

**Scotney Castle, Lamberhurst, Kent**  
**Archaeological Survey (April 2011)**



**Topographic and Geophysical Survey: Interim Report (July 2012)**

**University of Southampton, Department of Archaeology**

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# 1 Introduction & Background

Between the 4<sup>th</sup> to the 8<sup>th</sup> April 2011 a topographical and geophysical survey of Scotney Castle, Lamberhurst, Kent was undertaken by the Department of Archaeology, of the University of Southampton. The survey was conducted by students and staff of the University. The survey was not confined to within the moat area of the Castle, as in previous survey work (Martin, D. *et al* 2008). The survey was conducted over a larger area in order to assess the surrounding landscape.

The project work was in collaboration with The National Trust and with local archaeologists and historians. As a National Trust owned estate, the survey was 'on show' to the public, and therefore demonstrating an element of engagement with the local community.

## 1.1 Location

Scotney Castle is located in the county of Kent, near the border with East Sussex. It lies 1.5km south-east of the village of Lamberhurst (Hancock. A. 2008) (Figure1). The site of 'Old Scotney Castle' lies at E:568969 N:135233 (Figure 2), which is the point of the old ruins inside the moat area. The old ruins of Scotney Castle lie in the valley floodplain of the River Bewl.

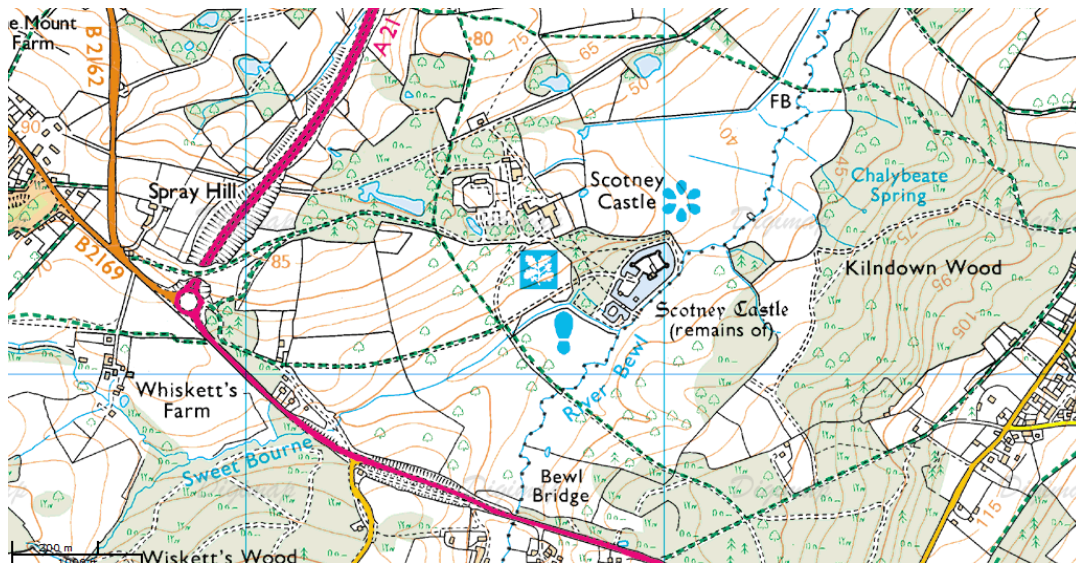


Figure 1 - OS Map of site and surrounding area. Scale: 1:50,000 – Source: Digimap.  
<http://digimap.edina.ac.uk>

## 1.2 Geological Background

The soils within the Scotney Castle area are of the Wickhan 1 association and of the Curtisden Association (Hancock. A. 2008 p.4). The overlying geology is referred to as being part of the 'Hastings group', consisting of Ashdown beds, Wadhurst Clay and Tunbridge Wells Sand; these are freshwater floodplain deposits. Due to the Castles proximity to the River Bewl, and continuous landscaping, this overlying geology may have been disrupted or buried by the river, or human activity (Hancock. A. 2008 p.4). The underlying geology belongs to the Wealden Group, characterised by mudstone, sandstone and siltstone (Figure 2). This geology is potentially porous, which may affect water content in soils and subsequent resistivity results.



Figure 2 - 1:625000 scale geology map demonstrating Scotney's Position in the Wealden Group- mudstone, sandstone and siltstone. Image Reproduced with the permission of the British Geological Survey ©NERC. All rights Reserved.

## 1.3 Archaeological & Historical Background

### 1.3.1 Pre-Medieval (before 1066)

No pre-medieval material is known at the site.

### 1.3.2 Medieval (1066-1500)

Scotney Castle was built around c.1378-80, by Sir Roger Ashburnham. The Landscape was predominantly wooded at this time. The Castle itself consisted of 'curtain' walls, though little else is known about the 14<sup>th</sup> Century configuration as little of it survives (Hancock. A. 2008 p.7). The base of the gatehouse and the south-eastern tower remain, the latter of which is known as the 'Ashburnham Tower'. A deer park was also present, possibly to the north-west of the castle around the location of the later Victorian country house (Hancock. A. 2008 p.7) (Martin, D. *et al* 2008 p.6).



### 1.3.3 Post-Medieval (1500-1900)

Through the late 15<sup>th</sup> to early 16<sup>th</sup> centuries the estate was owned by the Darrell family, during which time they reconstructed and added to the castle (c. 1580 & c. 1640). The estate was then bought in 1778 by Edward Hussey. His grandson in the 1830s commissioned Anthony Salvin to design a Victorian, or 'Neo-Tudor', country house on the hill to the north-west of the castle, as demonstrated in Figure 7 (ADS 2008) (Martin, D. *et al* 2008 p.1.). Later phases of the Castle can be seen to have undergone constant renegotiation and construction into the mid-17<sup>th</sup> century and later (Martin, D. *et al* 2008 – Appendix B).

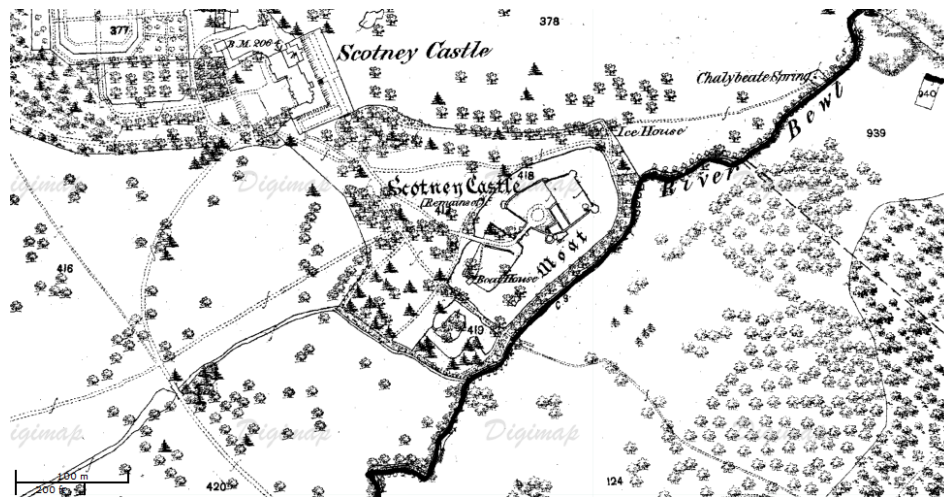


Figure 3 - 1:2500 scale. -1ST Edition Map of Scotney Castle, Kent, from 1870. Source: Historic Digimap.

### 1.3.4 Modern (1900- Present)

The area of the estate within the moat became a Scheduled Ancient Monument in 1933 and the remains of the old castle are a grade 1 listed building. The gardens of the estate are also protected under the English Heritage Register of Historic Parks and Gardens. The Estate was left to the National Trust in 1970, on the death of Edward Hussey III's grandson.

Archaeology South East commissioned a Geophysical survey for the National Trust in September 2008. An area of 0.25 hectares, within the confines of the moat, underwent geophysical survey. The aim of the work was to identify the presence of sub-surface remains of the Castles outbuildings.

The National Trust commissioned an Interpretative Historic Building Survey which was completed in November 2008 (Martin, D. *et al* 2008). The survey was conducted during a period of repairs which gave access to areas otherwise rarely seen. The aim of the work was to better understand how the building developed over time.

## 1.4 Aims

The project aims to locate and identify features in order to better understand the surrounding landscape of the castle. One of the features expected to be found was site of the Medieval mill, located to the south-west, and upstream, of the Castle (ADS 2001) (Figure 8). This will be a point of focus in interpreting the results from the survey.



Figure 4 - Aerial Photo of site, Viewing Altitude 1.39km. Possible location of Mill Highlighted. © Google Earth.

## 2 Survey Methodology

### 2.1 Overview

Geophysical and topographical survey techniques were employed for the work carried out at Scotney Castle. Topographical survey was chosen as it provides an effective means for mapping the topography on a macro-scale, in a relatively small timeframe. Resistivity was chosen as the geophysical technique due to its cost effective nature and simplicity. Combining both survey methods should allow for an appreciation of both surface and sub-surface features.

## **2.2 Methods & Equipment**

Topographical survey was conducted using Leica TCR 800 Series (Reflectorless) Total Stations, with readings taken with one person manning the total station, another at a target point with prism set at known target height and a final person recording point information and other metadata in a notebook, a notebook associated to one specific total station. Changes ranging from string, spot-heights and features were all noted accordingly and cross-referenced with data downloaded to LISCAD from a total station.

The resistivity survey was conducted using a Geoscan RM15 Resistance Meter. The survey was conducted in teams of four people, one operating the resistance meter, another aiding, and two people moving 1m marker tape. Grids were marked out in the appropriate areas.

