

Centre for Archaeological Fieldwork
School of Geography, Archaeology and Palaeoecology, QUB



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Archaeological investigations carried out at the findspot of a
Late Bronze Age gold object at Castlegore, County Tyrone
AE/08/193

On behalf of





Castlegore, County Tyrone

Archaeological investigations carried out at the findspot of a LBA gold object

on behalf of

Northern Ireland Environment Agency (NIEA)

by

The Centre for Archaeological Fieldwork (CAF),
School of Geography, Archaeology and Palaeoecology,
Queen's University,
Belfast.
BT7 1NN.

Emily Murray and Ronan McHugh

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1 Summary

1.1 Background

- 1.1.1 A decorated Late Bronze Age gold dress fastener was found by Mr Gary Sproule in one of his fields adjacent to the Ganvaghan road, in the townland of Castlegore, Co. Tyrone in April 2008 (Figure 1 and Plates 1 and 2).
- 1.1.2 The discovery was followed up, in November 2008, by an archaeological evaluation of the site by the Centre for Archaeological Fieldwork (CAF), on behalf of the Northern Ireland Environment Agency (NIEA).
- 1.1.3 There are no known monuments of this period in the immediate vicinity and there are no obvious above-ground earthworks or features in the field where the object was found. A range of methodologies was therefore employed by the CAF to investigate the site of the find spot. These comprised a soil resistivity and magnetometry survey of a 8100m² square centred on the findspot (Figure 2); a systematic traverse of the same area with a metal detector; and the excavation of an evaluation trench (3m x 4m) opened over the approximate find spot.
- 1.1.4 Claire Foley, NIEA, and the landowner were kept informed of the general progress throughout these investigations.

1.2 Geophysical surveys

- 1.2.1 The soil resistivity survey detected a series of high resistance anomalies which coincided with probable natural topographical features within the survey area, and also probable relict traces of the former ditches that subdivided the field. None of the anomalies recorded were of definite archaeological significance.
- 1.2.2 The magnetometry survey results also returned anomalies which coincide with the natural topographical features and former field boundaries. In addition two parallel, slightly curvilinear, positive anomalies detected at the east of the survey area possibly represent a ditch, pathway or natural gully (measure approximately 30m to 45m long by

7m wide). A similar anomaly was also detected at the west of the survey area. These were the only anomalies recorded of possible archaeological significance.

1.3 *Excavation*

1.3.1 An evaluation trench (3m x 4m) was opened over the approximate find spot but the excavation uncovered no archaeological features or artefacts. The excavation showed that the plough soil extended for a depth of between 0.29m and 0.32m and directly overlay the natural stony subsoil.

1.4 *Metal detector survey*

1.4.1 The metal detector survey covered six of the nine grid-squares in depth, while two other grid-squares were given a cursory traverse. The survey returned a total of 50 positive ferrous and non-ferrous targets. All of these were investigated and, with the exception of one for which the metal object detected was not found, none of the metal finds were of precious metals or of any great antiquity and included drinks cans (aluminium and/or steel) and corroded iron nails and bolts.

1.5 *Discussion*

1.5.1 The combined results of the three investigative techniques employed at Castlegore all proved negative in terms of establishing a context for the gold object. This would suggest that, like many other Late Bronze Age gold and bronze finds that the Castlegore object must also be treated as a stray find although the possibility that archaeological features have been overlooked cannot be ruled out.

1.6 *Recommendations*

1.6.1 In light of the negative results from the three techniques employed to investigate the site of the gold find at Castlegore, coupled with the general lack of occupational debris found in the vicinity, no further work is recommended.

- 1.6.2 The small assemblage of modern finds recovered from the excavation and metal detector survey does not require specialist analysis and can be disposed of. The military button and flints will be returned to the landowner.
- 1.6.3 The only potential archaeological feature detected in the magnetometry survey is the curvilinear anomaly to the east of the find spot. This may represent a ditch, path or natural gully and it would be of interest to investigate it at some time in the future. At present this and any other archaeological remains that may exist in the field are not in any immediate threat under the present farming regime.

2 Background

2.1 Discovery of the dress fastener

- 2.1.1 A decorated Late Bronze Age gold dress fastener (approx. 8.3ozs or 0.24kg) was found by the farmer and landowner Mr Gary Sproule in one of his fields adjacent to the Ganvaghan road in April 2008. He found the object when gathering stones after the field was ploughed (approx. 0.23m deep furrows) in advance of sowing a wheat crop. The field had previously been under pasture and had not been ploughed since the 1950s according to the landowner's father (C. Foley pers. comm.).
- 2.1.2 The field in which the find was made is 3.82 hectares (approx. 9.5 acres) and is in an elevated position relative to the River Derg valley. It is overlooked by Muckle Hill to the north (Figure 1). It is bounded to the west by a lane leading to a cluster of farm buildings set close to the banks of the River Derg, to the north by a wooden fence, to the east by a ditch with mature broadleaf trees (Plates 1 and 2) and to the south by Ganvaghan road. The find spot was located towards the centre of this field just above the 60m (or 200ft) contour and approximately 0.17km south of the Sproule's new house. The house was built in 2003 at the southern edge of the field, on Ganvaghan road. The house replaced an earlier dwelling (i.e. the house plot shown in Figure 2) and is accessed by a lane leading from the south-eastern corner of the field and running north-westwards and roughly parallel to Ganvaghan road.

- 2.1.3 Apart from the fastener, no other known artefacts have been found in the immediate vicinity and there is no current evidence of finds or archaeological deposits eroding out of any of the field ditches or river banks in the area. The approximate find spot is located near the edge of an elevated, gently undulating plateau which dips down, to the north and northwest, to the flat river plain of the River Derg. It is a relatively prominent location, with excellent views and in close proximity to the river (approx. 0.35km to the north) but there are no obvious above-ground earthworks or features (Plates 1-3).
- 2.1.4 Recorded archaeological sites in the immediate locale, in Castlegore townland, comprise a standing stone (TYR 016:005) of which there are no visible remains, traces of the possible remains of a castle (TYR 016:006), traces only also of a rath on the north slope of Silver Hill (TYR 016:007) and an enclosure (TYR 016:0) for which there are no visible remains (Figure 1). A Late Bronze Age bronze cauldron, dated to 700-600BC, was also found near here in 1933 in a bog at Castleberg (Cahill 2002, 102).

2.2 *Late Bronze Age dress fasteners*

- 2.2.1 Over 60 gold dress fasteners 'survive' from Ireland and they are broadly dated to the Late Bronze Age or Dowris Phase, 900-600 BC, which is renowned for its high quality and quantity of fine gold and bronze objects (Cahill 2002, 86 & 96). The Castlegore gold object has not yet been studied in detail but notes made by Richard Warner of the Ulster Museum on a cursory examination of the find in June 2008 suggest it may technically be classified as a 'cup-ended bracelet' rather than a dress fastener.
- 2.2.2 Few of the recorded Irish Bronze Age gold objects were found through archaeological excavation; many were found in the nineteenth century and are poorly provenanced. An exception is the gold dress fastener and a smaller 'sleeve fastener' found during the excavation in 1995 of a low, elliptical mound located within an area of over-cut raised bog in Killymoon townland near to Cookstown, Co. Tyrone (Hurl 1995; Hurl *et al.* 2005). Saddle querns, rubbing stones, large quantities of charred barley, spindle-whorls and woollen twine and cloth were also all recovered along with polished stone axes, a socketed bronze axe and quantities of Late Bronze Age pottery (Hurl 1995). The main phase of activity was represented by the development of the mound which was formed by the building up of layers of clay, ash and silt. These appear to have resulted from repetitive burning and which have been dated to between the mid-twelfth to seventh

centuries BC (Hurl *et al.* 2005, 4 & 51). In 1816 another gold dress fastener was also found from the same townland during railway construction work. It was found within an alder box that has been dated to c. 900 BC (Cahill 2002, 87).

2.2.3 These and other contemporary gold objects appear to have been only rarely used to accompany the dead. They have been found in bogs, on dry land, and sometimes under rocks (Cahill 2002, 88) though a relatively high number of hoards and single finds from this period have been found in wet environments such as rivers and bogs (*ibid.*, 92). The Killymoon finds also fall within this pattern and, although the Castlegore dress fastener is not clearly from a 'wet environment', it was found in close proximity to a major river.

2.3 *Cartographic history of the site*

2.3.1 The basic outline of the field has largely been preserved since the first edition of the Ordnance Survey (OS) map in 1833 (Figure 3a). At that stage, an internal north-south boundary partitioned the field in two and extended through the area of the field corresponding with the western side of the survey area (Figure 2). A second boundary extended north-westwards from the western edge of this internal partition to the western edge of the field. The western border of the field incorporated a pronounced bulge at this stage, suggesting that it may have been constructed to deliberately respect some feature within the field which was not recorded on the map.

