



Geophysical Survey Report No. 16

Inishloughlin Fort

Co. Antrim

March 2008

Ronan McHugh

Sapphire Mussen

1.0 Site Specific Information

Site Name: Inisloughlin Fort

Townland: Inisloughlin

SMR No (if applicable): ANT 067:014

State Care Scheduled Other [delete as applicable]

Grid Ref: J 1803 6058

County: Antrim

Planning Ref / No.: Not applicable

Dates of Survey: 18th – 22nd February 2008

Surveyor(s) Present: Ronan McHugh and Sapphire Mussen, Centre for Archaeological Fieldwork, Queen's University Belfast.

Brief Summary:

Evaluative geophysical survey was undertaken on a site identified from geographic, cartographic and documentary evidence as the possible site of Inisloughlin Fort. The site was located on a prominent ridge, overlooking the River Lagan to the south. Earth resistance survey techniques were employed over an area of 16200 m².

The results of the survey revealed a number of discrete zones of both low and high resistance readings within the survey area. Superimposed on these zones were the remains of a number of anomalies which possibly represent features of potential archaeological significance. An angular high resistance anomaly on top of the ridge is broadly of the same dimensions as an antiquity reported at Inisloughlin in 1837 and might potentially be the remnants of this site. A linear, low resistance anomaly which runs through the high resistance anomaly might represent an entrance. This angular high resistance anomaly appeared to be interrupted by a regular, circular zone of high resistance at the top of the ridge which contained a number of regularly-shaped anomalies that are almost certainly artificial, possibly a result of gardening or landscaping. A low-resistance curvilinear anomaly at the base of the ridge was identified as a possible trench or ditch.

The superimposition of zones and anomalies of contrasting resistance levels on a more stable background potentially suggests successive episodes of modification of the site, and this is consistent with the known history of Inisloughlin Fort. An outline excavation strategy is presented on foot of the survey results to investigate the most significant anomalies detected.

Size of area surveyed: 16200 m²

Weather conditions: Inclement

Solid Geology: Mudstone and sandstone

Current Land Use: Agricultural

(e.g., farming / industrial)

Intended Land Use: Same

1.1 Survey specific information

Survey type:

Earth Resistance.

Instrumentation:

Geoscan RM 15 and MPX15 Multiplexer

Probe configuration: Twin probe

Probe spacing: 0.5 m

Grid size: 30 m x 30 m

Traverse interval: 1m

Sample Interval: 1m

Traverse Pattern: Zig-zag

Spatial Accuracy: Grids set out using TPS 705 series Total Station

2.0 Introduction

2.1 This summary report presents the results of a geophysical survey undertaken in February 2008 as part of a wider programme of research aiming to locate the site of Inisloughlin Fort, a Gaelic fortification of strategic importance in the late 16th/early 17th century. While there are no obvious remains of the fort visible today, some contemporary and historical sources provide valuable clues both to the geographical location and the form of the fort.

2.2 Richard Bartlett produced a map of the capture of the fort from Brian Mac Airt O'Neill in 1602, and a copy of this illustration is reproduced at Figure 1 below. A written description dating to the early 17th century by the commentator Fynes Moryson mentioned a number of aspects of the fort that were shown by Bartlett (Moryson 19087-08, 195), so there is considerable corroboration between both sources. A detailed discussion of the contemporary sources is given in CAF Geophysical Report No. 14 (McHugh 2007) and is not repeated here. However, it is clear that Inisloughlin was a formidable site, defended by an earthen rampart, fortified by bulwarks and surrounded by two broad ditches. The surrounding landscape was reportedly characterised by thick tree cover and a "great bogge" (Moryson 19087-08, 195).

2.3 After the fall of Inisloughlin, the fort was granted to the English settler, Faulkes Conway, who intended to build a house there (O'Lavery 1880, 279). Little is known of this period at Inisloughlin but the site was reportedly levelled in 1803 (*ibid.*) and, by 1837, only the ruin of an antiquity survived. It was described in the Ordnance Survey (OS) Memoirs for the parish as being 40 yards square with corner bastions, with only the south-east bastion and traces of the north-east surviving.

2.4 In 2007 the site recorded in the Northern Ireland Sites and Monuments Record (NISMR) as the probable location of the fort (NISMR ANT 067:029)

– “the Ramp Field” - was investigated using geophysical survey. The results of the 2007 survey were inconclusive (McHugh 2007) but, during reconnaissance carried out in conjunction with the 2007 survey a second location was identified as being a likely position for the fort. The NISMR records this as the site of an “enclosure” which is no longer visible (NISMR ANT 067:014). This alternative site (the current survey area) is topographically consistent with Bartlett’s map, in that it is located close to a bend in the River Lagan and it overlooks low lying, marshy land to the north-east (Fig. 2). Additionally the survey area was formerly in the ownership of a Mr. McAreavey, which is consistent with the ownership of the site as described in the OS Memoirs (Day and McWilliams 1993, 125).

2.5 The 2008 geophysical survey was undertaken on the survey area to test the possibility that this field was formerly the site of Inisloughlin Fort and to identify areas which might be ground-truthed by excavation.



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 <p>Centre for Archaeological Fieldwork</p>	<p>PROJECT Inisloughlin, 2008</p>
 <p>Environment Heritage Service</p>	<p>TITLE: Richard Bartlett's Map, 1602.</p>
<p>FIGURE: 1</p>	

