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# Survey Report

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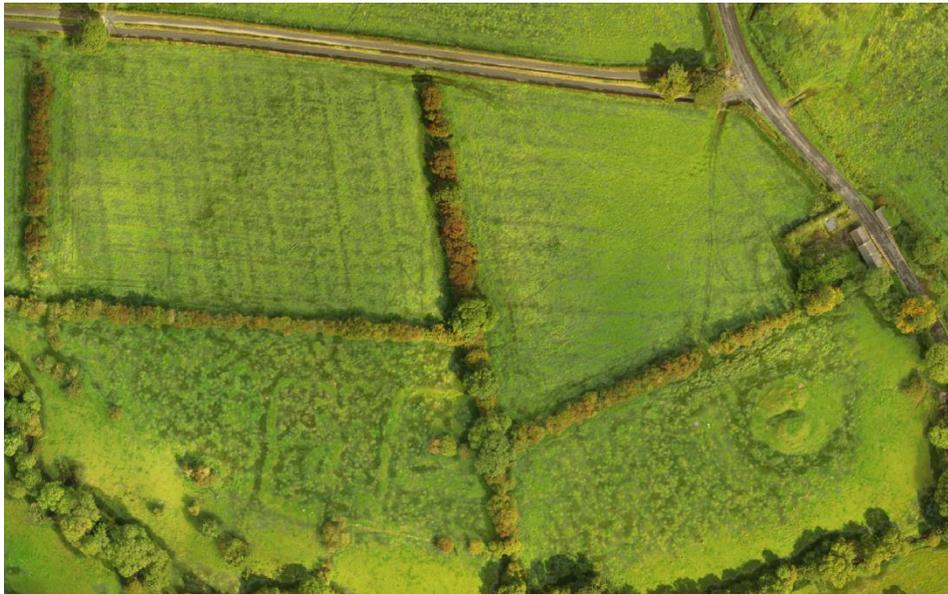
Reference: **Geophysical Survey No. 3**

In association with:

Author: **Dr Tom McNeill and David Craig**

Location:

**Killyglen Motte and Church  
Killyglen  
County Antrim  
SMR Sites: ANT 035:022 &  
ANT 035:023**



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Belfast BT7 1NN

**Cover illustration:** Drone Orthomosaic overlaid with Local Dominance processed image

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## CONTENTS

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### Contents

LIST OF FIGURES	4
1. Introduction	5
2. Site Specific Information	6
3. Survey Methodology Overview	6
4. Data Processing	7
5. Digital Archive	7
6. Description and Interpretation of Anomalies	7
Aerial survey	7
7. Resistivity survey and Discussion	8
8. Recommendations	10
Future work	10
9. Bibliography	10
10. APPENDIX 1: Processed and Raw Geophysical Survey Plots	10

## LIST OF FIGURES

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Figure 1 Location map (after Carver and McNeill 2004, p. 5)	5
Figure 2 Site plan (after Carver and McNeill 2004, p. 6)	6
Figure 3 Area to be surveyed. Drone sourced combined semi-transparent image utilising the orthomosaic, a multi-directional hillshade and Local Dominance overlays	8
Figure 4 Position of resistivity grids	8
Figure 5 Resistivity Result (See Appendix 1 for variations)	9
Figure 6 Raw unfiltered data	11
Figure 7 Despiked data result	11
Figure 8 Despiked and Interpolated result	12
Figure 9 Despiked, Interpolated and Sharpened	12

## 1. Introduction

A characterisation resolution electrical resistance survey was carried out over a total area of 0.2 hectares at a site at Killyglen, County Antrim, owned by Samuel Moore. The survey site was chosen by the Ulster Archaeological Society in response to a request by Dr Tom McNeill, who excavated at the site in 2004 when working as Senior Lecturer in Medieval Archaeology at Queen's University Belfast (Licence No. AE/17/168). Dr McNeill was keen to carry out a geophysical survey of the site in order to add to the archaeological information previously obtained there during the excavation. Electrical resistance data was gathered to facilitate the interpretation of any geophysical anomalies recorded.

The area concerned consisted of five fields bounded by the Killyglen Burn to the South, the B148 road to the East, the enclosure of Howestown to the West and, to the North, the lane to Howestown from the road. Work carried out in 2004 in the two fields north of the Killyglen Burn, focused mainly on the eastern one, named field 1 in the Data Structure Report (hereafter referred to as the DSR); it contained a probable motte. The DSR's Field 2 contained a church enclosure, itself divided into an inner and an outer enclosure; the outer one appeared to contain a house platform, presumably for the use of the priest. The major aim of the work in 2004 was to identify evidence of a settlement associated with the church and probable motte. The secondary aim was an evaluation of the probable motte and the presumed house platform attached to the church enclosure. The geophysical survey in 2017 continued these aims, in the light of the results of the 2004 excavation; in particular the demonstration that there was no good evidence for a settlement west of the motte, between it and the church in field 1.