## **2.3 Survey Strategy**

### **2.3.1 Topographic Survey**

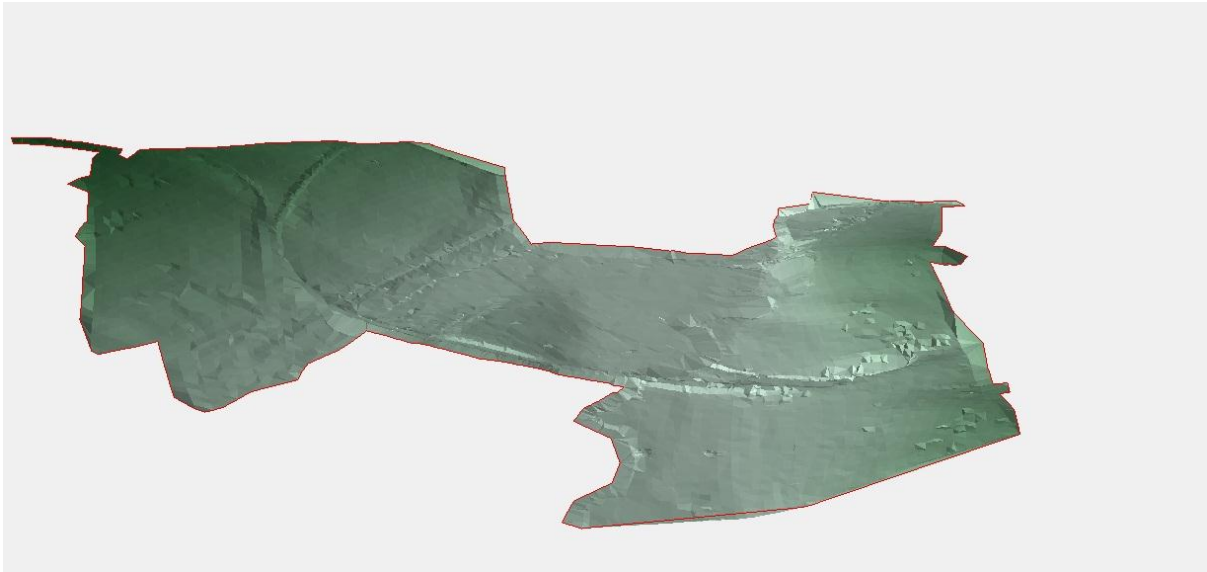
Three total stations were used for the topographical survey of the site, with teams of four operating each total station in a different location, to cover as much of the site as possible. A series of station points were set up in different locations, from which readings were taken. Throughout the week new stations were setup to provide a means to survey more of the site, however, these new stations had to be within the line of site of a previous station for orientation purposes.

Details of the site were taken during the survey, these included the obvious topographical and physical geography features, for example the top and toes of slope, bank or ditch, watercourses and vegetation. Features not associated with the physical geography of the site were also recorded, including; paths, tracks, sign posts, boundaries and gates. It is worth noting here that the completeness of certain features, and the entire survey itself, was limited by the accessibility and visibility of certain features. Points taken for a certain feature were coded in relation to said feature prior to those points being taken, with the purpose of providing clear features through the download and interpretation stages.

General spot heights, used in generating the topography of the site, were taken at 5 metre intervals along transects placed 5 metres apart. This was achieved using ranging poles to mark out transects, and 5 paces to approximate 5 metre intervals.







**Figure 6 - Representation of complete survey area.**

The specifically coded feature data allowed for the creation of feature maps, these were created for specific sections of the site, but also one was created for the whole site (Figure 8). Feature maps are particularly useful in outlining relief features which may not be accurately represented in height maps or 2.5D representations of the site.

The topographical data also allowed for the construction of contour and height maps, further demonstrating the relief of the site, but also providing a quantification of the changes in elevation around the site (Figures 7 & 9).

The two small 60m<sup>2</sup> sections of resistivity can be placed in their correct position, relative to the rest of the site, demonstrated in figures 14 & 18; height data has been included to provide a clearer context for their interpretation.

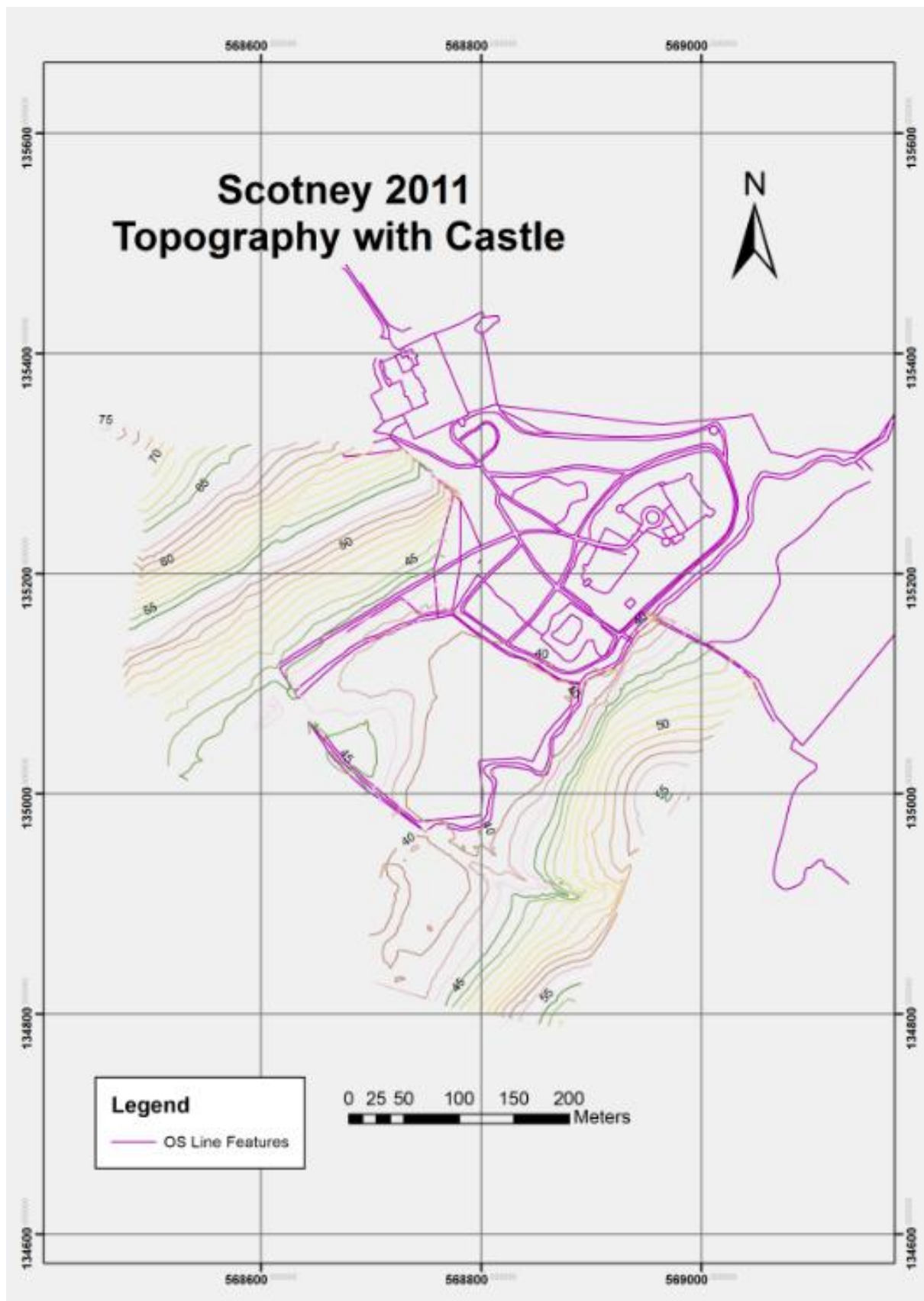


Figure 7 - Survey Topography & OS line features. Contours set to 1m line intervals.