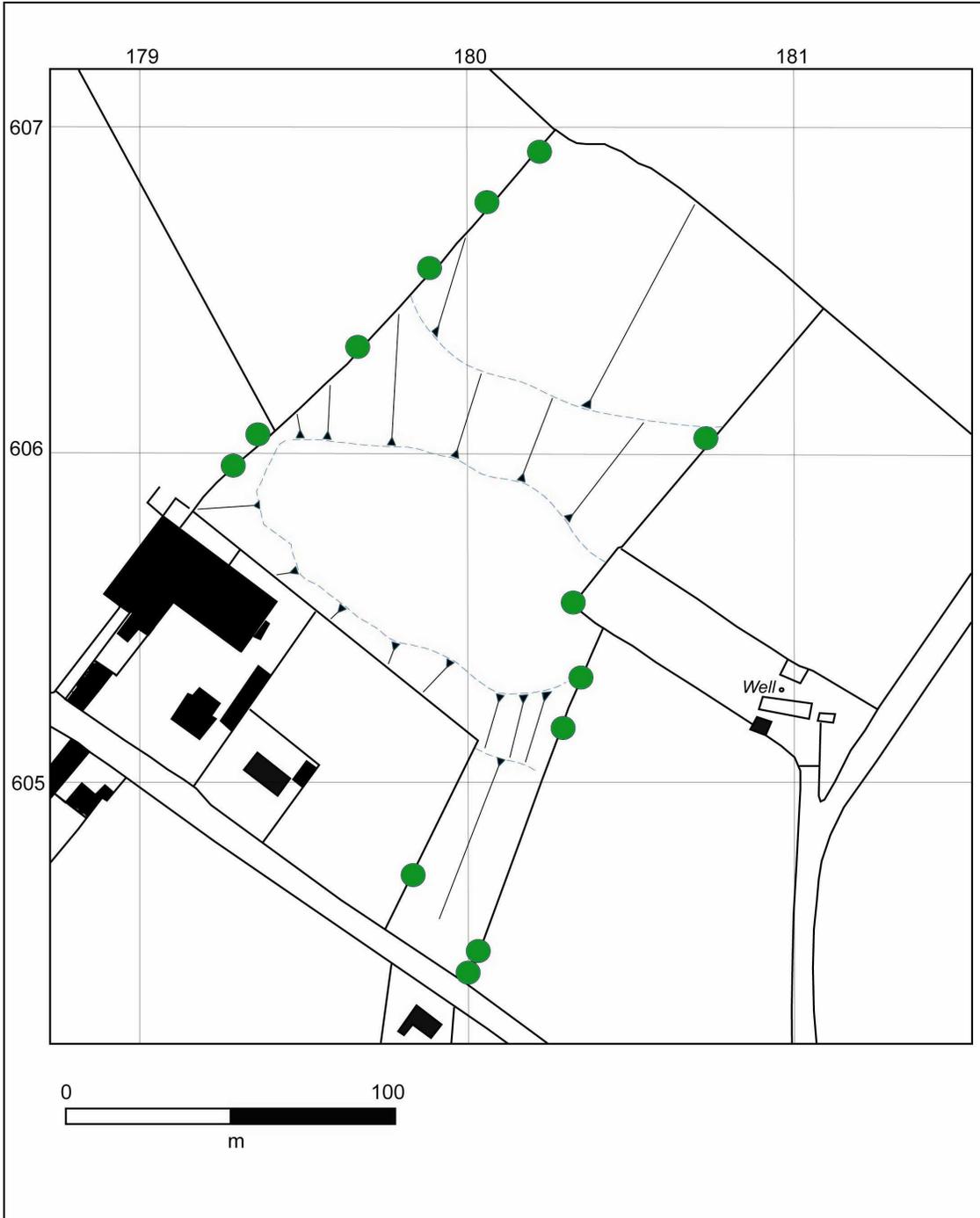
3.0 The Site

3.1 The survey was carried out in an angular field, approximately 2.0 km east of Moira village, in south-east Co. Antrim. It is located approximately 0.2 km east of the eastern edge of the Ramp Field, which the NISMR records as the likely site of Inisloughlin Fort, and overlooks pronounced bends in the River Lagan both to the south west and south-east (Fig. 2).

3.2 The field is accessed through a gateway at its southern end, which opens on to a gradually rising strip of grassy land approximately 20m wide. After approximately 100 m, this relatively narrow strip opens onto the sub-rectangular main expanse of the field. At this point, the gradual northwards rise levels off where it meets the summit of a pronounced north-west/south-east aligned ridge, which defines the topography of the survey area (Fig. 3). The summit of the ridge comprises a relatively level plateau approximately 60m wide (north-east/south-west) which has a slightly domed appearance towards its north-western edge. From the north-eastern edge of the summit, the topography falls away north-north-eastwards in an appreciable slope for approximately 50 m after which the gradient levels off and merges with flatter terrain to the north and north-east.

3.3 The main expanse of the field has maximum dimensions of approximately 140 m (north-west/south-east) by 175 m, although it is irregular in shape. It is bounded on the south-west by a small farm holding containing agricultural buildings, on the north-west by a recently ploughed field, and on the east by a newly constructed farm house and surrounding fields. On all three of these sides, visible lynchets have formed which have resulted in the survey area being slightly more elevated than these neighbouring properties. Along the north-west and eastern boundaries there are a number of mature trees visible at irregular intervals around the field. The north-east boundary of the field is defined by a low bank, immediately beyond which is a narrow stream or *sheugh*.

3.4 There are no visible indications of archaeological material in the survey area. The field is currently cut for silage and, during the survey in late February the grass was short. The underfoot conditions varied considerably over the survey area. The low-lying area at the north-east of the survey area was boggy and retained areas of standing water. In general, the slopes of the ridge were slightly sodden, while much of the plateau at the summit of the ridge consists of shallow, stony soil which remained appreciably drier than the remainder of the field.



● Surveyed mature trees

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TITLE: Survey area illustrating broad topographical detail.
FIGURE: 3