The work involved two methods of survey: aerial photography and resistivity survey. The aerial survey was carried out by Mr David Craig of IrishSights.co.; the resistivity survey was carried out by a team from the Ulster Archaeological Society Survey Group; the licence holder was Dr Tom McNeill.

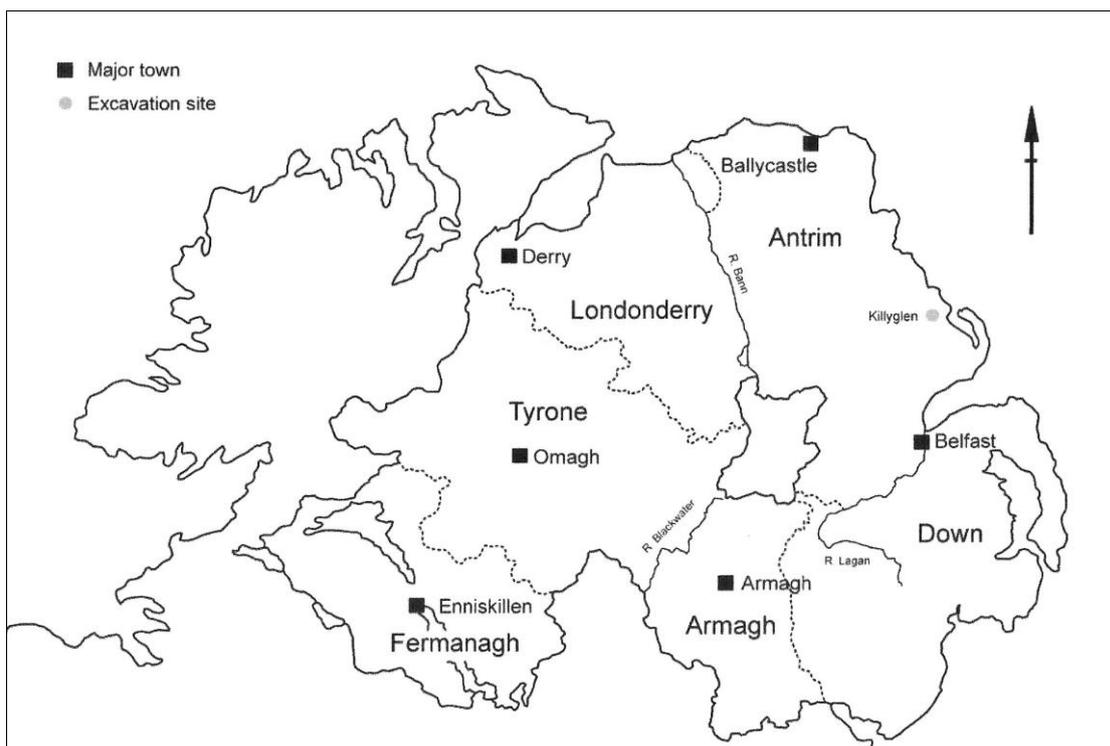


Figure 1 Location map (after Carver and McNeill 2004, p. 5)

## 2. Site Specific Information

Site name: Killyglen Motte and Church

Townland: Killyglen

SMR: ANT 035:022 (Motte) and ANT 035:023 (Church site)

Grid Ref: D 3691 0361 (Motte) and D 3676 0361 (Church site)

County: Antrim

Date of Survey: 9<sup>th</sup> September 2017

Survey Team: Dr T.E.McNeill, David Craig, David Irvine, Randall Scott, Lee Gordon, Michael Catney, Ian Gillespie