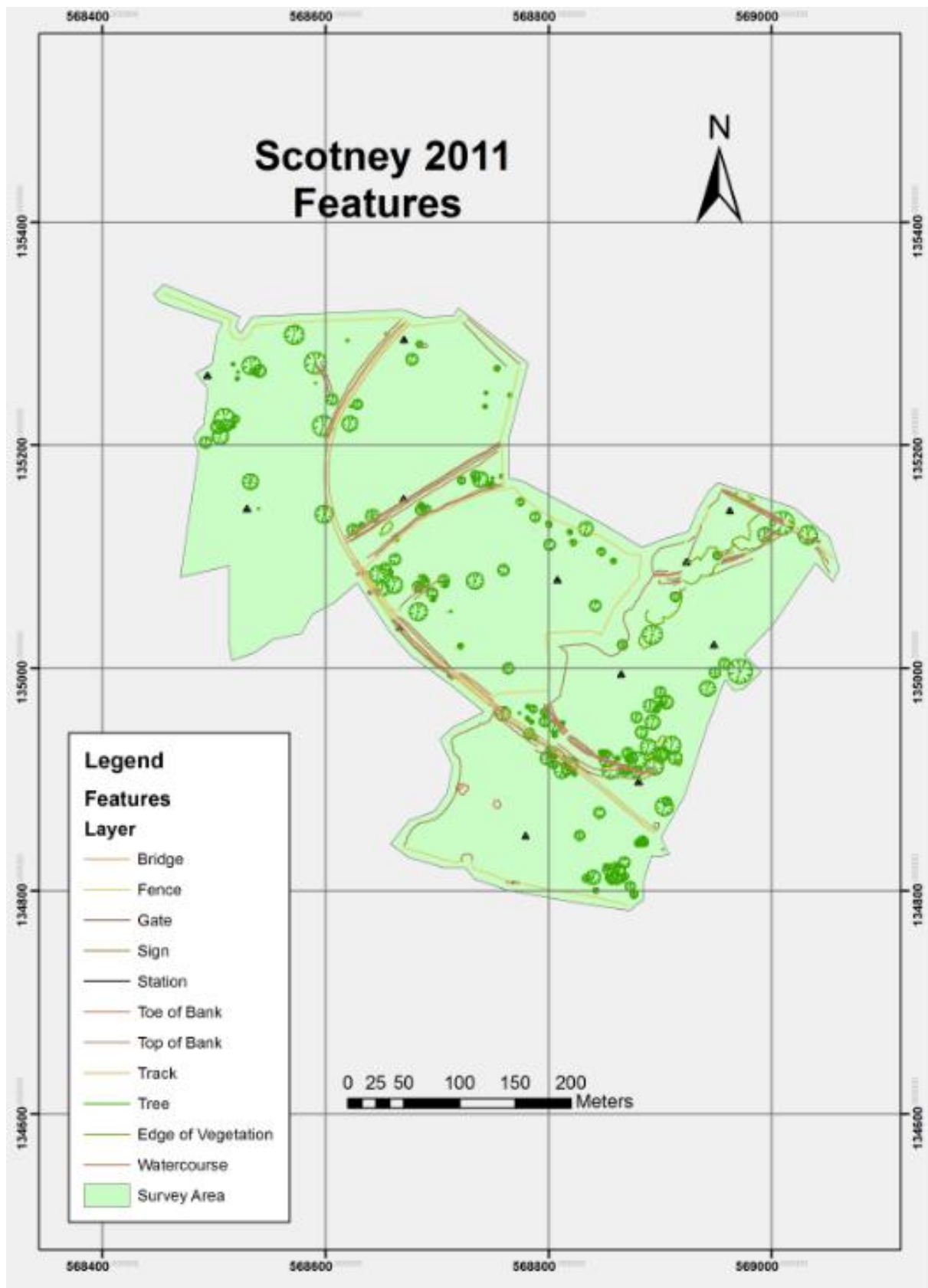


Figure 8 - Feature Map of Survey Area.

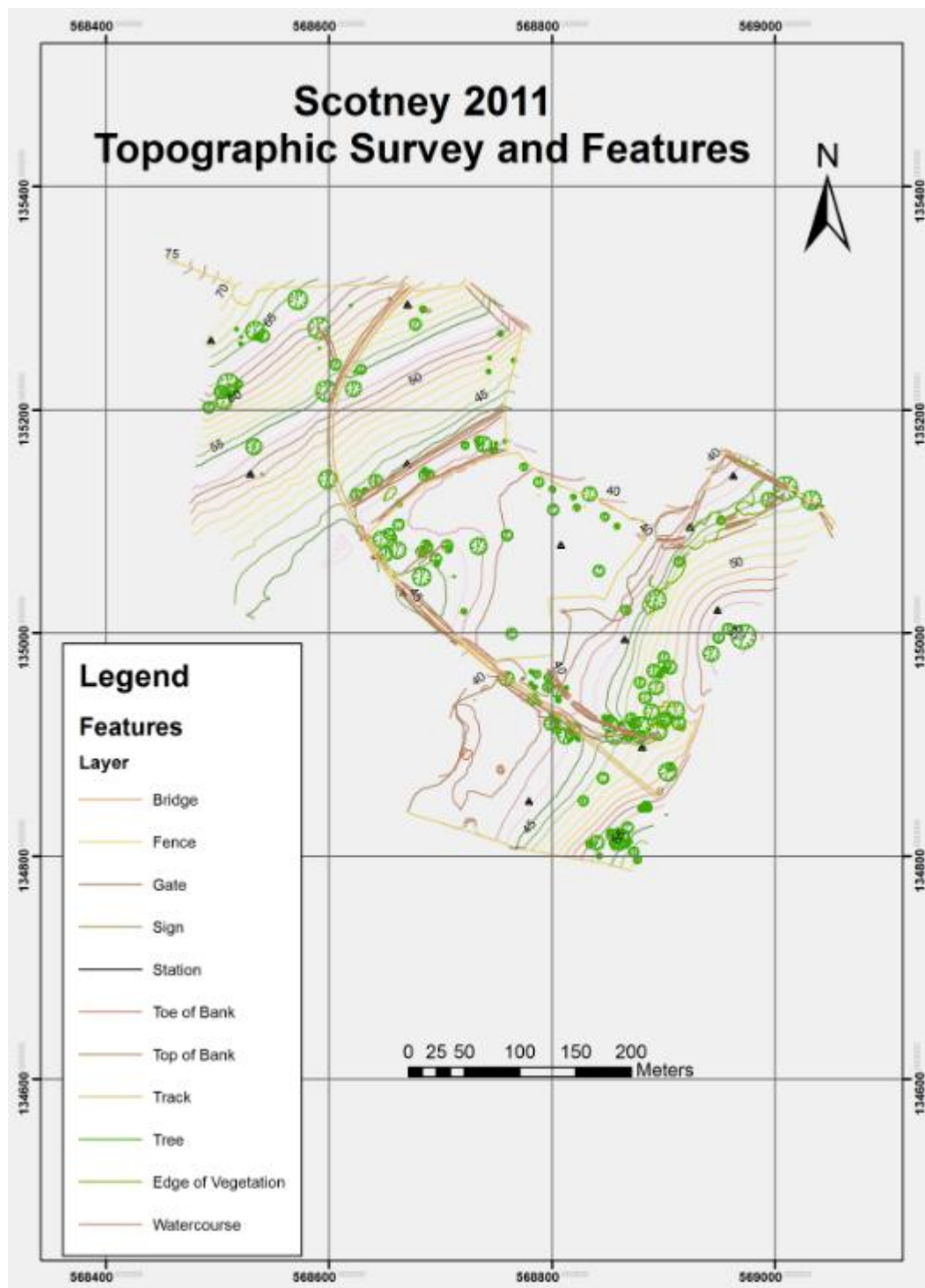


Figure 9 - Topography and Features of Survey Area.



### 3.2 Central Section

This area of the site is where the track leading up the hill to Scotney house begins its incline. This area is characterised by what can best be described as a small knoll. This knoll is cut by the track which leads to the house. This is an area of interest as it is the potential location of the mill. Resistivity was carried out over a 60m<sup>2</sup> area of this section to try and identify any subsurface features which may relate to the mill.

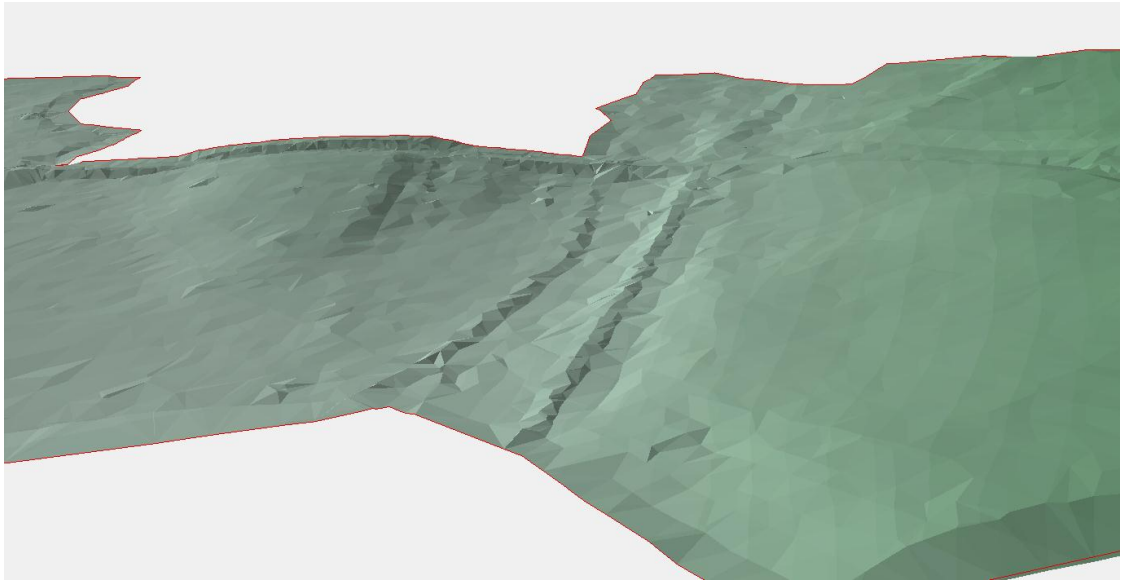


Figure 10 - Central section from Easterly perspective, light direction is set to south 161.6° at an angle of 17.5°.

The topography of the central section can be clearly demonstrated in figure 12, where using the nearest neighbour raster interpolation and contour values set to 0.25 metre intervals, the knoll is clearly depicted. The track is also visible as it dissects the knoll close to the survey boundary, labelled **[C:1]**.

Figure 13 demonstrates the features surrounding the track and *possible* mill, with associated topography. Label **[C:2]** indicates a bank top and toe running perpendicular to the track and cutting across the knoll. This feature is visible in the reconstruction figure 11, label **[C:4]**, and it may have some association with a potential mill. Two other bank features are present in the central section, found to the north of the knoll, these are clearly represented in figure 10. These bank features may be contemporary earth works, especially considering one runs parallel to a fence (Figure 13). However, this may not be the case, meaning there is room for further investigation here.