2.3.2 By 1905, the border of the field had been modified so that the curvilinear bulge was reduced and the outline of the field presented in the same form as it appears today (Figure 3b). Internally, the field was crudely bisected by a meandering, broadly east to west boundary which incorporated the north-west running element from the boundary shown on the 1833 map. Two further boundaries extended northwards from the east-west partition line to subdivide the northern segment of the field into three, while the southern segment was subdivided into four holdings. A number of these boundaries passed through the survey area.

2.3.3 The 1983 edition of the OS map showed no new boundaries, but all of the internal boundaries had been removed from the eastern portion of the field (Figure 3c). A staggered north-south boundary incorporating elements of the boundaries shown on the

1905 map partitioned the field into an east and west segment, with the latter still being subdivided into three holdings by the pre-existing boundaries.

- 2.3.4 Today, all of the internal boundaries depicted on the OS maps have been removed and the field constitutes a single holding, except for a small area to the south around the new dwelling house (see Figure 2 and Plate 3). One of these old internal field boundaries, a ditch (G. Sproule pers. comm.), appears to have run through, or at least in close proximity, to the find spot which might suggest that the object was concealed under or within the old field boundary. The use of the field for pasture over the last twenty years or more will also have ensured that the object remained in the ground undisturbed.

2.4 *Research aims of the project*

- 2.4.1 The gold object found by Mr Sproule and cursorily examined by archaeologists from the NIEA and MAGNI, is believed to be potential treasure. The investigations carried out by the CAF were therefore intended to inform the subsequent process including a potential treasure inquest. The main objective of the archaeological evaluation was to establish a context for the gold find and to determine if an archaeological site is present in the vicinity of the find spot.

2.5 *Archiving*

- 2.5.1 Copies of this report have been deposited with the Northern Ireland Environment Agency (NIEA). All site records and finds are temporarily archived within the School of Geography, Archaeology and Palaeoecology, Queen's University, Belfast.

2.6 *Credits and acknowledgements*

- 2.6.1 We would like to thank the landowner Mr Gary Sproule, and his wife Valerie, for permission to excavate and carry out fieldwork at the site of the gold find.
- 2.6.2 The survey grid was set up by Sapphire Mussen (CAF) and the geophysical surveying was undertaken by Ronan McHugh (CAF) with the assistance of Sapphire Mussen and Emily Murray (CAF). The excavation was directed by Emily Murray with the assistance of Claire McGranaghan (CAF).

2.6.3 The metal detecting was undertaken by Mr Jim Beggs and the recording and investigation of the find spots was carried out by Emily Murray with the assistance of David McIlreavy (CAF) and the landowner Mr Gary Sproule.

2.6.4 We would also like to thank Dr Philip Macdonald of the CAF for advice throughout the project and for reading an earlier draft of this report.

3 Geophysical surveys

3.1 Introduction

3.1.1 In the absence of any above ground indication of archaeological activity, a geophysical survey was carried out in an attempt to determine the presence of any buried archaeological features in the immediate vicinity of where the gold find was made which might provide a context for the object.

3.1.2 Two geophysical techniques were employed over a survey area of 8100m², centred on the approximate find spot (Figure 2). The surveys were carried out over the 6th and 7th November 2008 and the weather at the time was inclement and cold.

3.1.3 The survey area was located on a hillside with a gentle east to west prevailing slope and within the survey area, the topography varied considerably (Plates 1-3). The eastern side of the area was characterised by gentle north- and west-facing slopes with barely perceptible north-south aligned hollows visible only due to areas of standing water which had collected in them. The gradual gradient of the slope was interrupted by a rounded ridge which extended south-east/north-west across the centre of the survey area before terminating in a prominent, north-facing knoll. This might have been the feature identified by Richard Warner as a 'slight mound' on his visit to the site in June 2008 (C. Foley pers. comm.). From this knoll, the terrain fell away in a more pronounced slope to the north and to the west, where a shallow valley was formed between this ridge and a second, less prominent ridge which extended from the south-west boundary of the survey area on an almost parallel south-east/north-west alignment. Both this second ridge and the shallow intervening valley sloped to the north in a gradual slope punctuated by low, relatively flat shelves. A small grassy mound was visible at the north eastern end of the valley, at the base of the larger, eastern ridge, while the topography rose to form a domed hillock at the northern edge of the field, beyond the limits of the survey area.

3.1.4 The ground was waterlogged along the southern boundary of the survey area, where the terrain was generally at its flattest, although areas of standing water were encountered throughout the survey area. The solid geology of the area is mudstone and sandstone.

3.1.5 No formal topographical survey of the survey area was undertaken. References to the coincidence of recorded geophysical anomalies with topographical features within this report are based on the estimates of the surveyors and are not to be taken as precise locations.

3.2 *Methodology*

3.2.1 The surveys were carried out over a square grid of 90m by 90m, subdivided into nine grid-squares of 30m by 30m, and giving a total coverage of 8100m². The grid-squares were labelled A (south-eastern square) to I, with the find spot being located within the central grid-square E (Figure 2).

3.2.2 The grid was set out on November 4th using a Leica TPS 705 series total station and the corners of each of the nine squares were marked with bamboos inserted into the ground. These were removed on completion of the survey. Once the grid was set out both magnetometry and earth resistance techniques were employed over the entire grid area.

3.2.3 The soil resistivity survey was carried out using a Geoscan RM15 meter and MPX15 multiplexer. A number of factors, including 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. Relatively high background readings, greater than 150 ohm and probably indicative of a thin soil cover, necessitated the adjustment of the range of the survey from times-10 to times-1, potentially reducing the detail of the survey.

3.2.4 The magnetometry survey was undertaken across all nine grid-squares using a Bartington Grad601-2 fluxgate gradiometer. It was carried out at a resolution of 1m by 0.25m. Full details of the equipment used for both surveys are given in Table 1.

3.3 *Soil resistivity*

3.3.1 Nine grid-squares were surveyed, although technical difficulties with the processing of the two grids (A and C) surveyed on the second morning of the fieldwork meant that only seven of the grids (grid-squares B, D, E, F, G, H and I) were suitable for interpretation.

The results of the resistance surveys are graphically presented in Figures 4 and 5. An interpretation of the results is given in tabular form in Table 2, which should be read in association with Figure 6, which contains a simplified illustration of the resistance survey interpretation.

- 3.3.2 The resistance data revealed little of potential archaeological interest and the only resistance anomaly that can tentatively be forwarded as being of potential archaeological interest is the ethereal circular trend at the centre of the site (r24). The regularity of its form and the diameter of approximately 40m might indicate this is the result of anthropogenic activity, but the anomaly is too vague and poorly defined for this to be offered as anything other than a tenuous suggestion. The most prominent features of the survey were a series of poorly defined high resistance anomalies located in the western half of the survey area (r1, r2, r13, r14). These anomalies coincided with the area of the field which is topographically defined by clearly visible ridges and undulations and the high resistance anomalies are probably a response to these features. The poorly defined and inconsistent shape of the anomalies suggest that they are more likely to be a response to the underlying geological conditions rather than buried stone or masonry features. A number of linear artificial features recognised during the survey (r17, r18, r19, r20, r21, r22, r23) were identified as responses to field boundaries depicted on the various OS maps (Figure 3). These are most clearly visible in Figure 5. The majority of the other anomalies recorded during the survey appeared to respect those boundaries, suggesting the activity represented by the anomalies was of relatively recent date.

3.4 *Magnetometry*

- 3.4.1 The results of the magnetometry survey are graphically presented in Figures 7 to 10. An interpretation of the results is given in tabular form in Table 3, which should be read in association with Figure 11, which contains a simplified illustration of the magnetometry survey interpretation.
- 3.4.2 Possible evidence of archaeologically significant activity is suggested by three curvilinear anomalies recorded in the magnetometry survey on the periphery of the survey area, on the western and eastern edges (m2, m3 and m4). Both the level of the magnetic responses and the relatively precise definition of each of these anomalies is

not inconsistent with their interpretation as artificial features, possibly ditches which have been filled with material of a higher magnetic signature than the surrounding soil. If these anomalies are indeed representative of ditches, they might constitute the remains of a circular or curvilinear enclosure. The two anomalies on the east of the survey area (m2 and m3) are possibly representative of a double ditch, or else of separate structures indicating more than one phase of construction. Any enclosure formed by these ditches would be relatively large, with an estimated diameter of between 90m and 100m. The position of the anomaly does not correspond with the bulging boundary depicted on the 1833 OS map (Figure 3).