Size of Area Surveyed: 2000m<sup>2</sup>

Weather Conditions: Mild with some showers

Current Land Use: Pasture

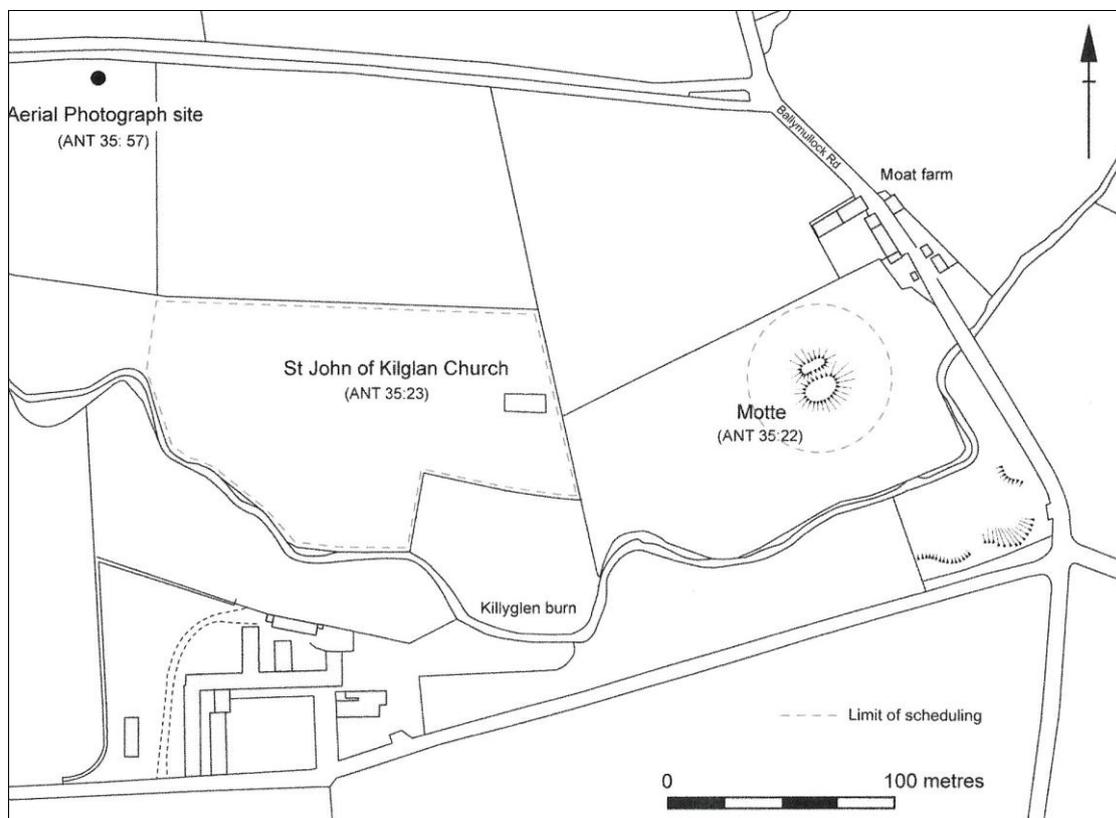


Figure 2 Site plan (after Carver and McNeill 2004, p. 6)

## 3. Survey Methodology Overview

Survey type:	Electrical resistance
Instrumentation:	<i>Frobisher TAR-3</i>
Probe spacing:	Multiple three probe array (1m + 0.5m x 2)
Grid size:	20m x 20m
Traverse internal:	1m/0.5m
Sample internal:	0.5m
Traverse pattern:	Zig-zag

#### **4. Data Processing**

The geophysical data was processed in *Snuffler* software. The primary processes applied were 'Remove Spikes Filter' which helps to eradicate minor spikes in the data. The datasets were also interpolated which creates a smoothing effect. Finally A High Pass Sharpening filter was applied.

#### **5. Digital Archive**

The geophysical datasets were collected, processed and archived in accordance with Archaeological Data Services best practice and have been archived with the Ulster Archaeological Society.

#### **6. Description and Interpretation of Anomalies**

##### ***Aerial survey***

This was carried out using a drone and covered the whole area of the five fields concerned approximately 19 ha. It showed that the three fields to the north of the area had been heavily ploughed, especially the two eastern ones closest to the church and probable motte. The most eastern one, north of the DSR's field 1, had been suggested in 2014 as an alternative location for a settlement, but the evidence from the air seemed to show that there was no evidence for this site.

The aerial survey emphasised the presence of a curving bank along the top of the slope down to the river, which was marked as a field boundary on the O.S. 6" maps. However, it would appear from the survey that the stone wall, which marked the southern boundary of the church enclosure, had been constructed on top of this bank. The bank separated the level area of land in the DSR's field 2 from the slope down to the river, but also a bushy area to the west, south of Howestown, which linked in to the curved eastern boundary of Howestown itself.