The resistivity conducted in this region is represented in figure 14, where the resistivity is superimposed over a spline raster interpolation. A spline raster interpolation was chosen for this figure as it demonstrates higher sensitivity towards changes in topography, and in some instances accentuates them. Label **[C:3]** demonstrates a linear feature of higher resistance, which can be associated to the bank indicated in label **[C:2]**, demonstrating an area of high resistance which fits into the confines of the bank top and toe. This may indicate some remnants of a possible mill, however this area of high resistance, and the rest of the data, does not demonstrate any coherent structures which can define the mill, or any other structure.

The central section is an interesting location for a number of reasons. Firstly it is likely that the track was cut into the knoll at some point, perhaps during the 1830's construction of Scotney house; it is very unlikely to be a natural feature. Secondly, the knolls location could relate to both; a possible Medieval processional route to Scotney Castle, and the more probable processional route to Scotney House, as these were common for both Medieval and 17<sup>th</sup>-18<sup>th</sup> century manor houses (Johnson, M. 2002 p.180).

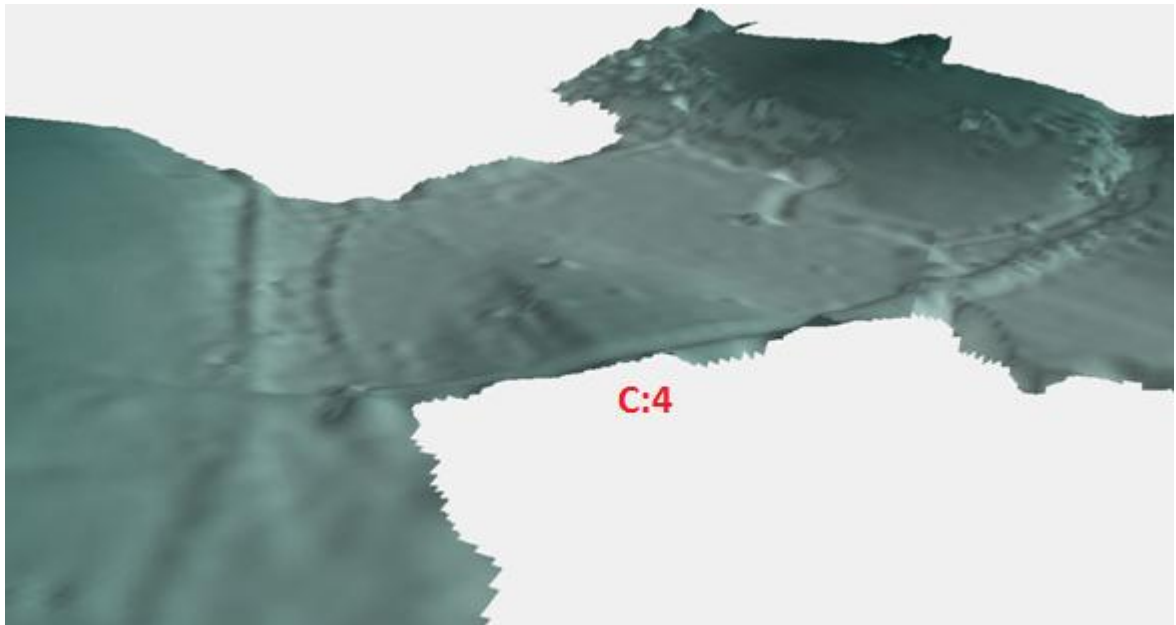
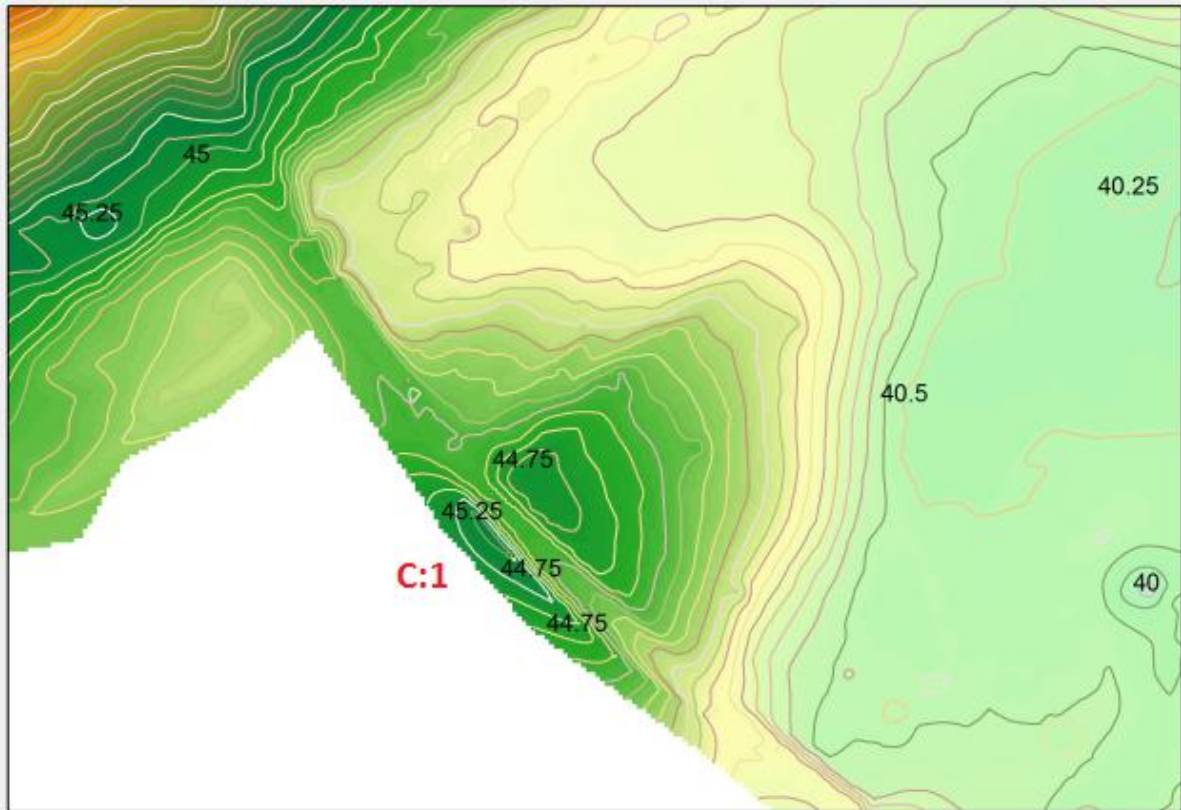


Figure 11 - Central section from Westerly perspective, light direction is set to south 161.6° at an angle of 17.5° - Scene using spline raster to accentuate features.

# Scotney 2011 Topography: Track Centre of Site



50 25 0 50 Meters

## Legend

### Heights (Raster)

#### Value



High : 75.5638

Low : 38.746

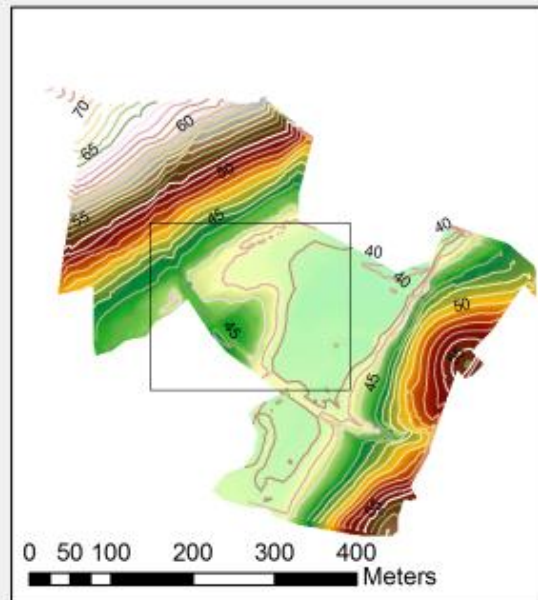
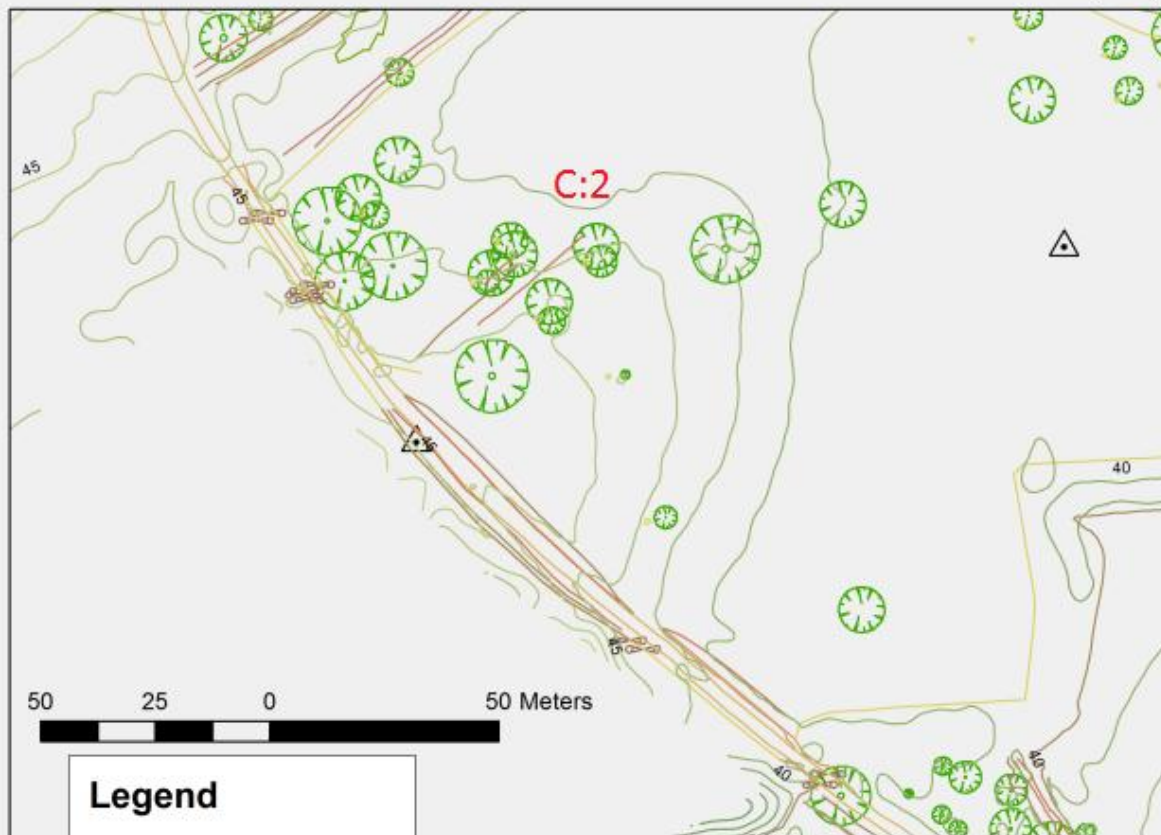