- 3.4.3 Interpretation of these anomalies as the remnant of ditches or an enclosure is, however, guarded. Any such feature would have extended beyond the survey area on the western and northern sides, so the full extent of the anomaly was not determined by the survey, thereby hampering a more confident interpretation. Further, any continuation of the anomaly to the south appears to have been obliterated by the highly magnetised zone (m6) which broadly coincides with the fence line shown on the 1905 and 1983 OS maps. The visible stretches of the anomalies might have a geological explanation, particularly the western anomaly (m2) which is located along one of the visible ridges in this part of the field, or, they might be relict of tracks or pathways through the field. It is also questionable whether any artificial enclosure would be constructed to include the uneven, undulating slopes in its interior when a more level and slightly more elevated site was available simply by shifting the site only 30m to the east.
- 3.4.4 It should finally be added that prehistoric settlement sites are generally ephemeral in nature. It is possible that the remains of such a site exist within the survey area, but simply were not detected by the geophysical survey due to the effects of previous cultivation on the site and the general condition of the ground.

4 Excavation

4.1 Introduction

4.1.1 The geophysical surveys did not identify any positive archaeological features in the vicinity of the findspot. The most likely archaeological anomalies detected were a pair of parallel curvilinear anomalies (m2 and m3) located approximately 28m to the east of the find spot which may represent a ditch, pathway or natural gully. The strong signal recorded would suggest that the anomaly is made-up of, or filled by, different material to the surrounding soil, or has been magnetically enhanced, for example by burning. In order to proof the magnetometry results it would require excavation of a test trench of at least 10m by 2m. Given the time constraints -the field was to be ploughed and sown with winter wheat in November- it was decided not to investigate this anomaly at this stage but instead to open an evaluative test trench, over the approximate location of the find spot. The findspot coincided with the edge of the vague circular resistance anomaly (r24) located at the centre of the survey grid, so the excavation could potentially inform on the nature of this anomaly.

4.2 Methodology

4.2.1 The excavation was carried out manually using hand tools. In the absence of any archaeological features being uncovered, the principal site records for the excavation consist of a site diary and photographs.

4.2.2 The trenches were backfilled and the site was re-instated as found on completion of the excavation.

4.3 Excavation

4.3.1 A 3m by 4m excavation trench was opened at the approximate find spot of the gold object on November 18th (Plate 4 and Figure 12). The plough soil (Context 101) comprising the 'sod', with the roots and stalks of the previous wheat crop was removed. The upper 0.5m of the plough soil was wet, but the underlying horizons were relatively loose and dry and can be described as a rich brown loamy soil with some small stones

and gravel, and which became increasingly stony with depth. The plough soil also contained some pieces of quartz and 'rotten' or decaying stones along with the overturned sods from the previous seasons ploughing in April. The grass of the overturned sods was still extant and had not fully decomposed.

4.3.2 There were few finds from the plough soil. The objects recovered were two pieces of bottle glass, three small corroded iron objects two of which are probably nails, two small fragments of modern glazed pottery, a piece of slate and a sheep bone. A woody piece of a tree root, with a minimum diameter of 0.04m was also found. It might be suggested that this was a remnant from a tree or large ivy that had grown on the ditch, now removed, that used to run across the field close to the location of the excavation trench. The only finds of archaeological interest were two small flint flakes. These have been identified by Brian Sloan, of the CAF as a pressure flake and the distal end of a flake blade. Both are undiagnostic, although the presence of pressure flakes suggests that the finishing of a tool was carried out in the vicinity rather than the primary reduction of cores.

4.3.3 Excavation of the plough soil continued to a depth of around 0.25m when the stony, orange coloured natural subsoil was reached. Due to the natural slope of the hill, and the unevenness of the underlying subsoil, the depth of the overlying plough soil ranged between 0.24m and 0.32m (Plate 5).

4.3.4 No features were cut into the subsoil and no trace of any feature corresponding with the possible circular anomaly detected in the resistance survey (r24) was observed. The trench was photographed and backfilled.

5 Metal detector survey

5.1 Introduction

5.1.1 At the recommendation of Paul Logue and Claire Foley, of NIEA, a metal detectorist, Mr Jim Beggs was employed to traverse the field in which the gold object was found. Mr Beggs carried out the survey under the direction of the excavation licence holder (E. Murray).

5.2 *Methodology*

- 5.2.1 A digital 'Target I.D.' metal detector made by Fisher Research Laboratory, California was employed for the survey. The model has an iron discrimination function which allows the frequency to be altered to discriminate between iron, which gives a low tone and other metals such as foil, nickel, zinc, copper, silver etc., all of which give higher tones. The responses given by 'larger' iron objects cannot, however, be fully tuned-out and therefore cannot be differentiated from non-ferrous targets. The depth at which an object is buried, in relation to its size, is also an important variable. The implication of this was that positive targets in the Castlegore survey comprised both non-ferrous metal objects and 'large' iron objects.
- 5.2.2 Six of the nine 90m² grid-squares (grid-squares A, B, C, D, E and H) were traversed systematically in 2m by 30m lengths. Due to the dumping of rubble and other material in the vicinity of the Sproule's house, it was decided not to traverse grid-square F which is located in this area. Due to time limitations grid-squares G and I were each only given a cursory traverse.
- 5.2.3 Positive targets were marked with bamboos and the grid co-ordinates were recorded (Table 4 and Figure 13). Each of the targets was then investigated by overturning the sod (approx. 0.2m square). The sods were reinstated and all of the metal finds were removed from the field on completion of the survey.
- 5.2.4 Only a handful of the targets recorded in grid-square A, the first grid-square to be surveyed, were investigated on the same day as the survey (November 25th). The majority were excavated on the following day (November 26th) and in the absence of the metal detector it often proved difficult and time consuming to readily locate the object that had given the response. The location of two of the targets in the field was unsuccessful. Bulk samples taken from these two target areas were bagged and returned to the lab where they were dried and sorted and just one of the pair yielded a metal object (corroded iron nail).

5.3 Results

- 5.3.1 A total of 50 targets were recorded and none of these were of precious metal objects. The highest concentration of 'hits' was in the southern corner of the grid in grid-squares A and B. This covered part of the field closest to the road and the concentration of targets, all modern, may be due to increased human activity and associated rubbish in this area. In contrast there were much less targets in the northern half of the survey area although the western grid-squares were not traversed as thoroughly as those at the eastern end and thus the overall distribution cannot be taken as representative. Essentially the results returned were 48 targets for a 540m² area (i.e. six 90m² squares) which equates to a hit rate of 0.0093 hits per square meter or one target for every 108 square metres (average).
- 5.3.2 Almost all of the metal finds were of modern objects (Table 4). The only object of any interest was a copper alloy British Army General Service button bearing the Royal Arms (King's Crown type) (24.2 mm in diameter) which was found in grid-square D. The button is of three part construction and post-dates 1901, when the King's Crown type was adopted by the British Army (Philip Macdonald, pers comm.).
- 5.3.3 A belt buckle and part of a spoon were also found but neither is of any great antiquity. The remaining finds included toothpaste-type zinc tubes (No. 2), aluminium or steel drinks cans (No. 10), a piece of copper pipe, off-cuts from the aluminium guttering of Sproule's house (No. 2 – Mr Gary Sproule built the house and recognised them), a crushed sheet of aluminium, the steel tooth from a combine harvester and miscellaneous undiagnostic objects of corroded iron (No. 22). The iron objects varied in size and weight but ranged from a small nail at 13.8g to a large iron binding at 343g. The metal objects were all found within the plough soil typically at a depth of between 0.1m and 0.2m with the occasional object buried deeper, up to 0.35m in the north-eastern grid-square where the plough soil was marginally deeper.
- 5.3.4 Given that the gold object was found in the plough soil which was ploughed to a depth of approximately 0.23m (9 inches), then the find must have been buried at around this depth or shallower. This suggests that any additional Bronze Age gold, if at a similar depth and within a 30m radius of the original find would have been detected by the metal detector survey, assuming it was not too small or buried deeper than the dress fastener.