4.0 Cartographic Evidence

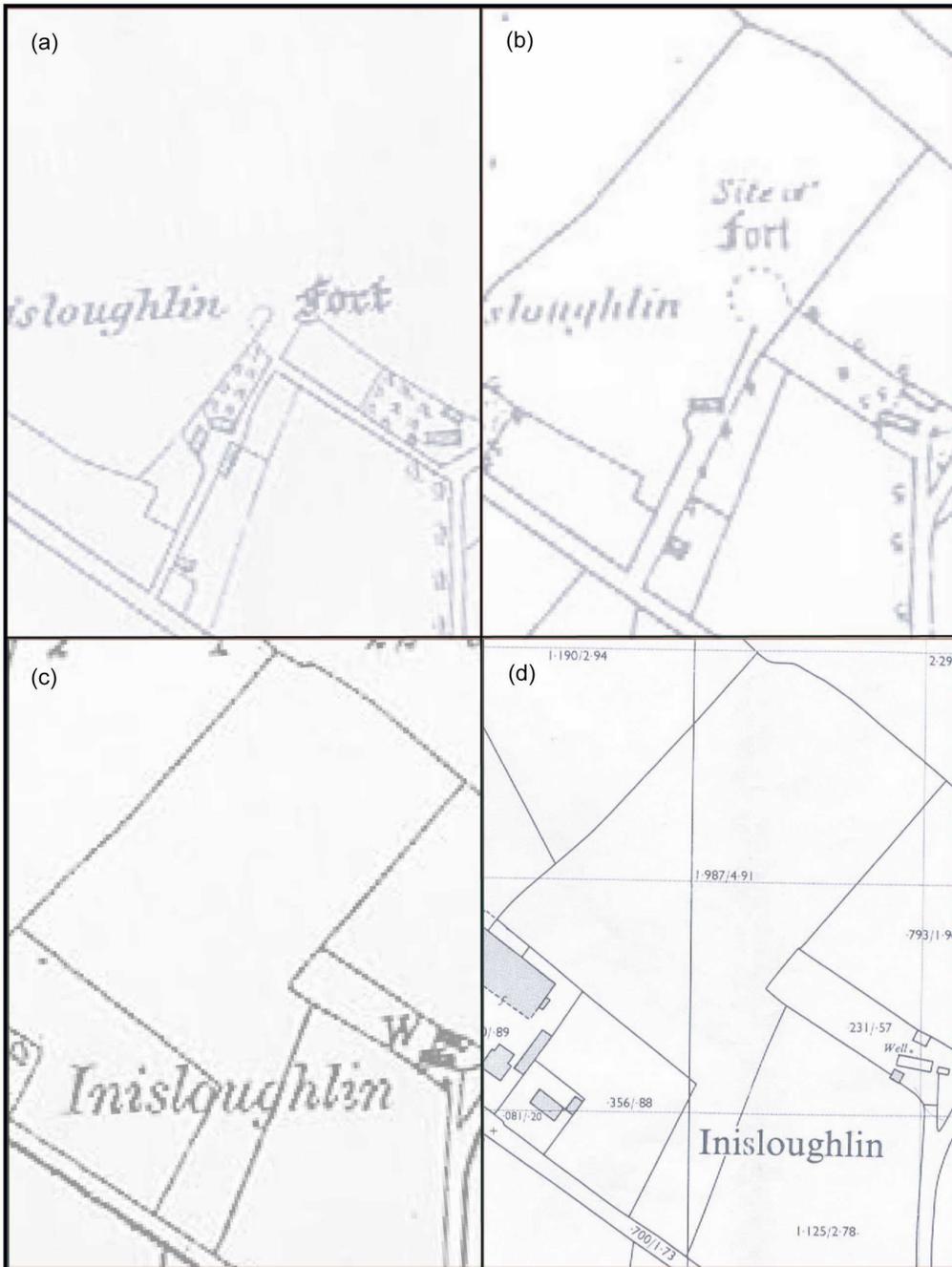
4.1 The survey area was depicted on the First Edition OS 6" map dating to 1833 (Fig. 4a) as a largely open area, although field boundaries were not always included in the early maps. The narrow strip at the south-east of the field was, at this stage, the site of a narrow lane coinciding with the western edge of the strip today, and three buildings arranged around a sub-circular yard were shown at the point where the field broadens out at the top of the ridge. Immediately to the north of this cluster of buildings was an enclosed sub-rectangular area containing two parallel lines of trees, probably representing an orchard. To the north of this tree plantation, a semicircular antiquity was shown marked as a "fort".

4.2 The 1858 edition of the OS 6" map (Fig. 4b) depicted a laneway running from the road upslope to the top of the ridge, where it opened out onto a circular yard. A single building was shown at the north of the yard at this point. The fort was shown as an almost completely circular corner tower, with traces of a wall extending from both its southern and south-eastern edges. This representation of the fort is likely to be largely stylised; it portrays a more complete structure than is shown on the earlier map despite being marked only as the "site of a fort". In addition, the representation of the remains on this map appear to show a north-western corner tower, which is at variance with the account of the ruin from 1837 (see Section 2.3 above).

4.3 The modern field boundaries had begun to take shape by this time, with both the current north-western and north-eastern boundaries being in place. To the east and south-east, the neighbouring field had been subdivided while, to the south-west a house and garden had been constructed, although the boundary between this latter holding and the survey area was considerably to the south of the corresponding modern boundary. A number of mature trees were shown along the access

laneway but these do not correspond with the position of any of the trees visible on the site today.

4.4 The site was shown on the 1933 (Fig. 4c) map and 1978 Irish Grid map (Fig. 4d) in virtually the same condition as it appears today. The formal laneway has been removed from the narrow access strip and there are no buildings shown on the summit of the ridge. Recent developments in the neighbouring fields are not shown. There is no mention of an antiquity on any of these later maps, although a well is shown in the neighbouring property to the east of the survey area on both maps. The current owner of this latter plot indicated during the survey that there has been a freshwater well in this position since living memory.



 <p>Centre for Archaeological Fieldwork</p>	<p>PROJECT Inisloughlin, 2008</p>
 <p>Environment Heritage Service</p>	<p>TITLE: OS maps showing development of the survey area; (a)1833, (b)1858, (c)1933, (d)1978.</p> <p>FIGURE: 4</p>

5.0 The Survey

5.1 An earth resistance survey was carried out using a Geoscan RM15 meter and MPX15 multiplexer. A number of factors, including the relatively large survey area, the evaluative nature of the survey and the largely obstacle-free nature of the terrain, dictated that the most suitable and efficient methodology for this survey was a parallel twin-probe array utilising a traverse and sampling interval of 1m. The survey area was divided into a series of 30 m grids to facilitate the survey (Fig. 5).

5.2 The results of the resistance surveys are graphically presented in Figures 6 to 10. An interpretation of the results is given in tabular form in Table 1, which should be read in association with Figure 11, which contains a graphic illustration of the survey interpretation. A final illustration, Figure 12, presents a suggested excavation strategy drawing on the findings of the survey.



— Grid Lines



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TITLE:
Survey area showing
layout of grid lines

FIGURE: 5

Bibliography

Day, A and McWilliams, P. 1993. *Parishes of County Antrim VII, 1832-8*. Belfast.

McHugh, R. 2007. Inisloughlin Fort: Unpublished CAF Geophysical Report No. 14.

Moryson, F 1566-1630 (Published 1907-8) *An itinerary containing his ten yeeres travell : through the twelve dominions of Germany, Bohmerland, Sweitzerland, Netherland, Denmarke, Poland, Italy, Turkey, France, England, Scotland & Ireland*. Glasgow: J. Maclehose.