In 2004 the area north in this field north or west of the church enclosure had been identified as having the ridges of lazy-bedding (Carver and McNeill 2004, fig. 5). The aerial survey showed none of the regular and parallel lines of such ridges and the suggested identification of lazy-bedding should be rejected. Instead, the survey appeared to show several raised platforms and a lower, flat area immediately west of the outer church enclosure. This flat area and the western boundary of the outer enclosure aligned with a track leading down the southern bank of the river to a potential crossing point. There was a clear contrast between the smoother area south and west of the bank and humps and bumps of the area north and east of it.

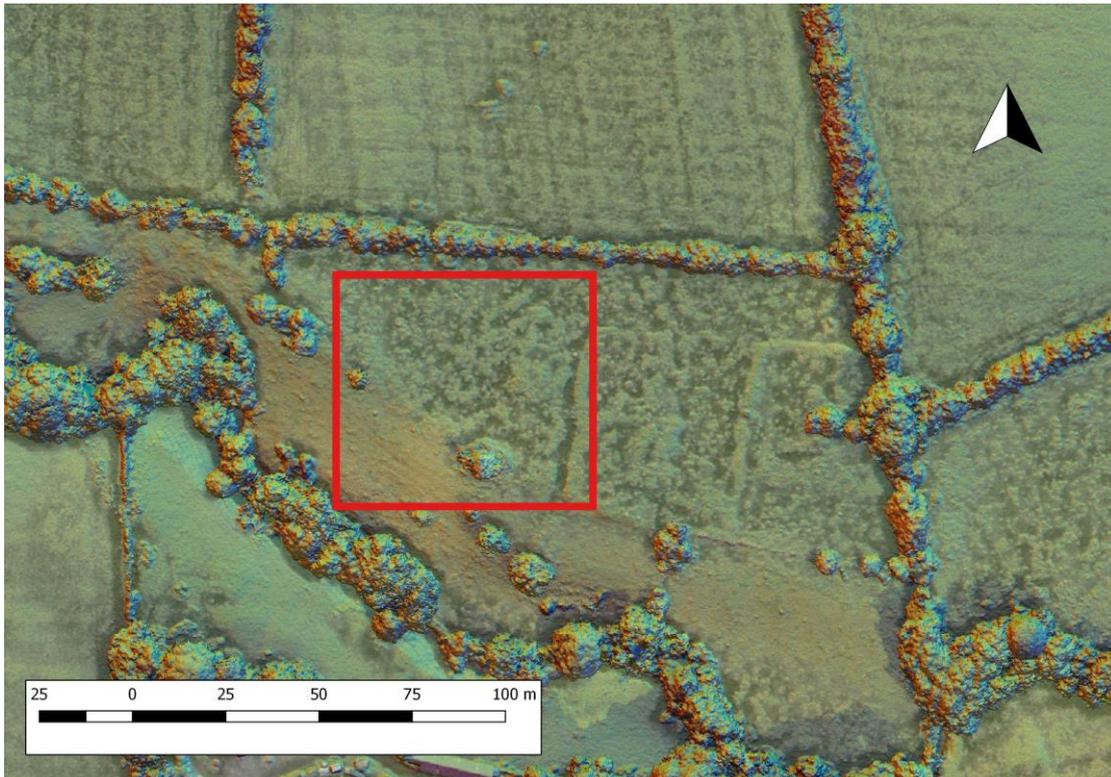


Figure 3 Area to be surveyed. Drone sourced combined semi-transparent image utilising the orthomosaic, a multi-directional hillshade and Local Dominance overlays