Figure 12 - Topography of central section.

# Scotney 2011

## Central Section: Track and Mill Features



### Legend

#### Features

#### Layer

- Bridge
- Fence
- Gate
- Sign
- Station
- Toe of Bank
- Top of Bank
- Track
- Tree
- Edge of Vegetation
- Watercourse

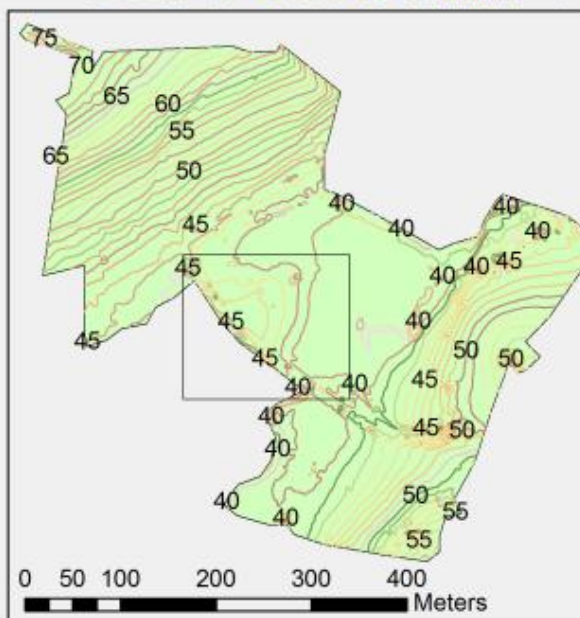
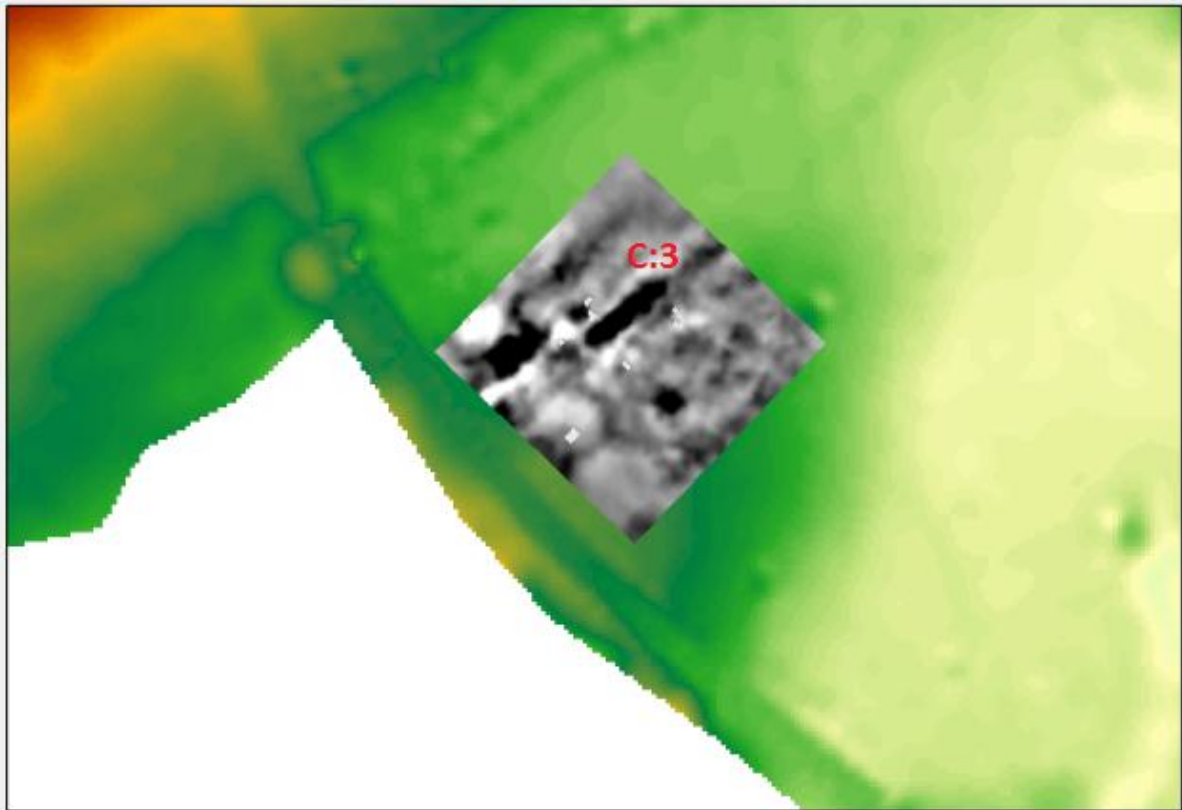


Figure 13 - Features of central section.



# Scotney 2011

## Central Section - Track & Mill



50 25 0 50 Meters

### Legend

#### Resistivity Mill Value



#### Heights (Spline) Value

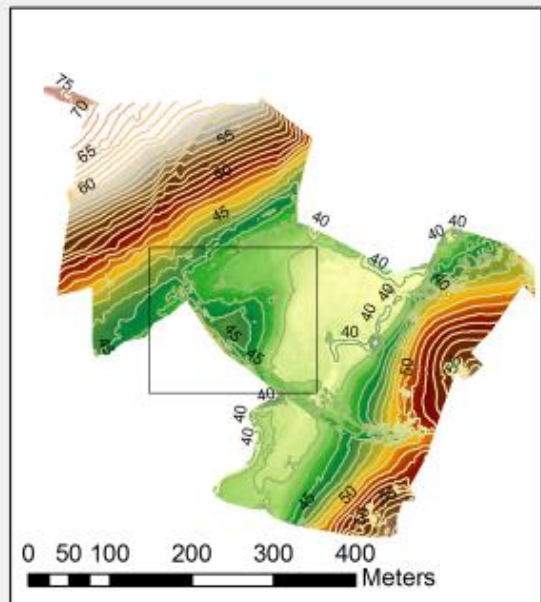


Figure 14 - Resistivity for central section.



### 3.3 South Section

The south section of the survey area, located at the southernmost point, is characterised by a steep incline into a copse. Interest was taken in this area due to a number of large stones found scattered there (some possibly *worked*). Subsequently, resistivity survey was conducted over a 60m<sup>2</sup> area of the south section. This area was of further interest as it is the location of the raised track that reaches the other side of the valley. There is also a small stream and bridge to the north side of the track, where some large stones were also found, however, no resistivity took place in this area.