O'Laverty, J. 1880. *An Historical Account of the Diocese of Down and Connor*. Dublin.

Acknowledgement

We would like to thank the landowner, Mr James Swain, for permission to undertake the geophysical survey

TABLE 1: Description and Interpretation of survey results (To be read in conjunction with Figure 11)

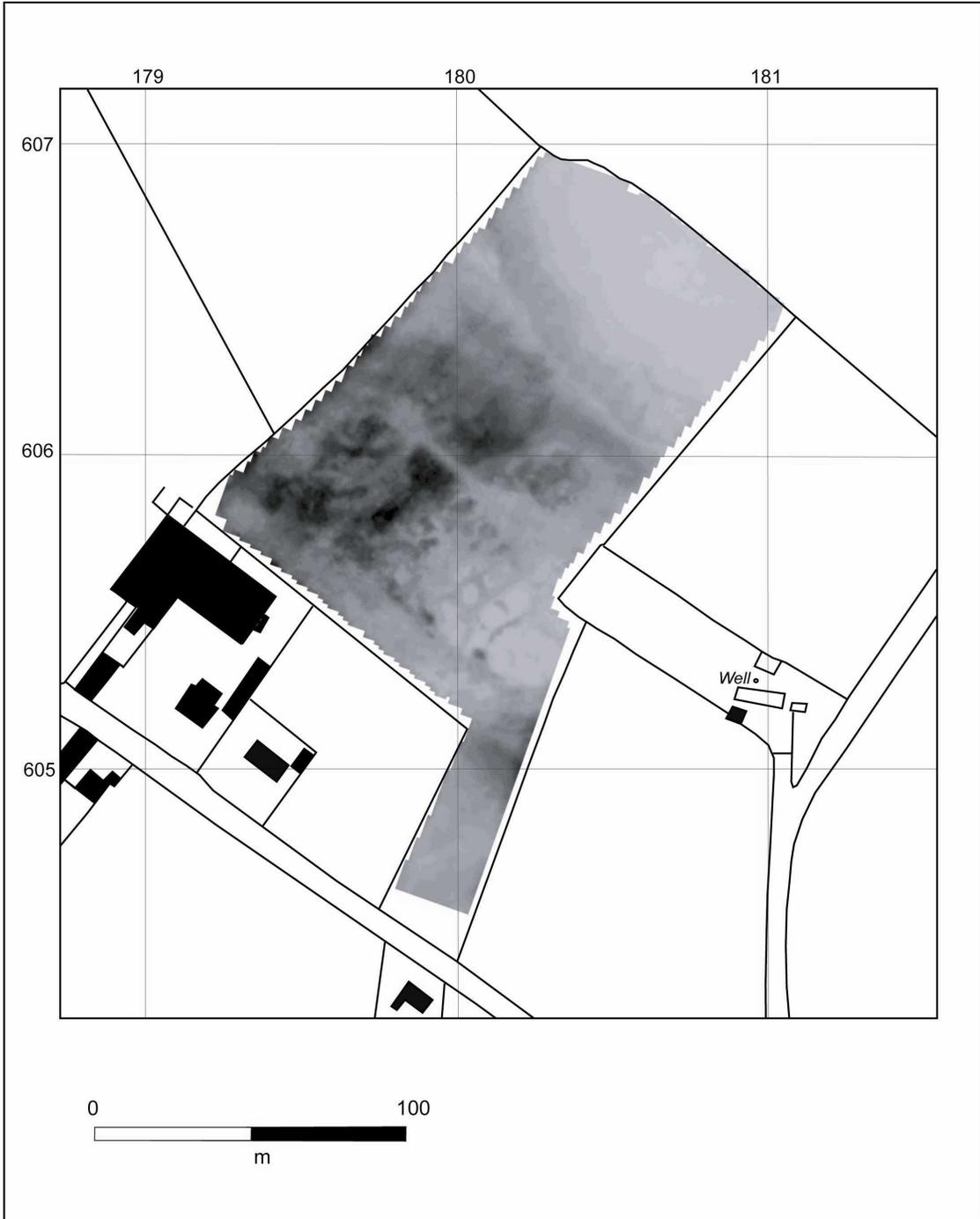
Anomaly	Description	Interpretation
r1	<p>Angular high resistance anomaly located on the ridge top. The anomaly is divided into two parts, r1a and r1b, for the purpose of this report. The anomaly is formed of two, broadly linear, “arms” which intersect at the south-east of the plateau in an almost regular right angle. The more clearly-defined of the component arms (r1a) is aligned south-west/north-east and extends for approximately 42 m from the corner before it is interrupted by a linear anomaly of extremely low resistance (r9). This low resistance anomaly has the effect of creating a gap approximately 6 m wide in the angular high resistance anomaly (r1a), with notably straight edges. The high resistance anomaly continues, on the same south-west/north-east alignment as before, from the north-east edge of the linear low resistance anomaly (r9) and extends for a further 18 m. Anomaly r1a is relatively linear in form and of uniform width (approximately 6 m) for the first 30 m from its south-eastern edge. After this point, it expands to form broader blocks on either side of the gap formed by the high resistance anomaly (r9).</p>	<p>Response suggests either the remnants of a masonry structure or bedrock beneath the thin soil cover. The definition and angular appearance of the anomaly suggest that it is likely to be an artificial feature.</p> <p>In the context of the known history of the site, the dimensions of the anomaly are not inconsistent with the 40-yard square structure reported in the OS Memoirs (Day and McWilliams 1993, 125). The same report indicated that the south-eastern corner of the structure survived, and this might be represented by the intersection of anomaly r1a and r1b.</p> <p>The two areas of high resistance in r1a, either side of the low resistance gap (r9) is not inconsistent with an entrance feature or gateway and it is reported that Conway’s structure incorporated a “Fayre Gate”</p>