## 7. Resistivity survey and Discussion

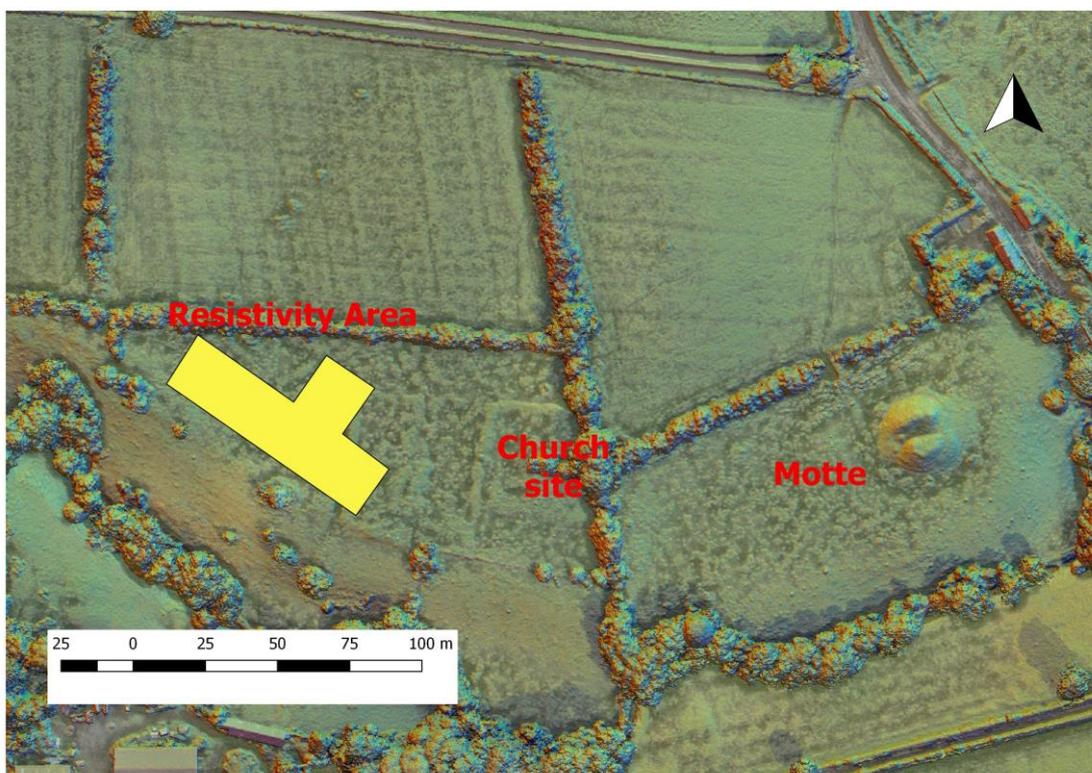


Figure 4 Position of resistivity grids

The results of the aerial survey caused the search for evidence of any settlement to move from the environs of the motte, in particular the field to the north, towards the area west of the church enclosure. Five 20m x 20m. squares were surveyed to the west of the

church enclosure, in response to the information from the aerial survey; they were sited to include a part of the enclosure bank. After the field work, the data was sorted to produce a clear contour plan of the raw results

There were three main results from the resistivity. The northern section of the church enclosure bank showed up clearly, but the southern part was confused. The flat area visible to the west of the bank was also visible in the resistivity as an area clear of anomalies. Rectangular areas of high resistance could be identified and linked to platforms noted on the aerial survey, supporting their identification as house platforms.

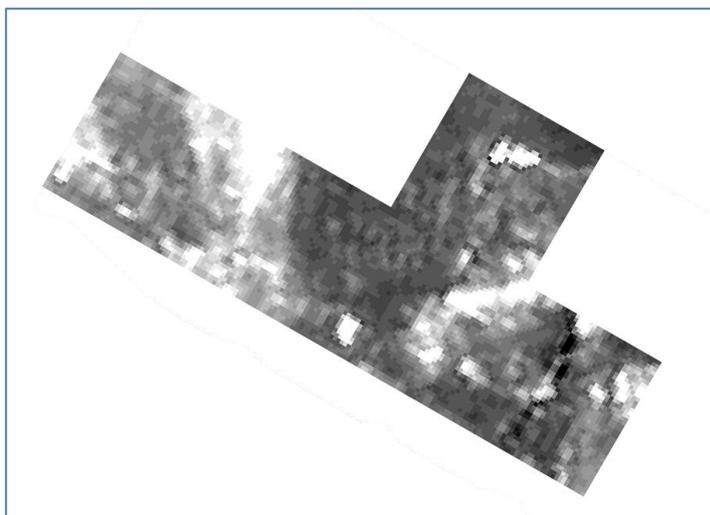


Figure 5 Resistivity Result (See Appendix 1 for variations)

