survey:- Ineke Allez, Dom Escott, Peter Gilliard, Jane Godden, Hannah Jeffery, Donna Marshall, Chris Newbery, Lyn Pease, Helen Poulter and Carl Raven. Well done all of you!

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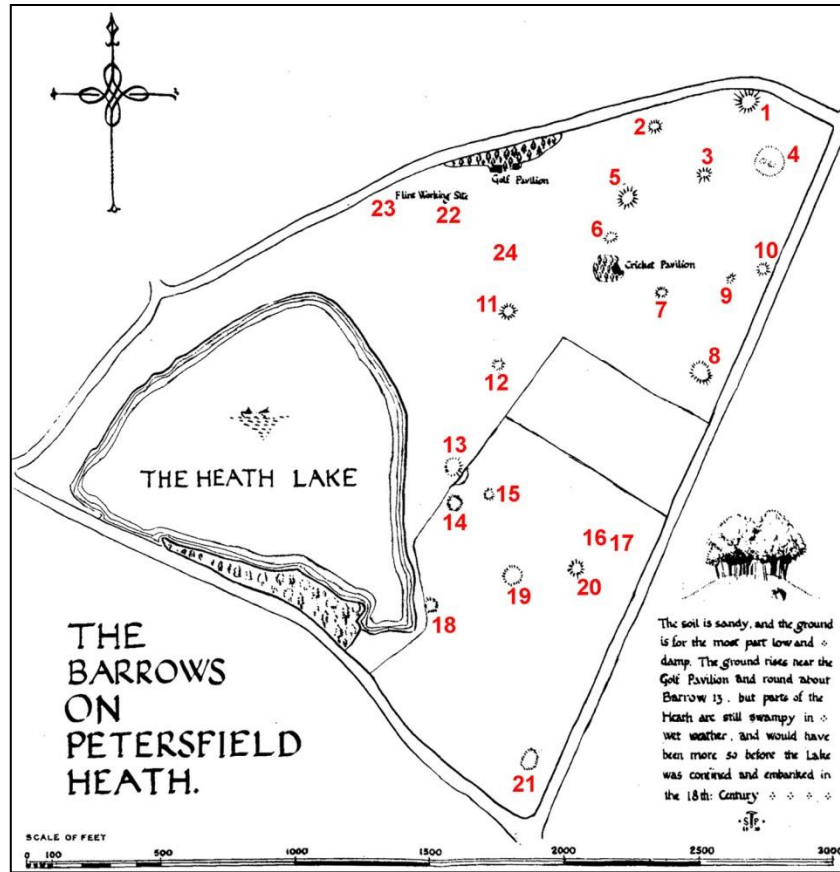


Figure 1: Piggott's plan of the heath and his numbering system.