	The second arm of the high resistance feature (r1b) extends north-west/south-east for at least 40 m. Immediately south-east of the corner, the dimensions and resolution of the feature are similar to those recorded in anomaly r1a, but thereafter it becomes less distinct and is masked by a circular zone of low resistance (r 8). Patches of high resistance along the south-east edge of this low resistance zone (r8) are visible for a further 30 m and might represent the continuation of the high resistance feature (r1b) represented by anomaly r1b, albeit in a less complete state of survival.	(O'Lavery 1880, 270).
r2	Scatter of amorphous high resistance anomalies on the top of the ridge.	Possibly remnants of collapsed masonry or else bedrock outcrops. Possibly related to anomaly r1.
r3	Zone of relatively high resistance coinciding with the position of the ridge.	Response to the underlying geology of the ridge.
r4	Crescent-shaped high resistance anomaly at south-east of survey area which has a maximum width of approximately 30 m.	Masonry remains or area of bedrock. Difficult to interpret because majority of the anomaly falls outside the survey area.
r5	Poorly defined curvilinear, high resistance anomaly extending from north-east edge of anomaly r1a before curving back south-eastwards on an approximately parallel alignment with r1b.	Poor definition hampers interpretation. Possible extension of the feature represented by anomaly r1, representing a third side to this feature, or else continuation of geological ridge (r3).
r6	Poorly defined, possibly semi-circular anomaly of relatively high resistance superimposed on a background of lower resistance. The anomaly is	Possible poorly surviving remains of a circular masonry structure or else geological response. Interpretation of

	ephemeral and dimensions are difficult to ascertain, but it has a possible diameter of approximately 30 m.	any kind is guarded; The anomaly is vague and might be part of geological makeup of the site. Location of this anomaly broadly corresponds with the antiquity shown on the early OS maps (See Fig. 4a and b).
r7	Vague semi-circular anomaly of similar strength and position to anomaly r6 – perhaps an extension of the same feature interrupted by low resistance anomaly (r9).	Possible poorly surviving remains of a circular masonry structure or else geological response.
r8	Large, sub-circular zone of low resistance with an approximate diameter of 80 m, located on the summit of the ridge plateau.	<p>This zone is discretely bordered on two sides by the angular high resistance anomaly (r1) and on the third side by the indistinct curvilinear anomaly (r5). It exhibits significantly lower resistance levels to the areas beyond these anomalies. This creates the impression that the low resistance zone (r8) represents activity that has been confined to this area, possibly deliberately, and might represent landscaping or gardening within an enclosed area.</p> <p>The discrete location of this zone, its regular shape, the contrast between the low resistance in this area and the higher resistance in neighbouring areas and the presence of at least two obviously artificial</p>

		anomalies within the zone (r9 and r10), suggest that this anomaly is at least partly due to human activity, although the low resistance values might also be partly attributable to a poorly draining natural hollow on the relatively flat topography of the top of the ridge.
r9	Linear anomaly approximately 35 m in length, of extremely low resistance. The anomaly is aligned north-west/south-east and extends from a sub-rectangular spread in the centre of the probably geological high resistance area (r 3). It appears to bisect the high resistance anomaly r1a before continuing into the heart of the sub-circular, low resistance zone (r8) where it broadens out before dissipating.	Probable artificial feature, possibly the base of a sunken pathway or a ditch of some form. Possibly related to the high resistance anomaly r1a.
r10	Relatively regular arrangement of low resistance anomalies at the south of the ridge-top plateau.	The grid-like arrangement suggests that these anomalies are relics of deliberate organisation of the field into plots, possibly for agricultural or landscaping purposes. This anomaly coincides with the tree plantation shown on the 1833 map, and might be the remains of this feature.
r11	Curvilinear low resistance anomaly running across the breadth of the survey area and extending beyond the north-west and east edges of the survey area. It is located immediately to the north of the base of the north-	Possibly represents a natural hollow which retains water draining from the hill slope. However, it does not appear to closely follow the natural topography, is cut

	east facing slope of the ridge.	through an area of notably higher resistance and is of relatively uniform width along its length. This is possibly the remains of an artificial ditch or trench.
r12	Zone of extremely low resistance at north of survey area.	Low-lying area of poorly draining ground characterised by areas of standing water.
r13	Linear north-east/south-west aligned low resistance anomaly.	Possible return of curvilinear anomaly r11, or else drain associated with neighbouring property to east of survey area.
r14	Linear north-north-east/south-west trends.	Residue of cultivation in the survey area.
r15	Curvilinear anomaly or loop superimposed on south-east edge of low resistance anomaly r8.	Relatively low resistance response suggests this is not a masonry or stone feature. Possibly an earthwork or else a geological response.



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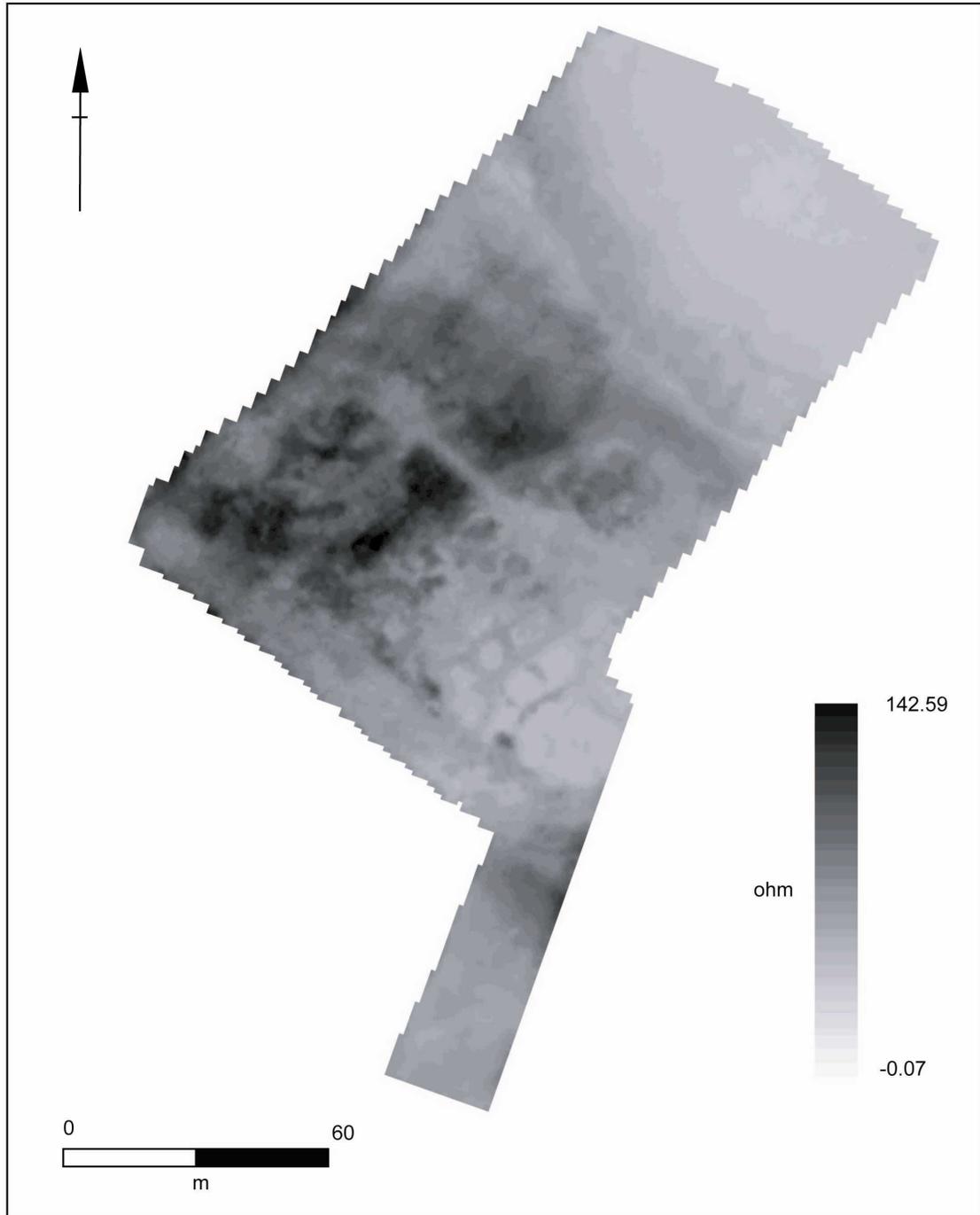
Inisloughlin, 2008