6 Discussion

- 6.1.1 The combined results of the three investigative techniques employed at Castlegore have all proved negative in terms of establishing a context for the gold object. This would suggest that, like many other Late Bronze Age gold and bronze finds that the Castlegore object must also be treated as a stray find although the possibility that archaeological features have been overlooked cannot be ruled out.
- 6.1.2 None of the responses in the geophysical surveys can be categorically considered to be due to archaeological features, but the most likely archaeologically-significant anomalies are the curvilinear magnetic anomalies m2 and m3. These might represent buried ditches delimiting a large enclosure, although they could equally represent a natural gully or path of any date. In order to determine their true character the excavation of a test trench (min. 10m by 2m) would be required as a follow-up to the survey.
- 6.1.3 During the six days of fieldwork carried out at the site, in which the field was traversed numerous times by several people, no finds indicative of prehistoric or medieval human occupation or activity such as sherds of pot or worked flints, were found. The small excavation also yielded no artefacts of archaeological interest. The general lack of finds further supports the negative results of the surveys and excavation.
- 6.1.4 Some features of interest were noted in the vicinity of the Sproule's fields which may be evidence for earlier human activity, or, could just as easily be explained as natural occurrences. An isolated marine oyster shell was noted in the field which could represent food debris of unknown date. Alternatively the shell may have been imported with lime or sand spread on the field to improve the soil which is relatively acidic (pH 4.6). An elevated area of blackened soil was also exposed in the adjacent field on ploughing (Plate 6). No surface finds were noted on traversing the blackened spread nor were any pieces of burnt wood, coal or charcoal evident. The blackened soil may be due to the organic enriching of this part of the field sometime in the past or, given its proximity to the river and its location within the flood plain, there is a slight possibility that it might represent the traces of a burnt mound. Lastly, the landowner Mr Sproule noted on ploughing the field, for his first time earlier in the year, that there were a number of large flat slabs located within the plough soil at the eastern end of the field, beyond the

eastern edge of the survey area. It is likely that these are natural features or may be due to earlier field clearances. The possibility that they may represent a structure(s) of archaeological interest should also be considered.

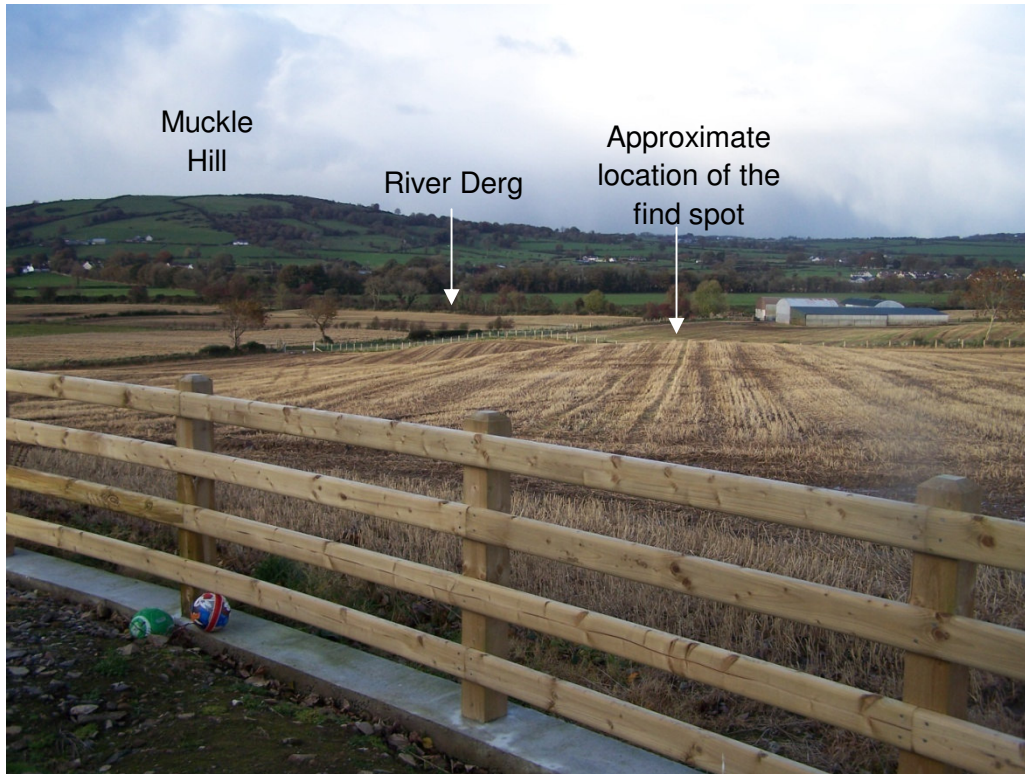
7 Recommendations

- 7.1.1 In light of the negative results from the three techniques employed to investigate the site of the gold find at Castlegore, coupled with the general lack of occupational debris found in the vicinity of the find spot, no further work is recommended. However, it should be noted that short of topsoil stripping the field, the possibility remains that features or artefacts of archaeological significance may have been overlooked.
- 7.1.2 The small assemblage of modern finds recovered from the excavation and metal detector survey does not require specialist analysis and it is recommended that they are disposed of.
- 7.1.3 The only potential archaeological feature detected by the geophysical surveys is the curvilinear anomaly to the east of the find spot detected by the magnetometry survey. This may represent a ditch, path or natural gully and it would be of interest to investigate it at some time in the future. At present this and any other archaeological remains that may exist in the field are not in any immediate threat under the present farming regime.

8 References

- Cahill, M. 2002 Before the Celts: treasures in gold and bronze. In P.F. Wallace and R. Ó Floinn (eds), *Treasures of the National Museum of Ireland*, 86-124. Dublin, Gill & Macmillan.
- Hurl, D. 1995 Killymoon – new light on the Late Bronze Age. *Archaeology Ireland* **9(4)**, 24-27.
- Hurl, D., Nelis, E. and Murray, B. 2005 *Killymoon, County Tyrone* (CAF DSR 37). Unpublished report. Centre for Archaeological Fieldwork, QUB, Belfast. Available online: <http://www.qub.ac.uk/schools/CentreforArchaeologicalFieldworkCAF/Reports/>

PLATES



Plates 1 and 2 General view of the field in which the find of the gold object was made. The photos are taken looking northwest (Plate 1- left) and northeast (Plate 2 – right) from the same location, just north of the Sproule’s house (28.10.08).



Plate 3 View of the undulating and uneven topography of the field from the north-western corner of the grid (some of the grid-square markers are circled). The Sproule's house is located at the right of the photo (06.11.08).



Plate 4 Location of the excavation trench (facing northeast). Some of the grid-square markers are also visible (18.11.08).



Plate 5 The excavation trench showing the plough soil and underlying stony subsoil (facing north-northeast; 19.11.08)



Plate 6 Blackish spread in the adjacent field exposed when the field was ploughed (04.11.08).