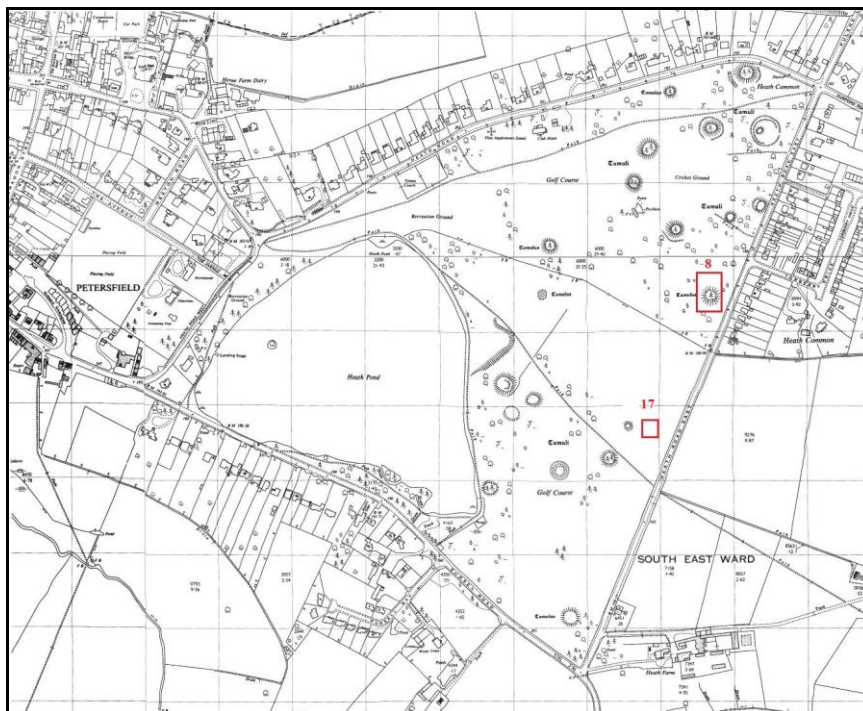


Figure 2: The survey grids used for the project.