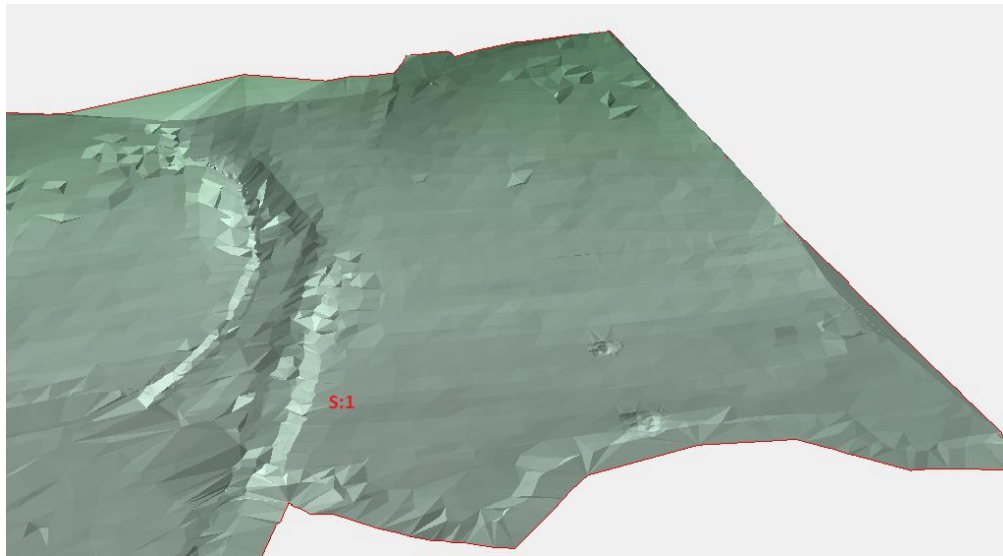


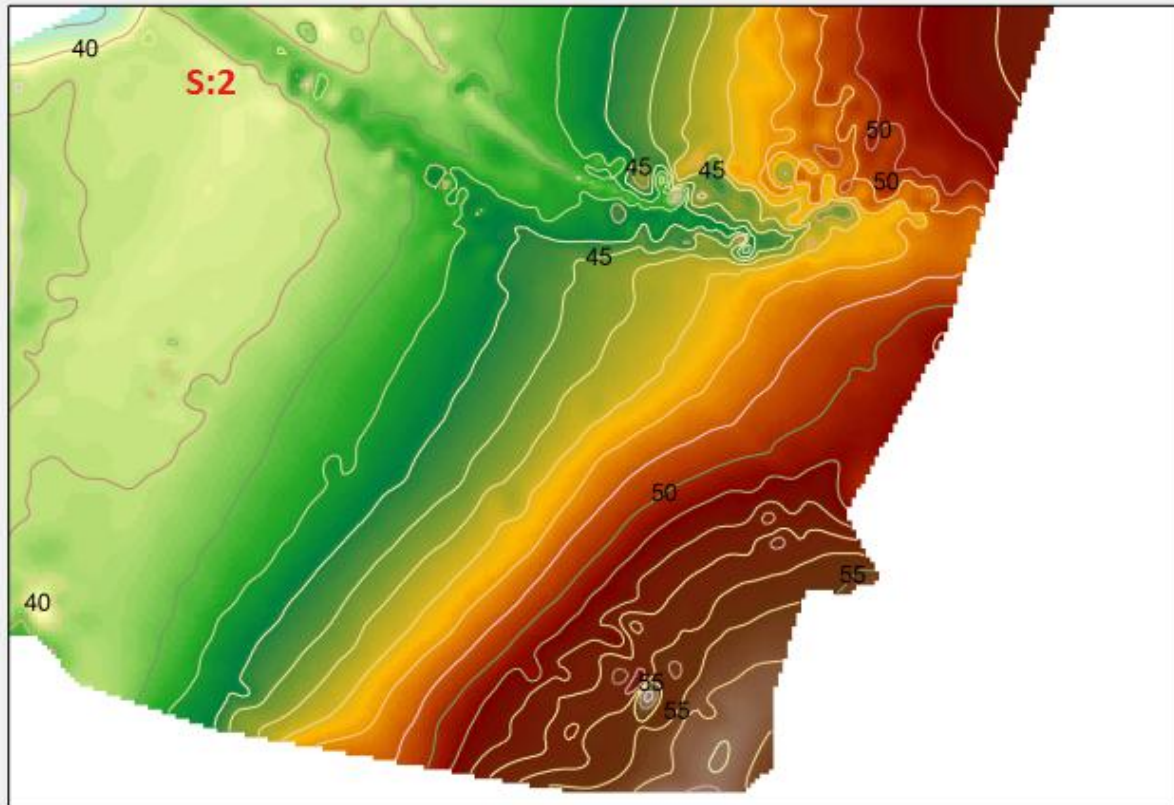
Figure 15 - South section from a north-westerly perspective, light direction from 225° west, light angle 17.5°. S:1 indicating position of raised track.

The topography of the south section is represented in figure 16; the contours are placed at 1 metre intervals and are derived from the spline raster onto which they are superimposed. Figure 16 clearly demonstrates a steep incline to the edge of the survey area, it also shows the position of the raised track, labelled [S:2], in relation to the steep incline and the copse.

Figure 17 demonstrates the features present in the south section of the survey area. The label [S:6] indicates the copse at the top of the incline, where [S:5] indicates the location of a ditch which may also be a stream at certain times of the year. The label [S:5] also indicates the position of an earth bridge, where a number of large stones were found, no resistivity took place here, so this could be an area for further work.

The resistivity for the copse is represented in figure 18, the label [S:3] indicates an area of high resistance where there could possibly be some stones, similar to those on the surface, but not much more, as no coherent structure is represented in the data. The density of trees in this location (Figure 17 [S:6]), may have an impact on the resistance measured, as the subsurface root material of trees would present a higher resistance, they also suck moisture from the soils, lowering the resistance further.

# Scotney 2011 Topography: South Section Copse



50 25 0 50 Meters



## Legend

### Heights (Spline)

#### Value



High : 91.0774

Low : 36.4407

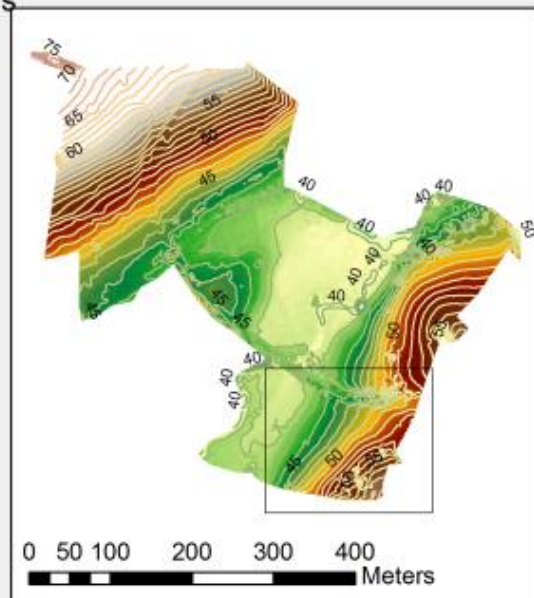
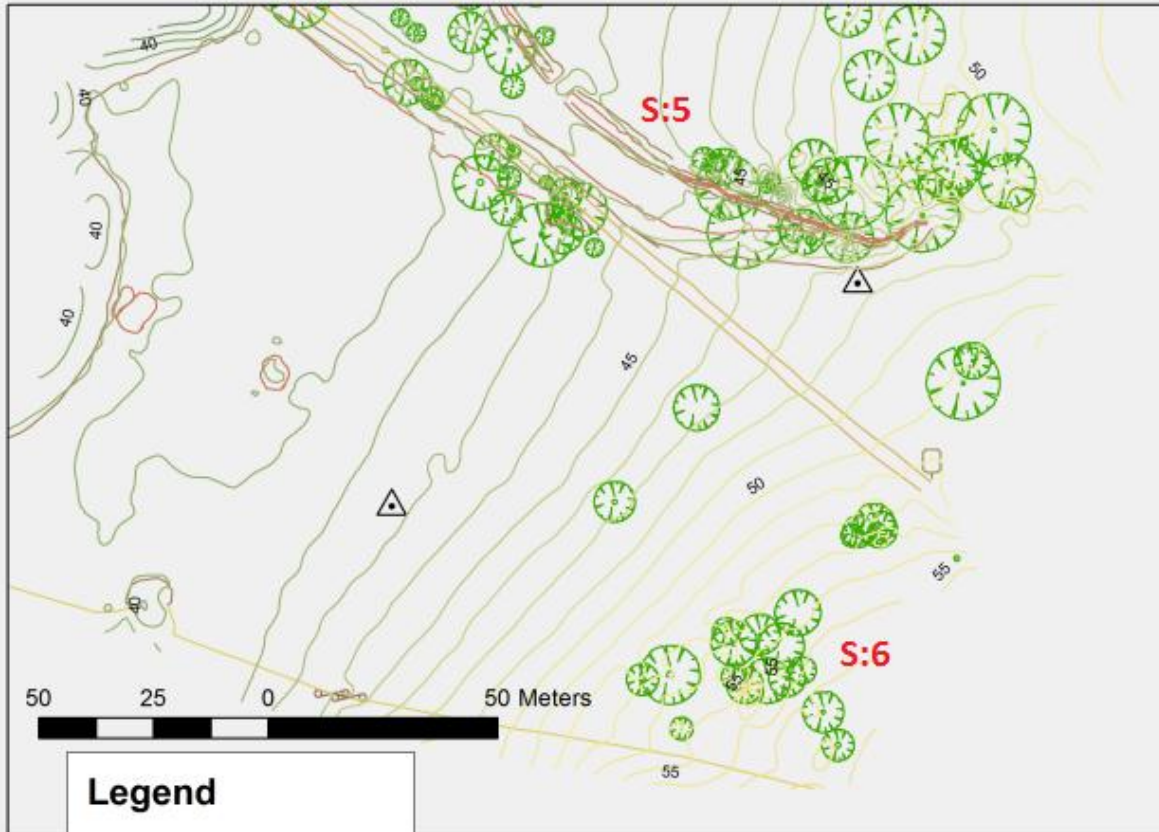


Figure 16 - Topography of south section.