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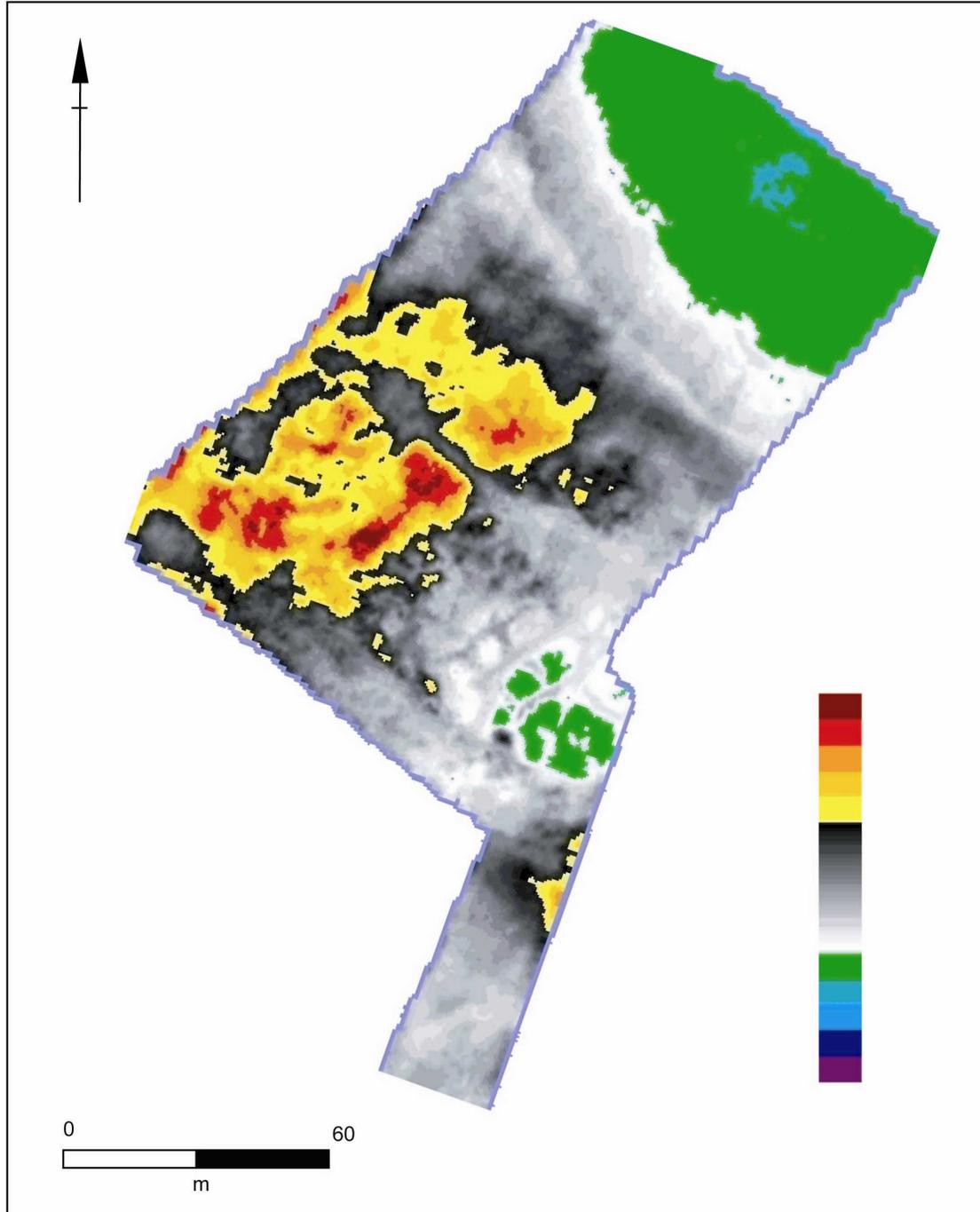
Survey data
superimposed on
1978 Irish Grid Map

FIGURE:

6



Shade plot of raw resistance data (processed for edge matching)		PROJECT Inisloughlin, 2008
		TITLE: Raw survey data
		FIGURE: 7



Colour scale plot, highlighting broad zones of contrasting resistance levels across the survey area.