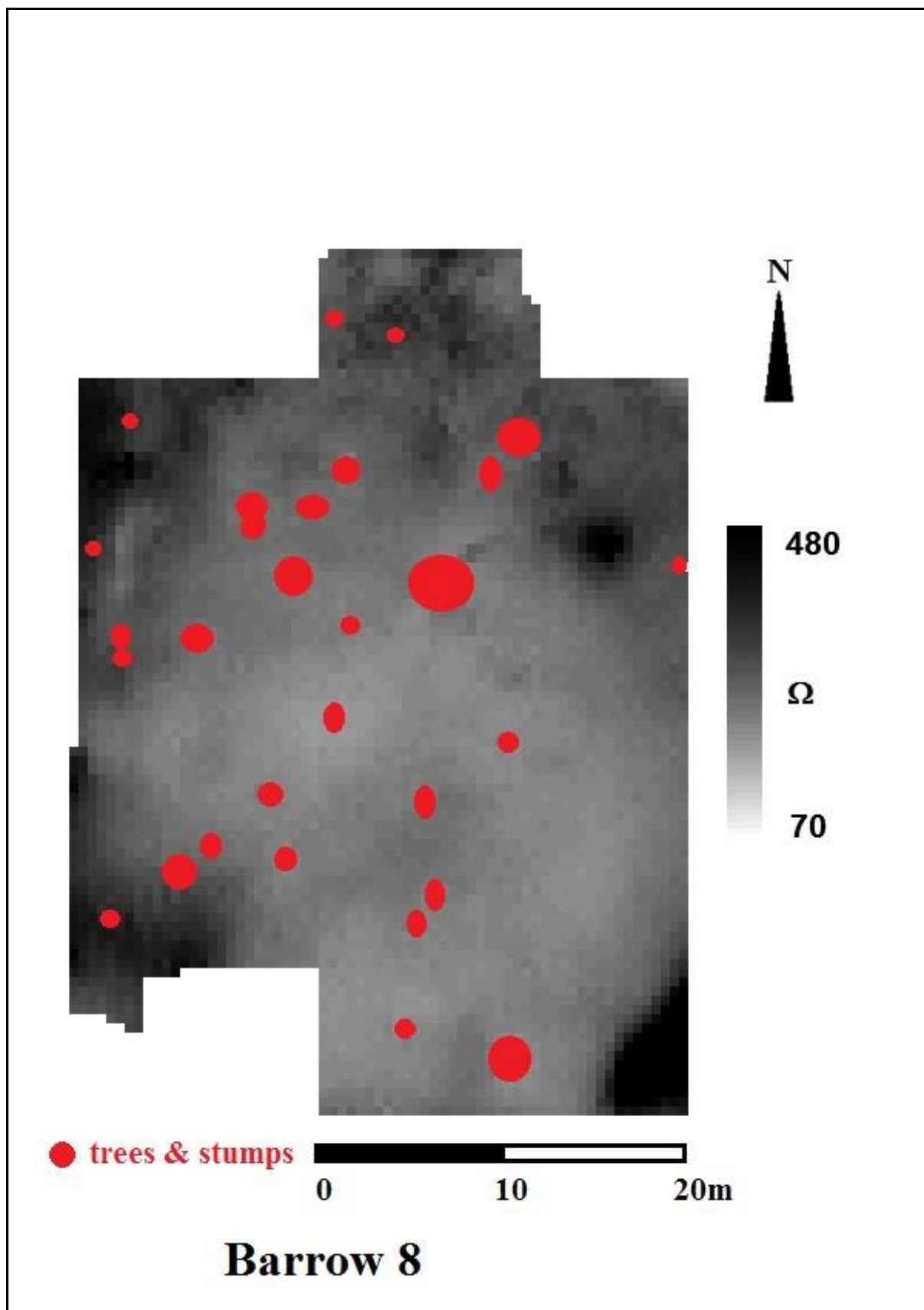


Figure 3: Geophysical survey of Barrow 8

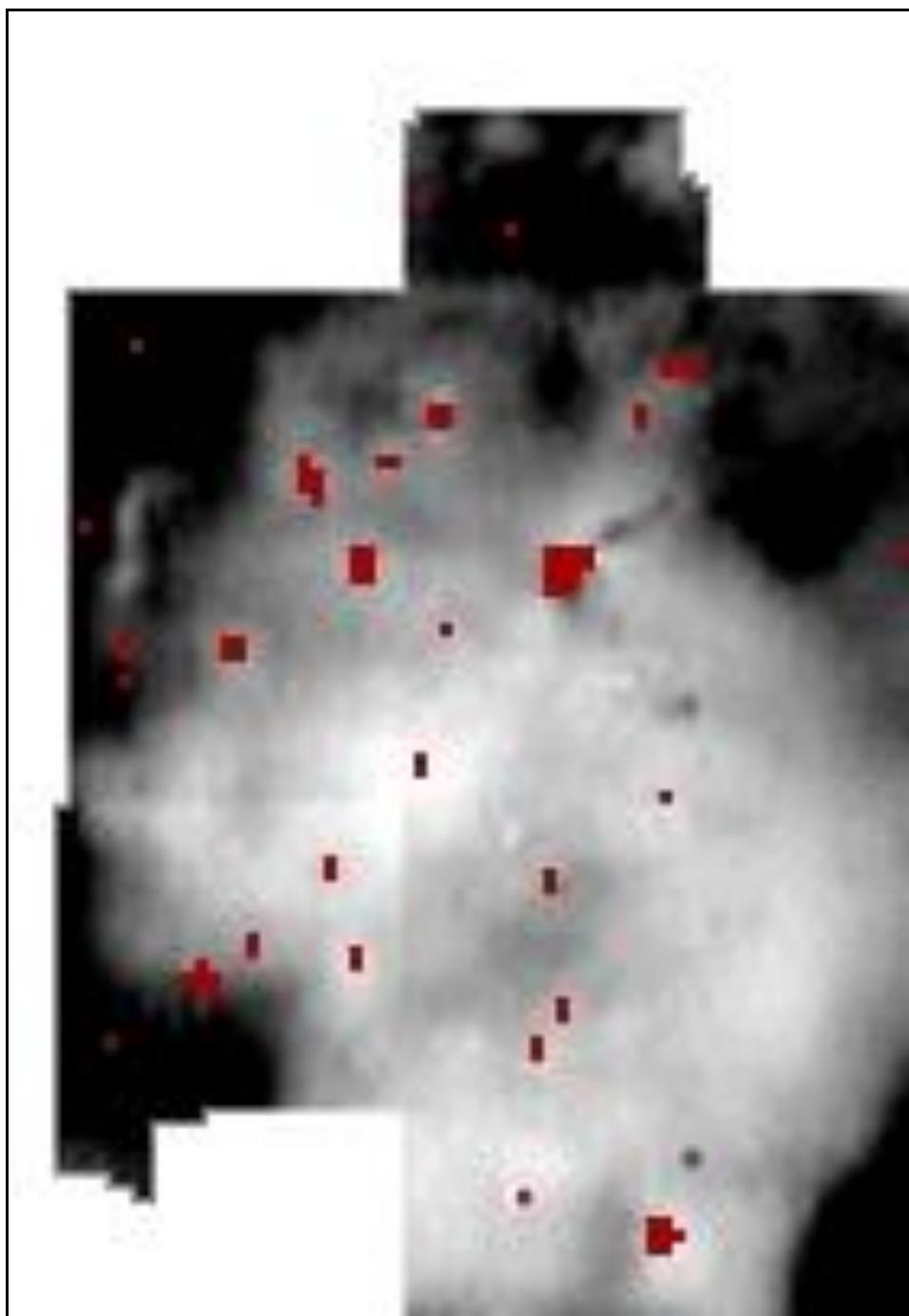


Figure 4. Data acquired from Barrow 8 processed using Snuffler software. The contrast range was much reduced to show slight variations.