# Scotney 2011 South Section: Copse Features



## Legend

### Features

### Layer

- Bridge
- Fence
- Gate
- Sign
- Station
- Toe of Bank
- Top of Bank
- Track
- Tree
- Edge of Vegetation
- Watercourse

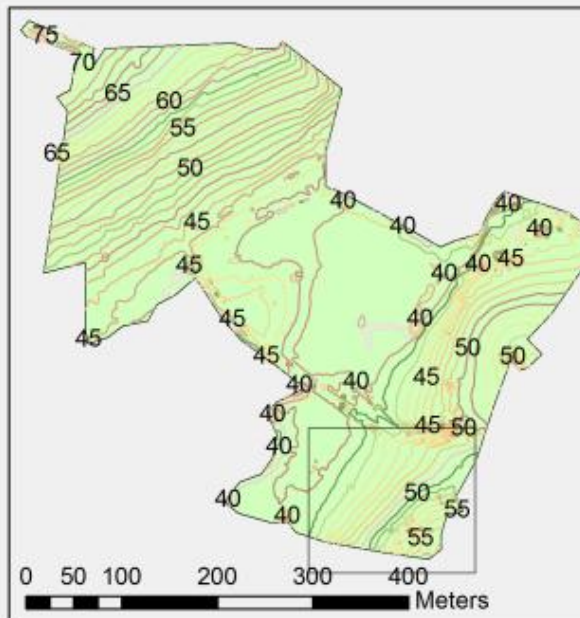
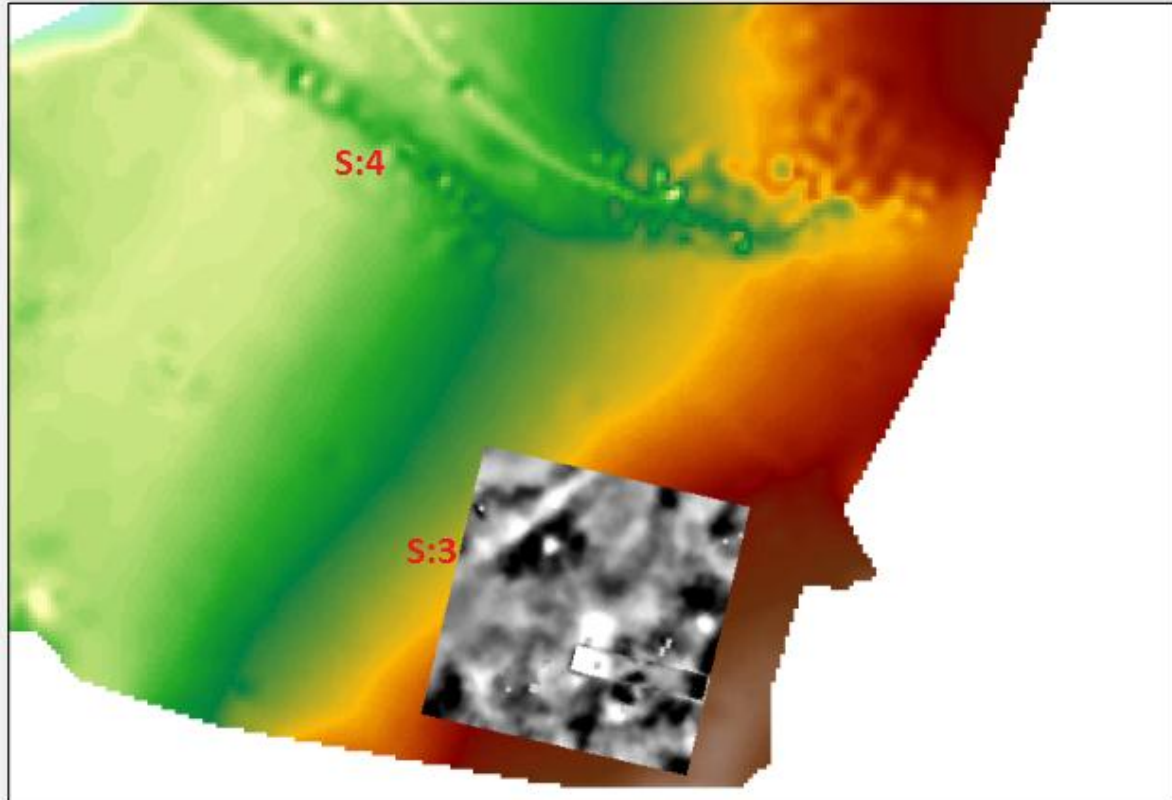


Figure 17 - Features of south section.



## Scotney 2011 South Section Copse



50 25 0 50 Meters



### Legend

#### Resistivity Copse Value



#### Heights (Spline) Value

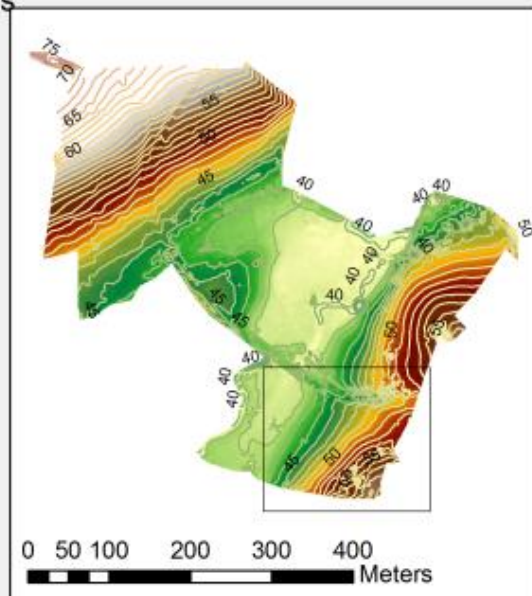


Figure 18 - Resistivity of south section.

### 3.4 East Section

The east section of the site was of interest due to the presence of a bank and ditch positioned on the hill facing the south side of the castle. The bank and ditch was surrounded in areas by thick vegetation and was therefore hard to access. The nature of the vegetation limited how much of the bank and ditch could be recorded, however, enough data was collected for it to be reconstructed to a certain extent (Figure 19).

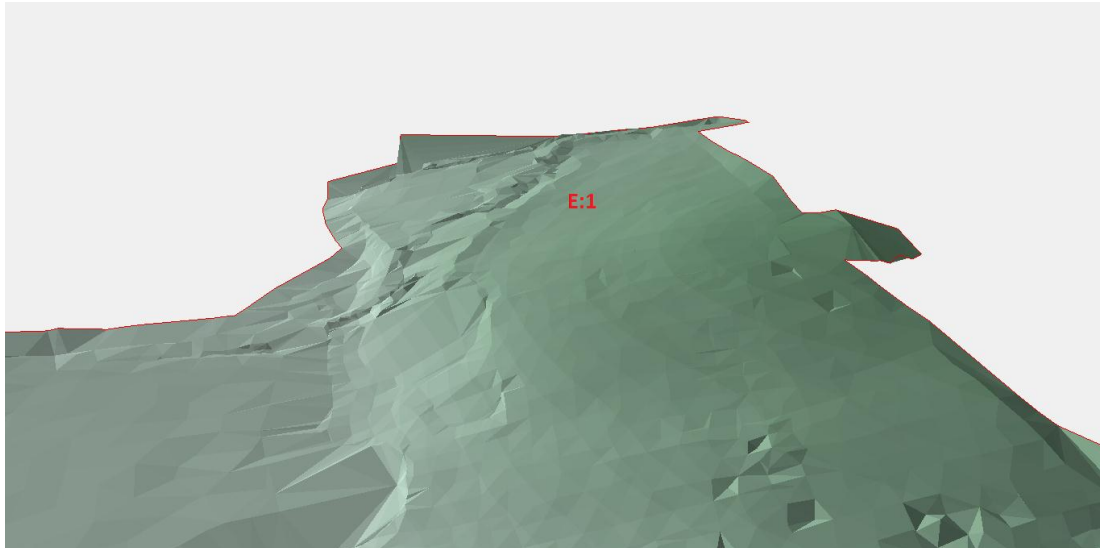


Figure 19 - East section from a westerly perspective, light direction from 350.8° west, light angle 17.5°. Label E:1 indicates the bank and ditch.

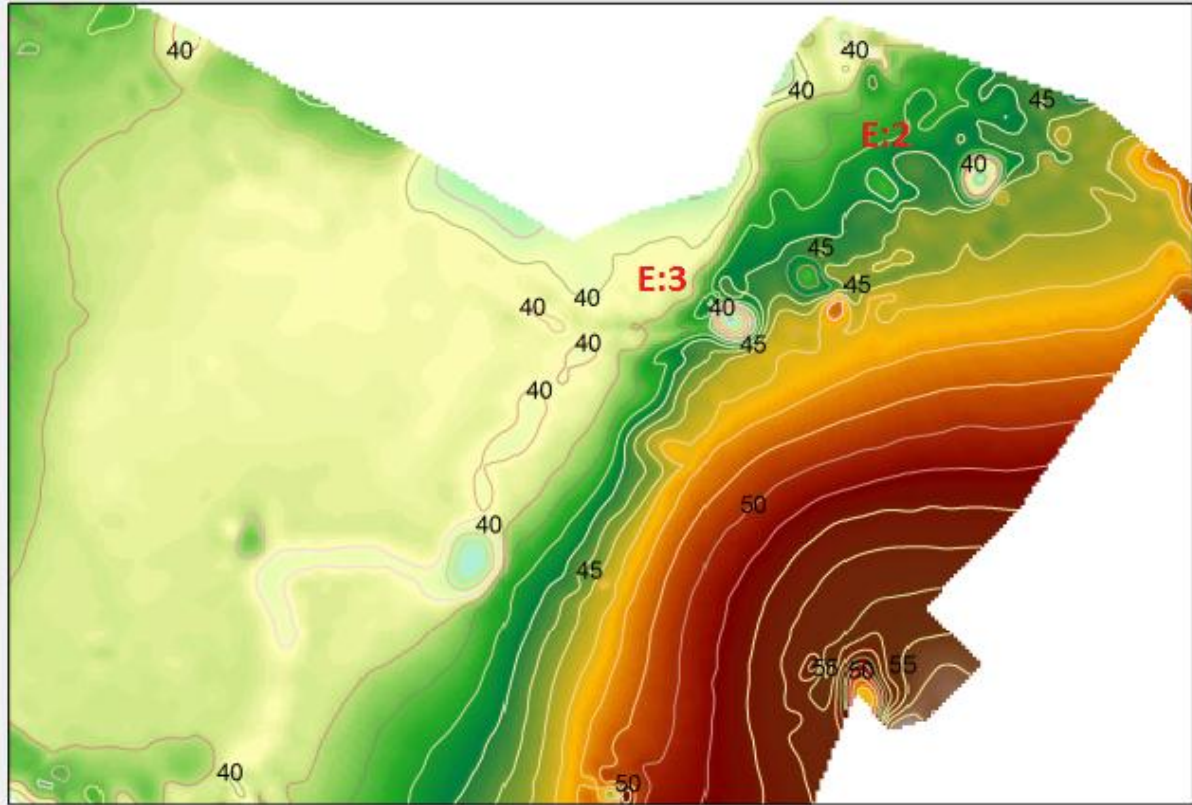
The topography of the east section is represented in figures 20 and 21. Figure 20 shows contours derived from a spline raster and then superimposed over that spline raster. The spline raster and contours for this section were chosen as they highlight the difference in elevation effectively. Labels [E:2] and [E:3] indicate locations where there is up to a 5 metre difference in height over a short distance. A slightly more conservative representation of the topography for this section is demonstrated in figure 21, though it still shows there to be significant changes in elevations over a short distance. The contours for this representation are derived from a nearest neighbour raster and are set to 0.5 metre intervals.