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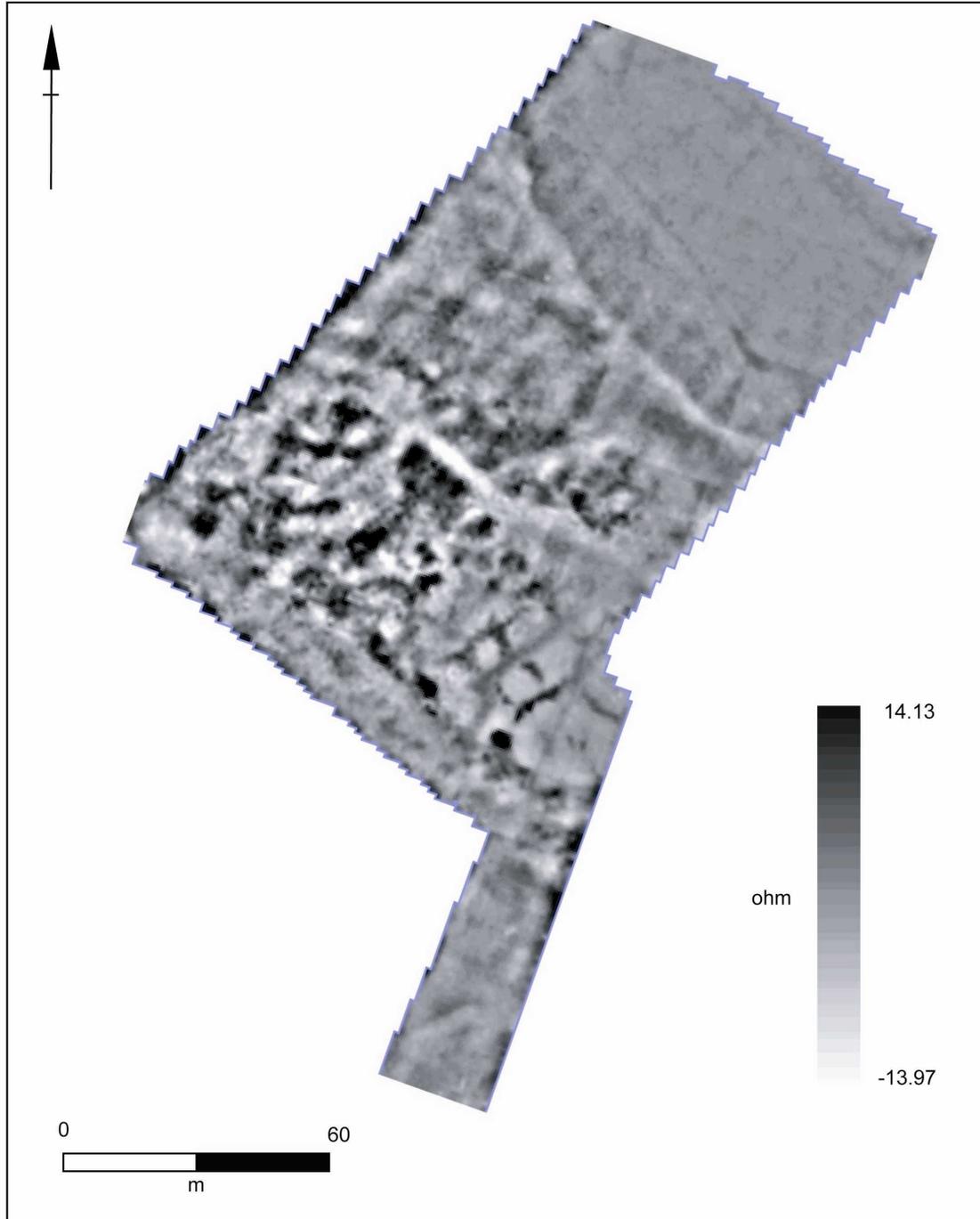


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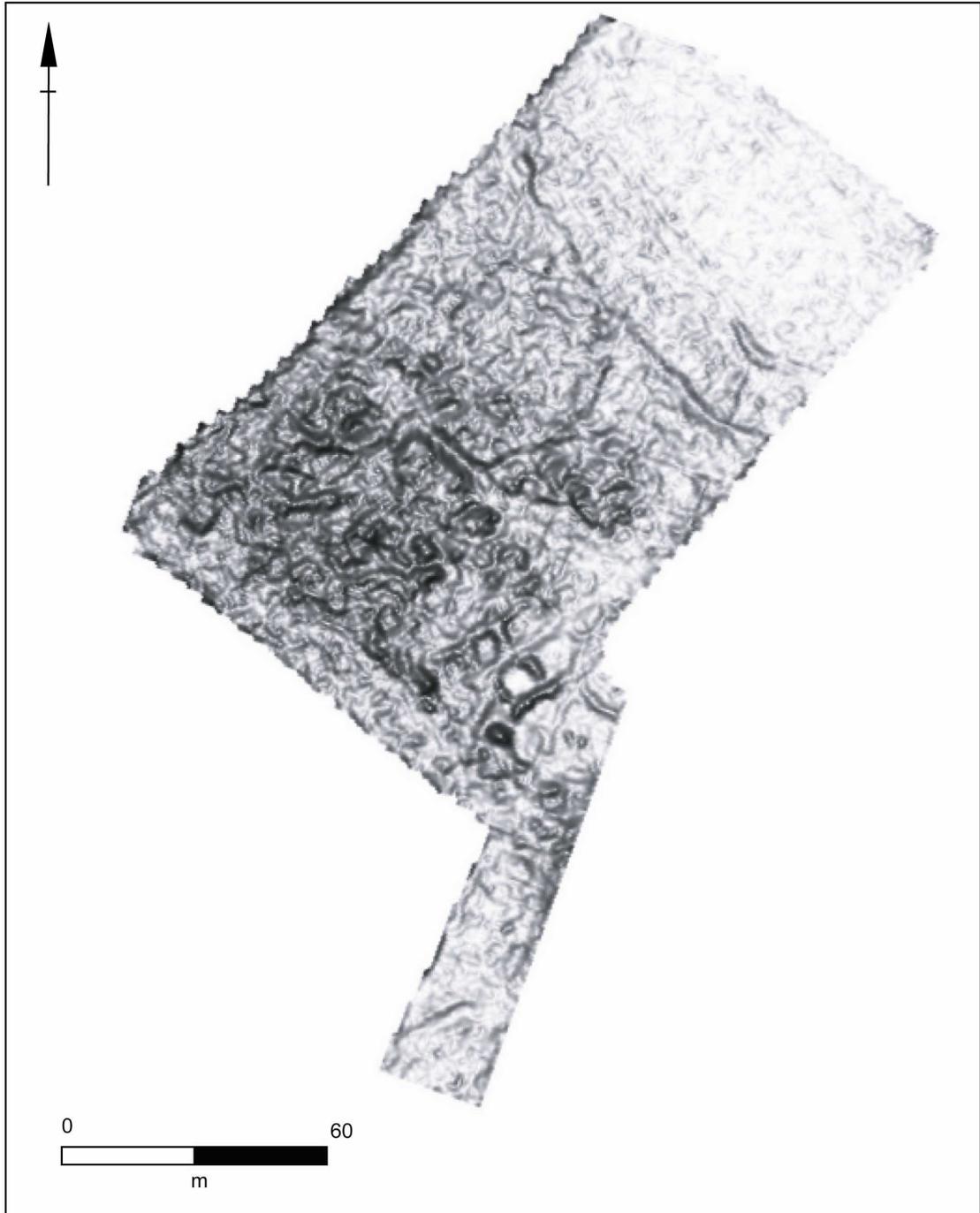
PROJECT
Inisloughlin, 2008