FIGURES

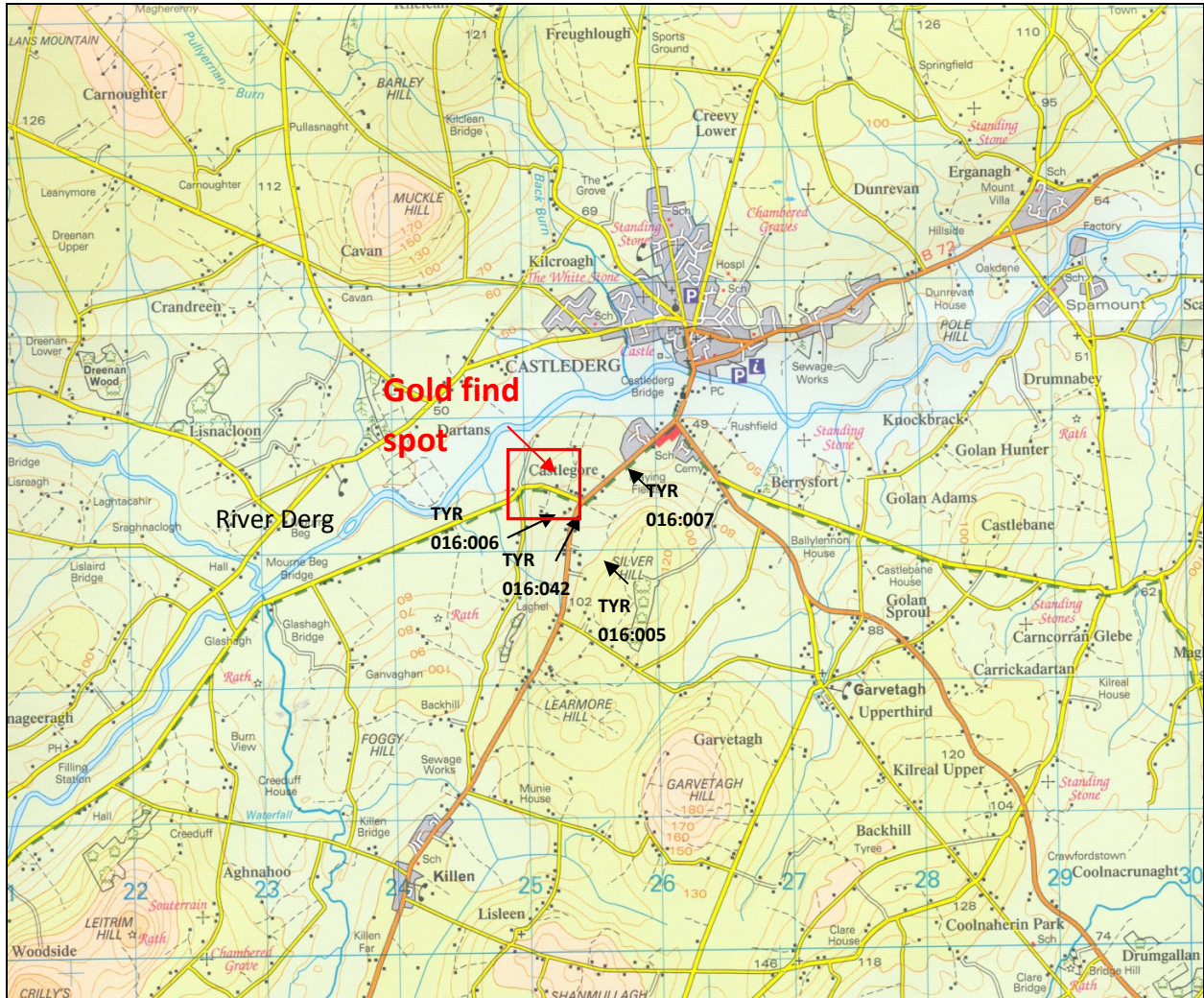
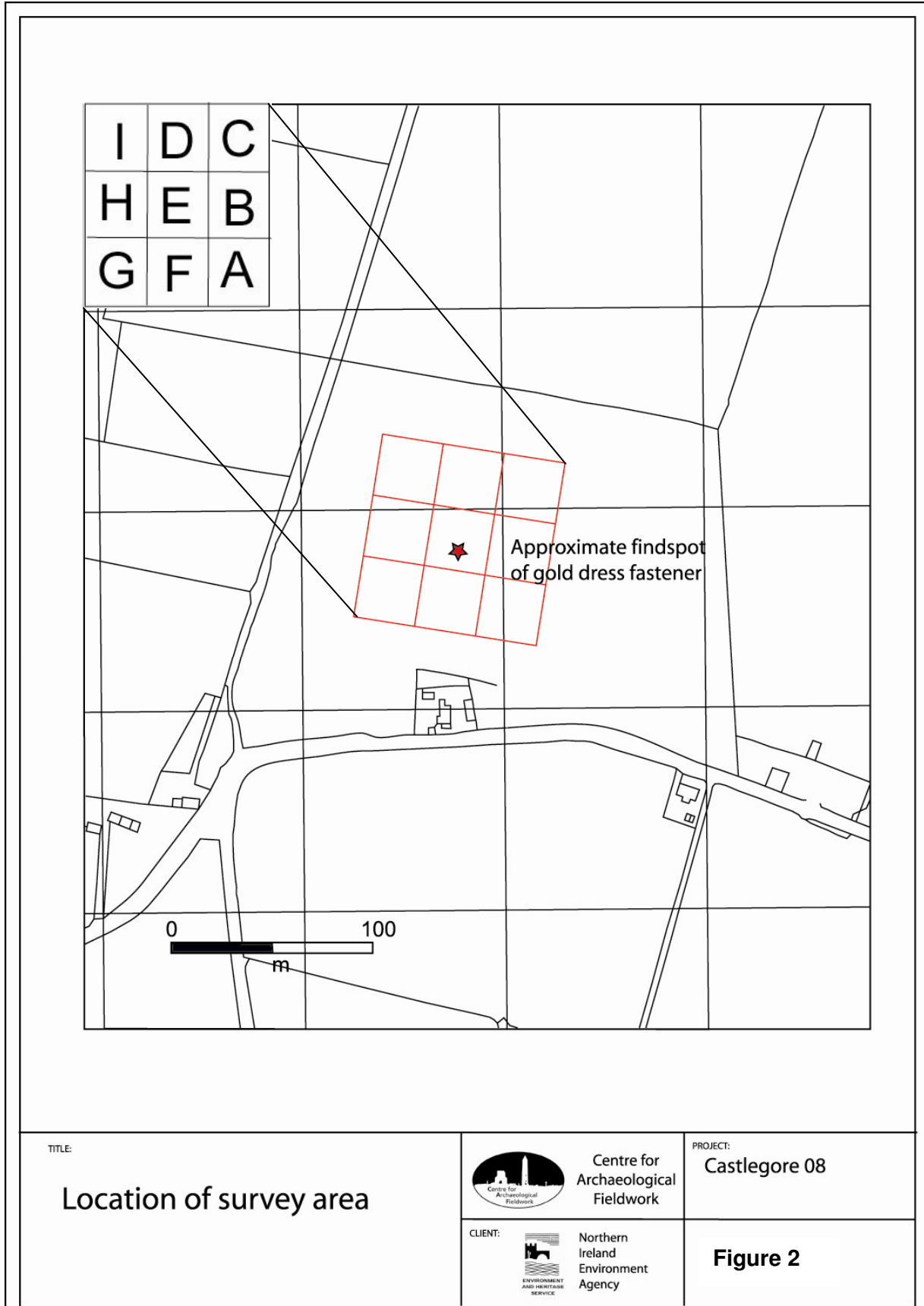


Figure 1 Map showing the approximate location of the find spot of the gold dress fastener in Castlegore townland. The red box outlines the area covered in Figure 2 (below). The River Derg, Muckle Hill and the town of Castlegore and other known archaeological sites in Castlegore townland (approximate locations) are also all shown (extract from OSNI 1:50,000 map, Sheet 12).



TITLE:

Location of survey area



Centre for
Archaeological
Fieldwork

PROJECT:

Castlegore 08

CLIENT:



Northern
Ireland
Environment
Agency

Figure 2

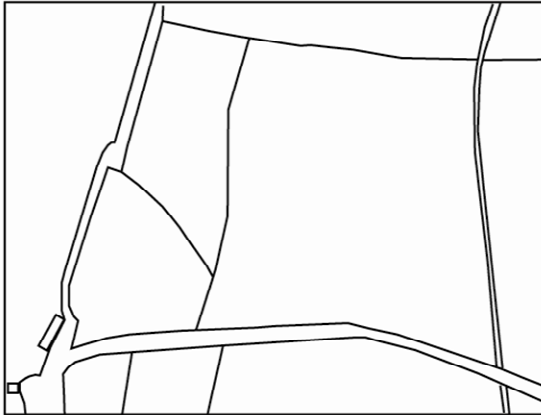


Figure 3a. Tracing of 1833 OS map



Figure 3a. 1905 OS map



Figure 3a. 1983 OS map

TITLE:

OS Representations of field where
dress fastener was found.



Centre for
Archaeological
Fieldwork

CLIENT:

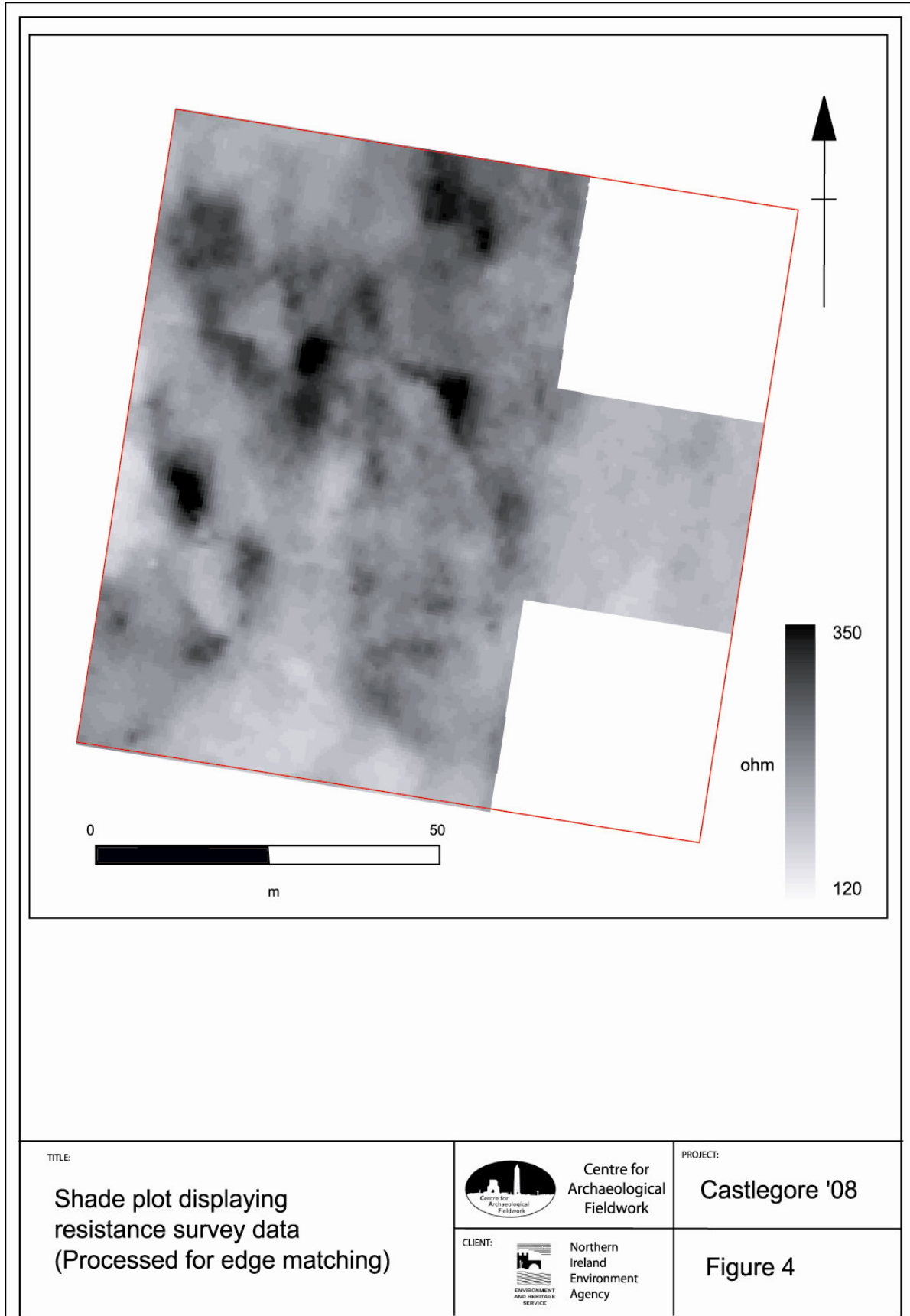


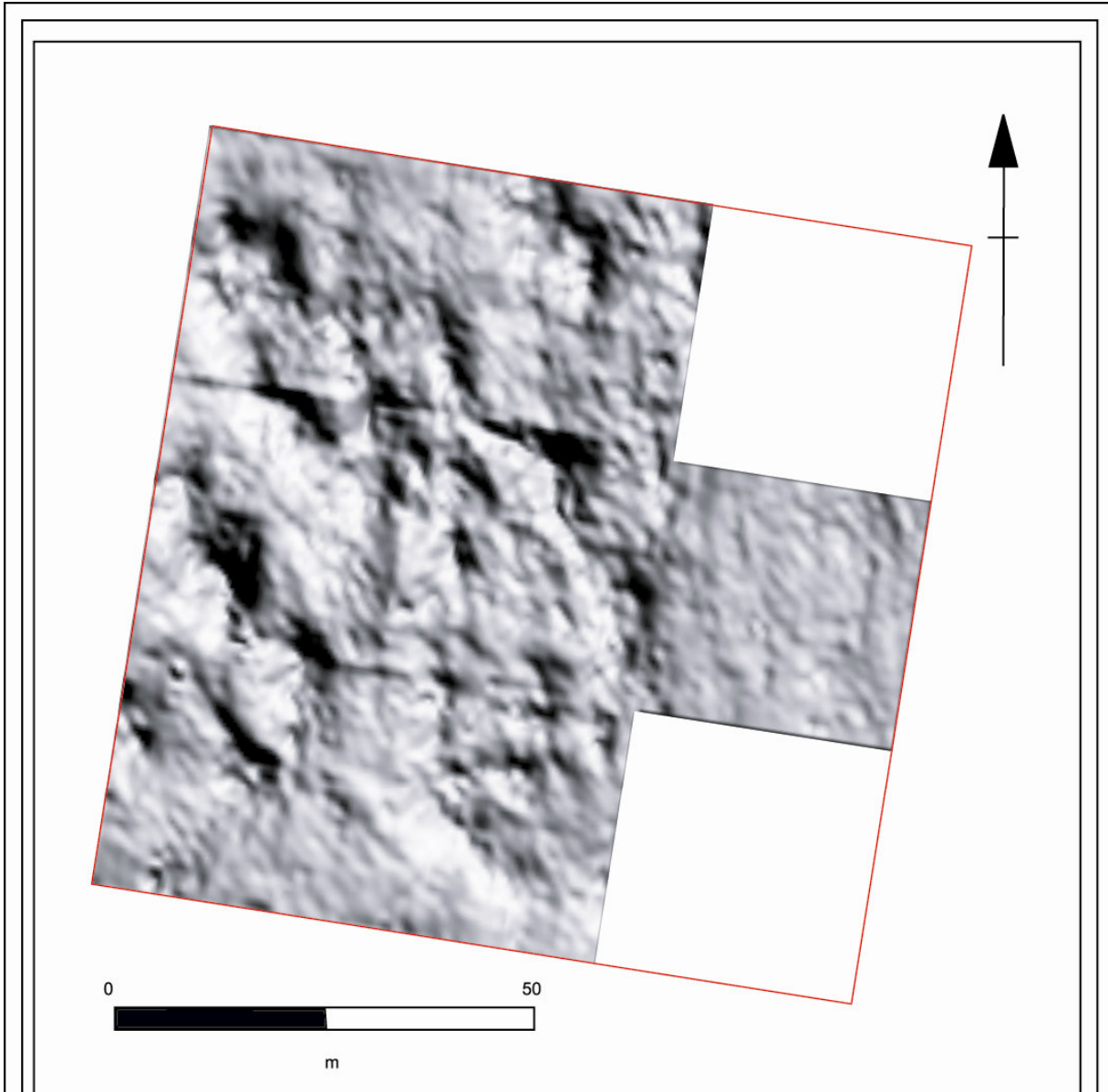
Northern
Ireland
Environment
Agency



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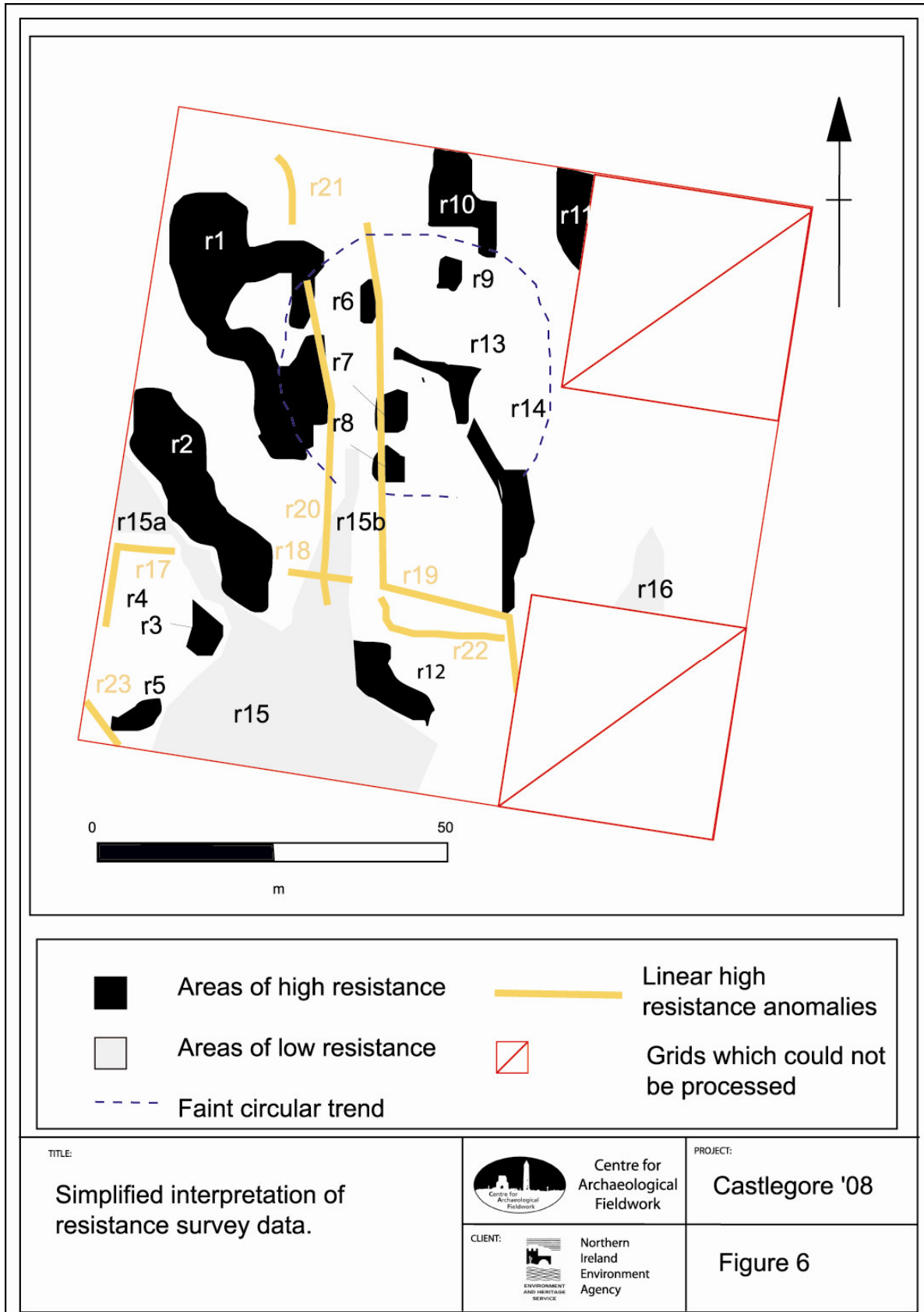
Castlegore '08