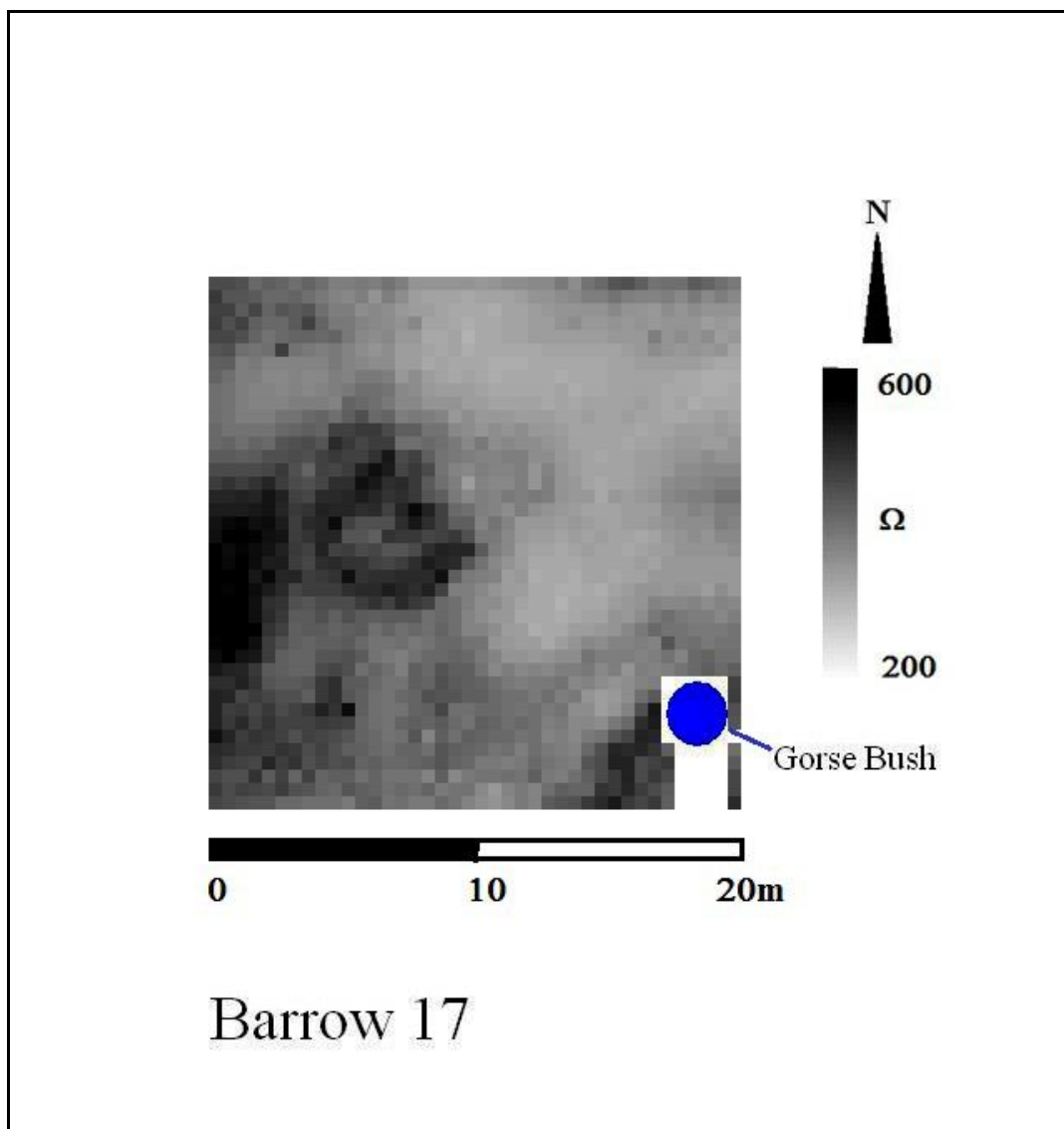


Figure 5: Geophysical survey of Barrow 17.

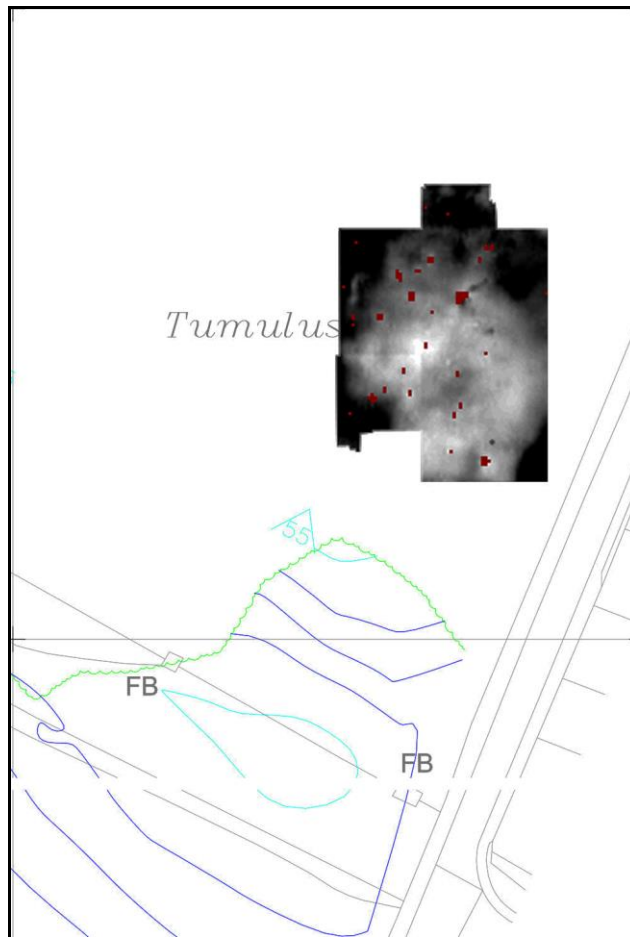


Figure 6: Image from Barrow 8 pasted onto the topographical survey

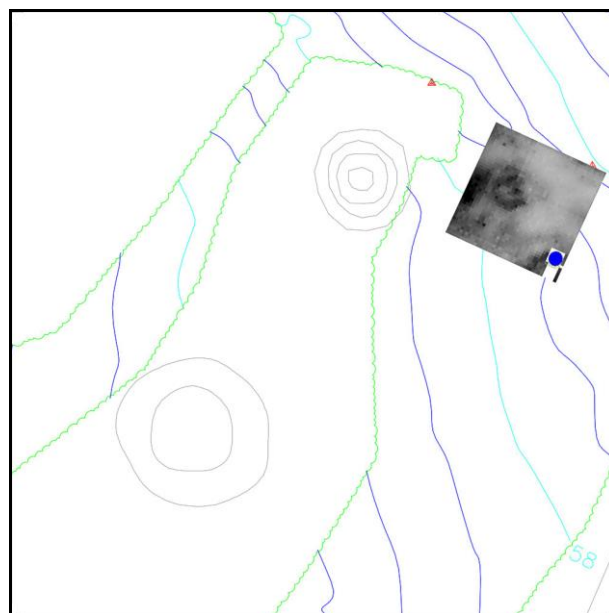


Figure 7: Image from Barrow 17 pasted onto the topographical survey