TITLE:
Survey data
displayed using
colour scale

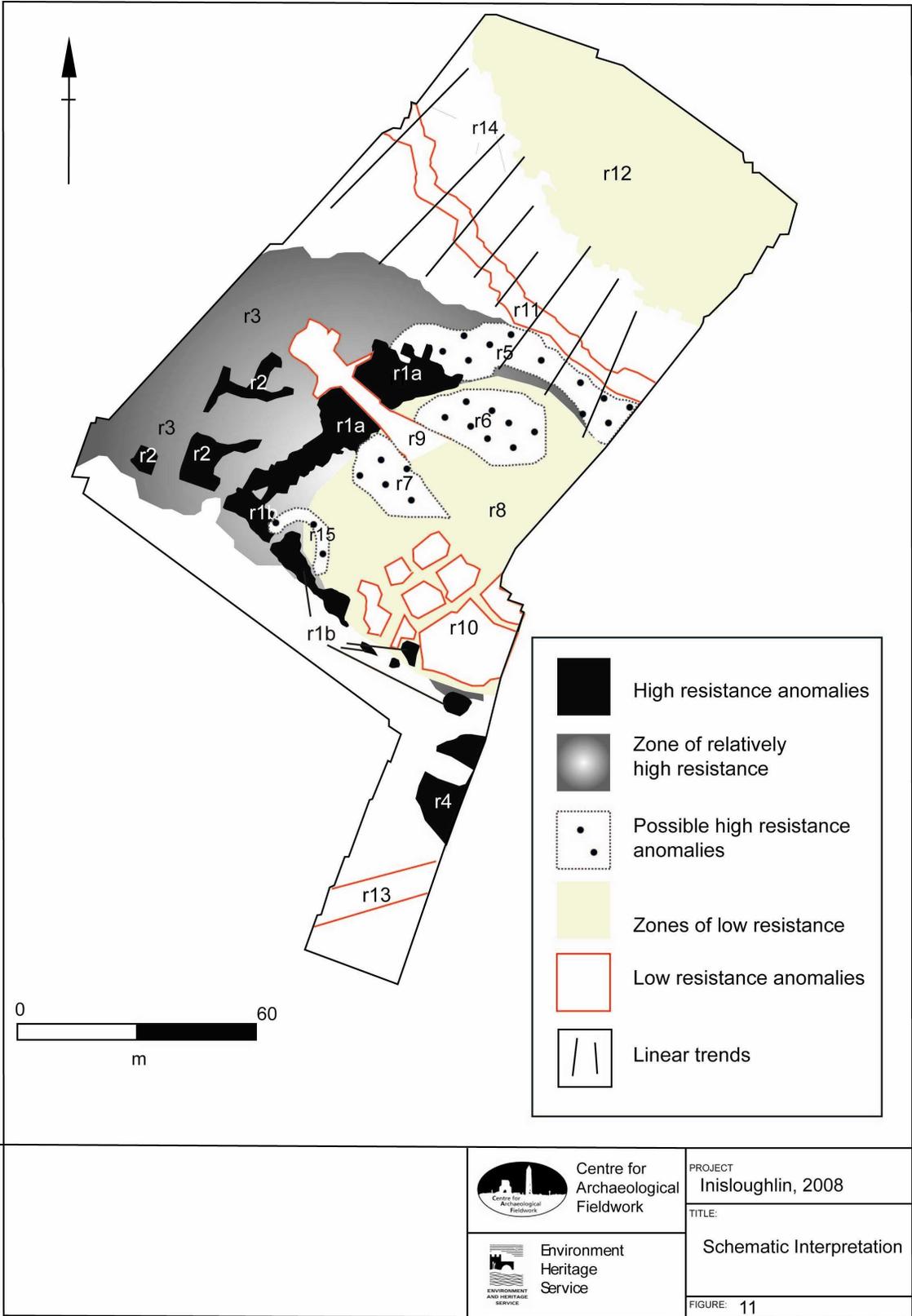
FIGURE: 8



<p>Shade Plot of survey data following application of high pass filter. This has the effect of filtering out broad trends and emphasises detail of smaller anomalies</p>	 <p>Centre for Archaeological Fieldwork</p>	<p>PROJECT Inisloughlin, 2008</p>
	 <p>Environment Heritage Service</p>	<p>TITLE: Survey data after high pass filtering</p>
		<p>FIGURE: 9</p>



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		TITLE: Shaded relief plot of survey data
	 Environment Heritage Service	FIGURE: 10





<p>a Investigate the nature of anomaly r1a and relationship with low resistance gap created by anomaly r9</p> <p>b Investigate corner between possible masonry features represented by anomalies r1a and r1b</p> <p>c Assess the nature of the features represented by the regularly arranged group of anomalies marked r10 and the circular zone of low resistance, r8</p> <p>d Establish whether anomaly r6 is an archaeological response and whether this might be the fort depicted on early OS maps</p> <p>e Investigate whether curvilinear anomaly r11 represents an artificial feature, perhaps a ditch associated with the fort</p>	 <p>Centre for Archaeological Fieldwork</p>  <p>Environment Heritage Service</p>	<p>PROJECT Inisloughlin, 2008</p> <p>TITLE: Suggested location of excavation trenches.</p> <p>FIGURE: 12</p>
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