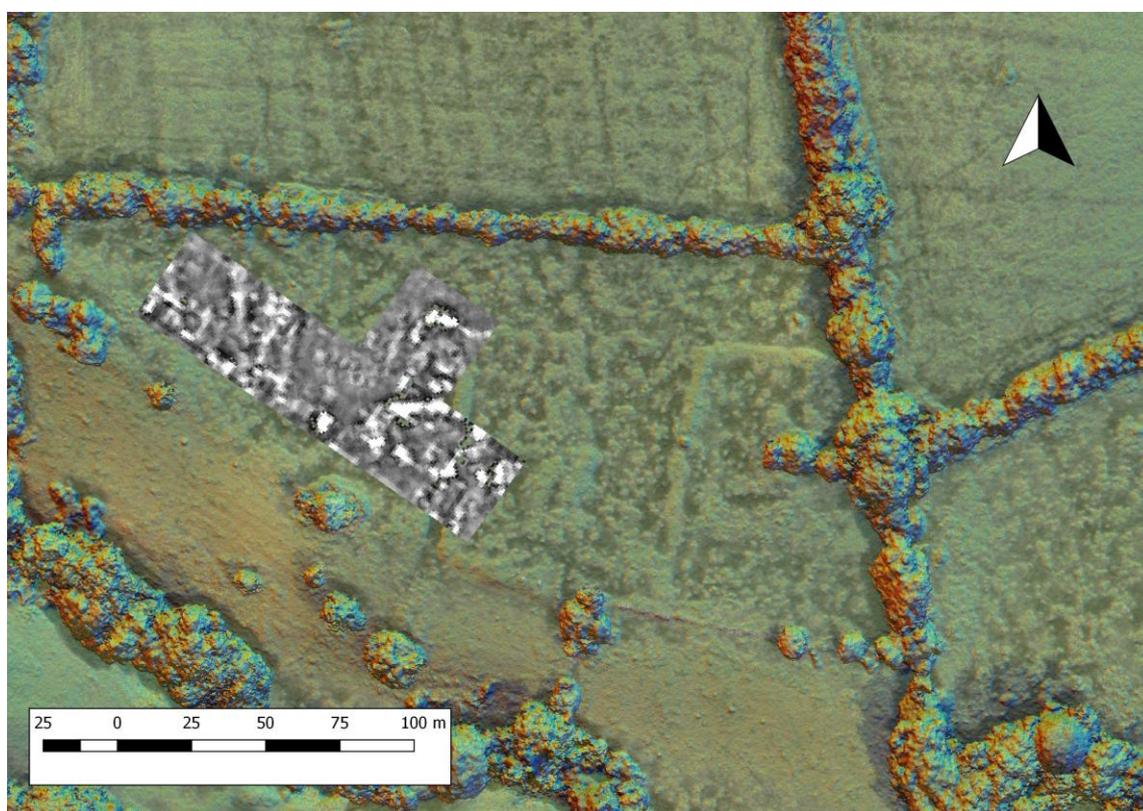


Figure 6 Interpolated Resistivity results over landscape

## **8. Recommendations**

### ***Future work***

Time in 2017 did not allow the completion of work to satisfy the aims outlined above. The results provide a clear hypothesis that at Killyglen, the church enclosure was inserted into the eastern side of a settlement enclosed by the bank between it and the river. The stone wall of the enclosure appears to be built over the bank and, at its north-west corner, to cut a house platform. Further resistivity to the north and west of the enclosure is needed to confirm this situation. This appears to be the location of the settlement which, in 2004, was assumed to lie to the east, between church and motte.

The investigation of the motte, the second objective of the survey, has not been completed. The aerial survey seems to show that there was no bailey ditch attached to the motte, but it would be useful to extend the resistivity survey to the north and east of the motte, complementing the survey to the west carried out in 2004, to test the evidence that the motte and the tower later built on top of it were isolated from the church and settlement.

## **9. Bibliography**

Carver, N. and McNeill, T.E. 2004. Excavations at Killyglen, Co. Antrim, Data Structure Report No. 031, Belfast: Centre for Archaeological Fieldwork.