Figure 21 also represents the features present in the east section, with the label [E:4] indicating the location of the bank and ditch. Figure 21 also demonstrates how vegetated the area was, with large portions of the area marked out as being the edge of vegetation, and the top and toe of slope (bank and ditch) only occupying a small area. It is almost certain that the bank and ditch continues through the vegetation to some extent.



# Scotney 2011

## Topography: East Section - Bank and Ditch



50 25 0 50 Meters



### Legend

### Heights (Spline)

### Value

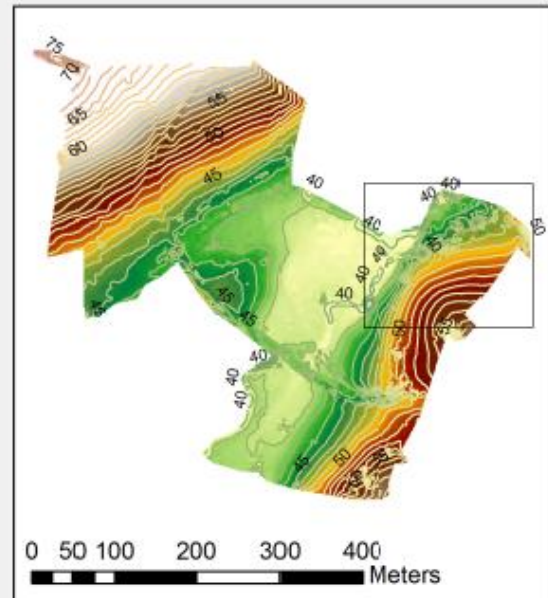
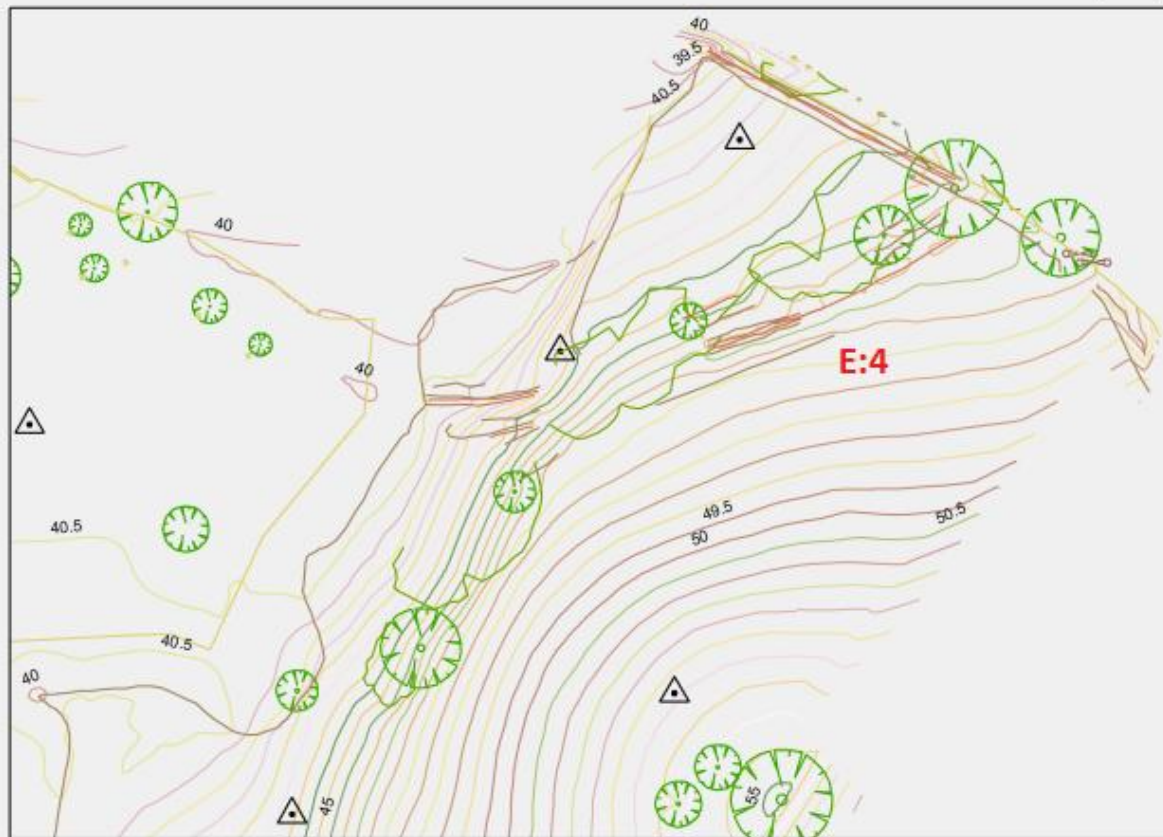


Figure 20 - Topography of east section.

# Scotney 2011

## East Section: Bank and Ditch Features



### Legend

#### Features

#### Layer

- Bridge
- Fence
- Gate
- Sign
- Station
- Toe of Bank
- Top of Bank
- Track
- Tree
- Edge of Vegetation
- Watercourse

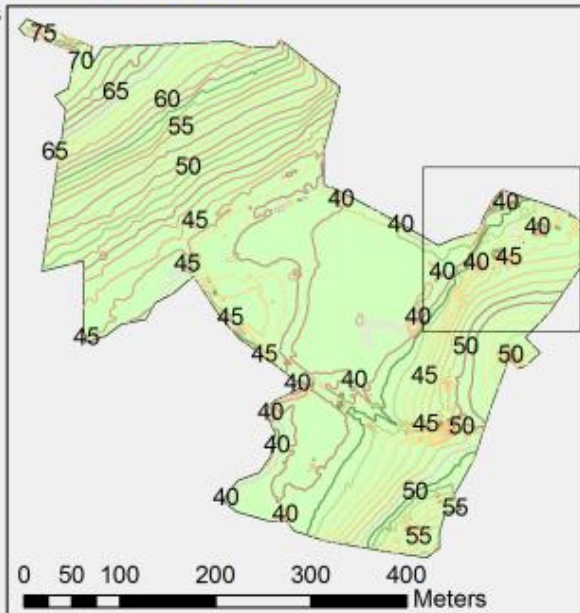


Figure 21 - Features of east section.

## 4 Conclusion

The work carried out at Scotney Castle has been successful in producing a topographical survey of 1.6km<sup>2</sup> of the land surrounding the castle. The topography has allowed for the identification of areas of archaeological potential, most notably the bank running across the knoll in the central section and the bank and ditch present in the east section. The topography of the south section demonstrates an undulating landscape in the copse, where certain large stones were present. The 2.5D reconstruction of the survey area provides a clear representation of the raised track, which runs south to north in an arc across the site. This track may have been originally created when Scotney House began construction in the 1830's; since then it may have been added to and managed by owners of the estate, including the National Trust.

The geophysical survey of the possible mill site, in the central section, produced results that were inconclusive. Nevertheless, the resistivity results highlighted an area of higher resistance which aligned with the bank running across the knoll. The resistivity survey of the copse in the south section also proved inconclusive with no coherent features becoming apparent, however, higher areas of resistivity present could indicate the location of more large stones, similar to those found on the surface in the copse.

### 4.1 Recommendations for further work

Proceeding with further resistivity over the knoll in the central section would be a good starting point in trying to deduce whether a mill existed in that location. If possible, the use of test pits would help establish if the higher levels of resistivity associated with the bank is archaeology, or if it is a geological feature.

At the north of the south section a ditch feature and *earthen* bridge was present (Figure 17 [S:5]) Resistivity here may indicate the origin of loose stone found around the 'earth' bridge.

The bank and ditch present in the east section and the surrounding area could be further investigated by implementing a geophysical survey in that area. This may highlight any subsurface features associated with the bank and ditch, it may also identify any other features surrounding the bank and ditch.

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<http://ads.ahds.ac.uk/catalogue/search/fr.cfm?rcn=NTSMR-MNA127999>

accessed 09/03/2011

The National Trust. Scotney Castle, at;

<http://www.nationaltrust.org.uk/main/w-vh/w-visits/w-findaplace/w-scotneycastlelegarden.htm>

accessed 12/03/2011

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Digimap

<http://digimap.edina.ac.uk>

accessed 07/03/2011

British Geological Survey

[http://www.bgs.ac.uk/education/geology\\_of\\_britain/home.html](http://www.bgs.ac.uk/education/geology_of_britain/home.html)

accessed 07/03/2011