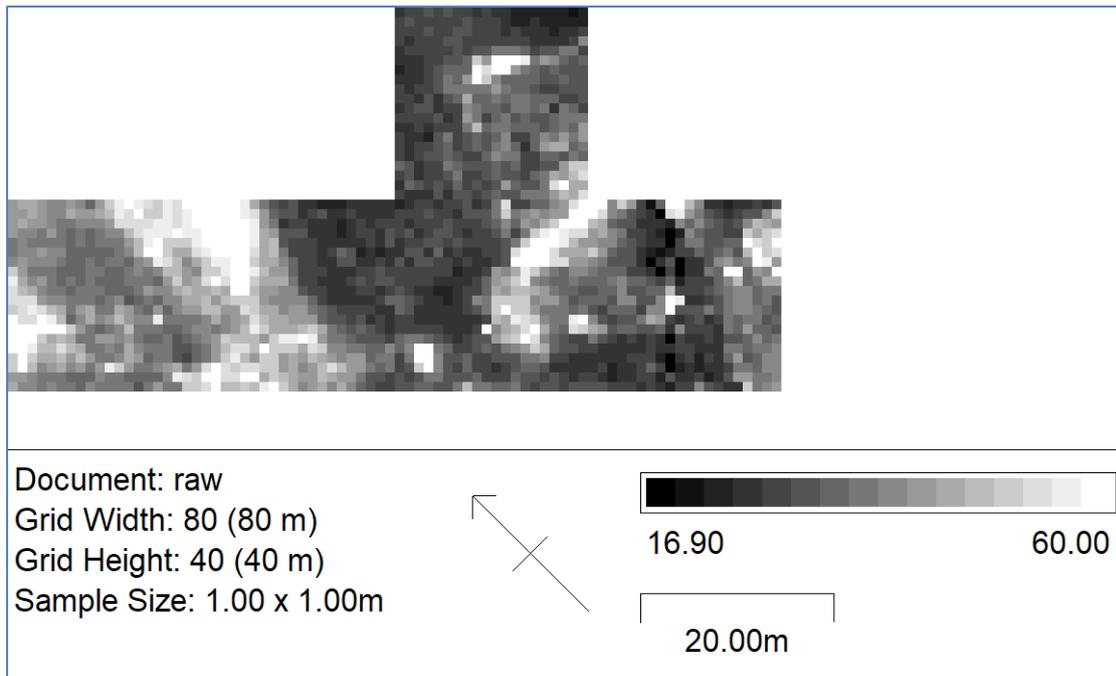


Figure 7 Raw unfiltered data

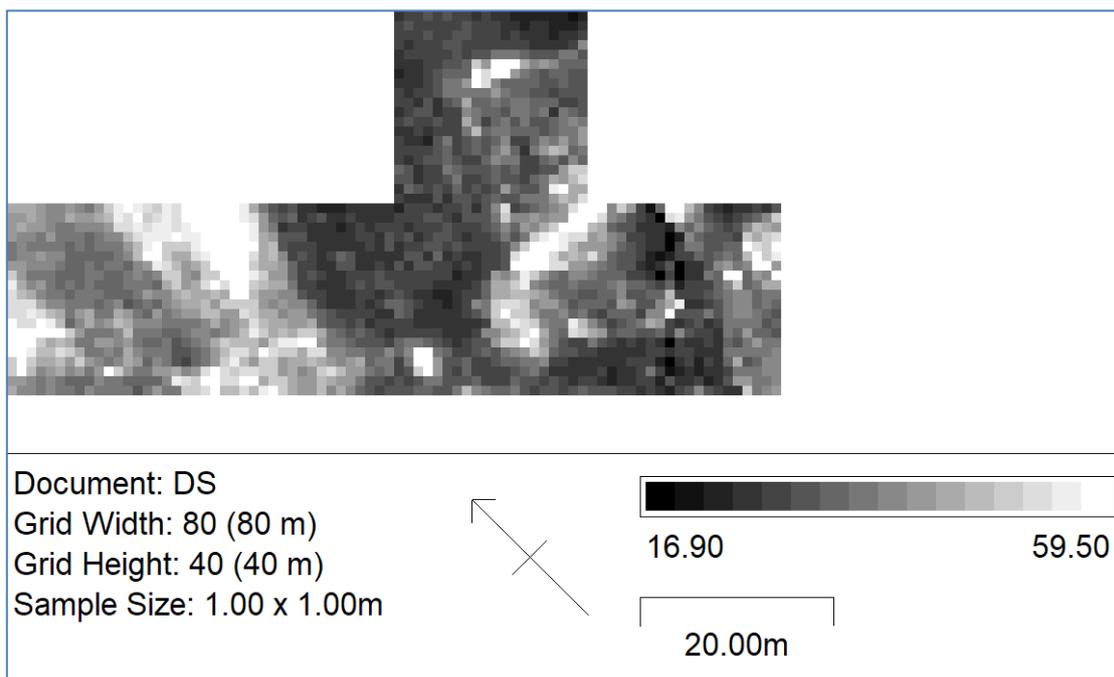


Figure 8 Despiked data result

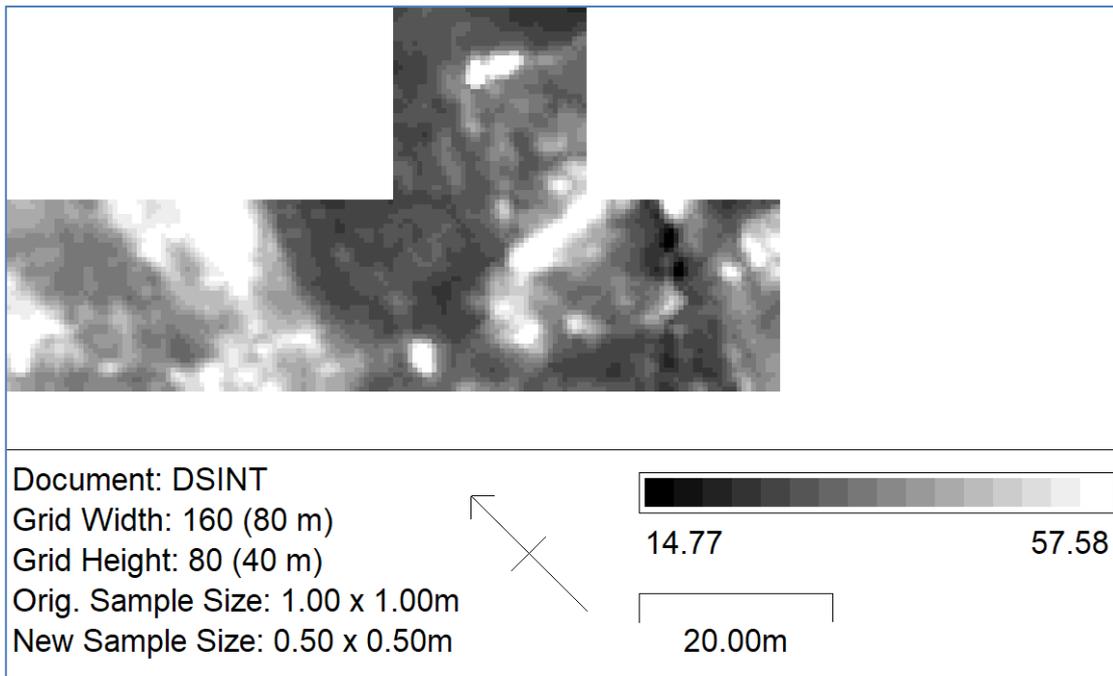


Figure 9 Despiked and Interpolated result

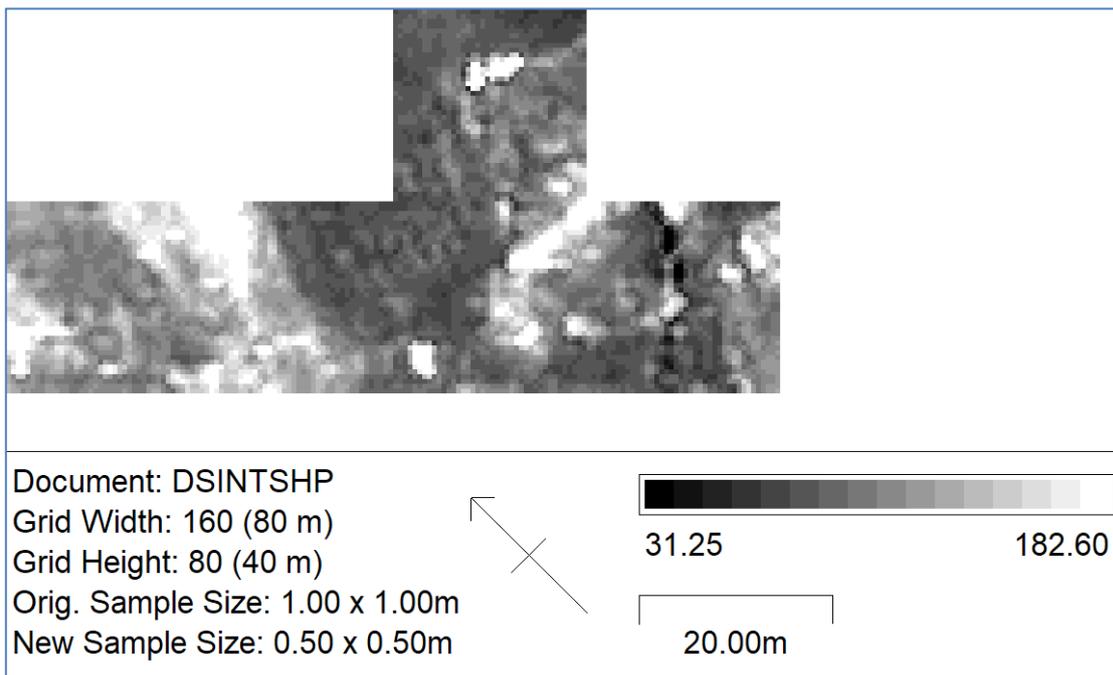


Figure 10 Despiked, Interpolated and Sharpened