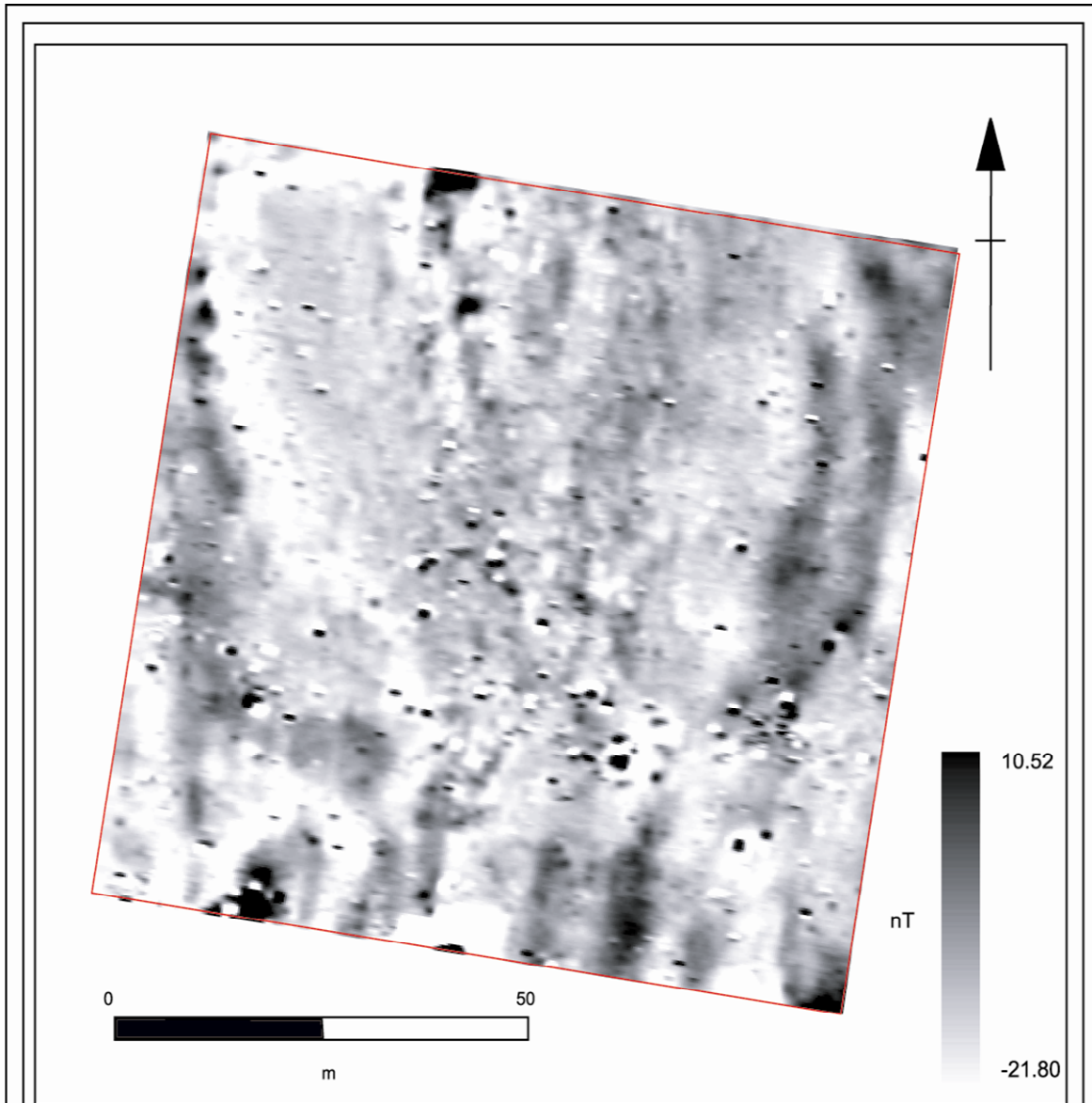
Figure 3





<p>TITLE:</p> <p>Shaded relief plot displaying resistance survey data.</p>	 <p>Centre for Archaeological Fieldwork</p>	<p>PROJECT:</p> <p>Castlegore '08</p>
	<p>CLIENT:</p>  <p>Northern Ireland Environment Agency</p>	<p>Figure 5</p>





TITLE:

Shade plot displaying
magnetometry survey data
(Processed for edge matching).



Centre for
Archaeological
Fieldwork

CLIENT:

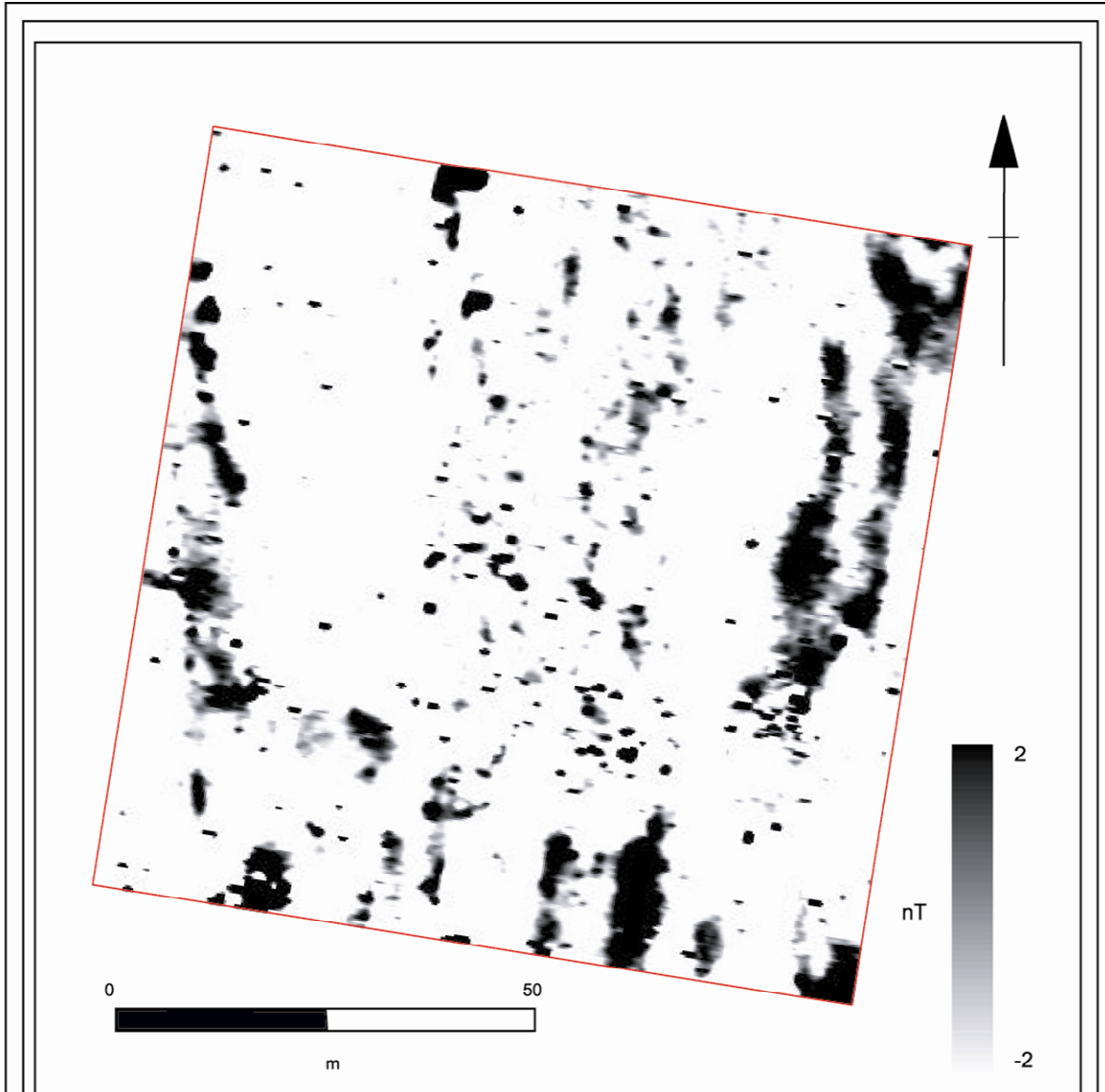




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Ireland
Environment
Agency

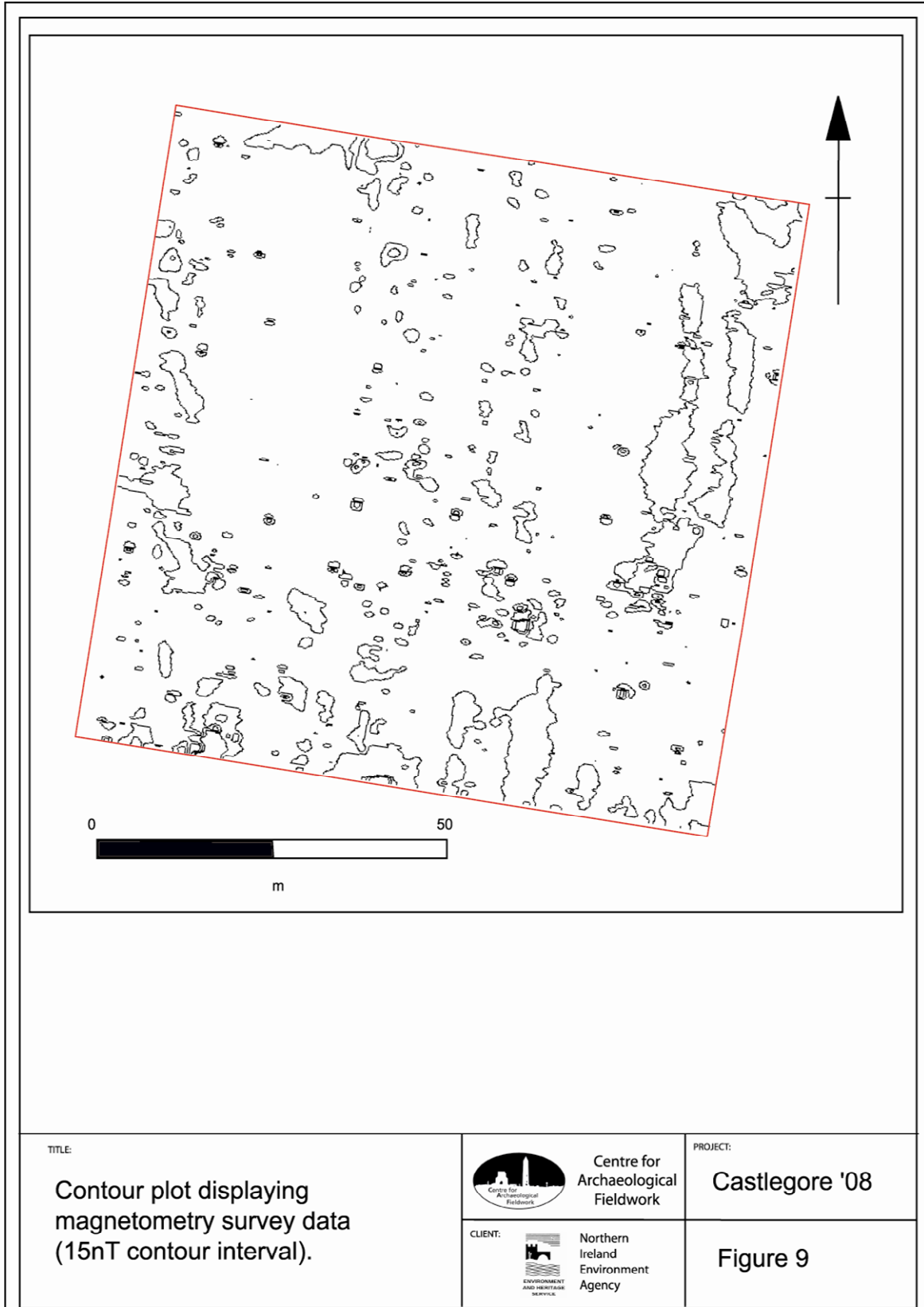
PROJECT:

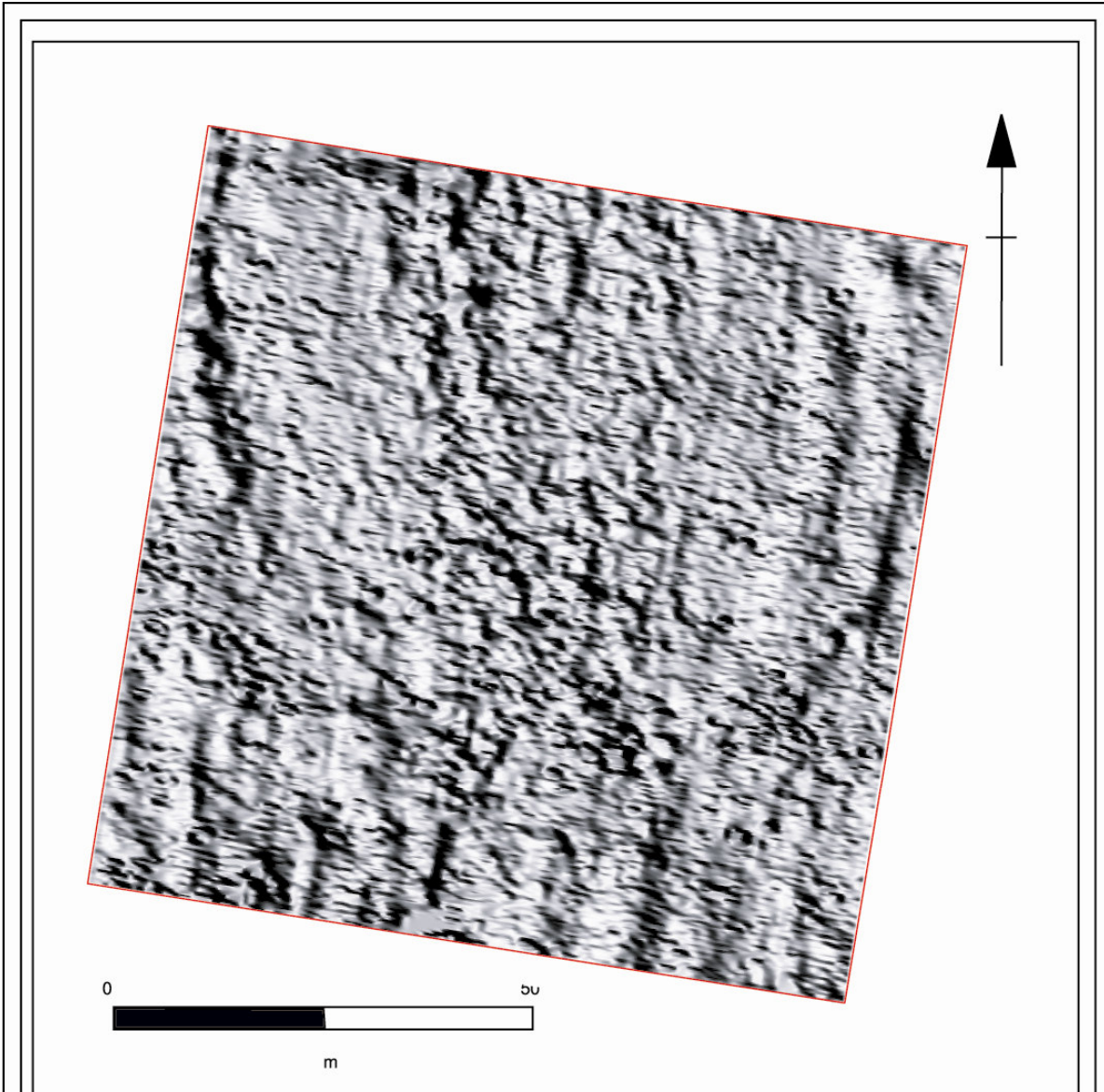
Castlegore '08



Figure 7

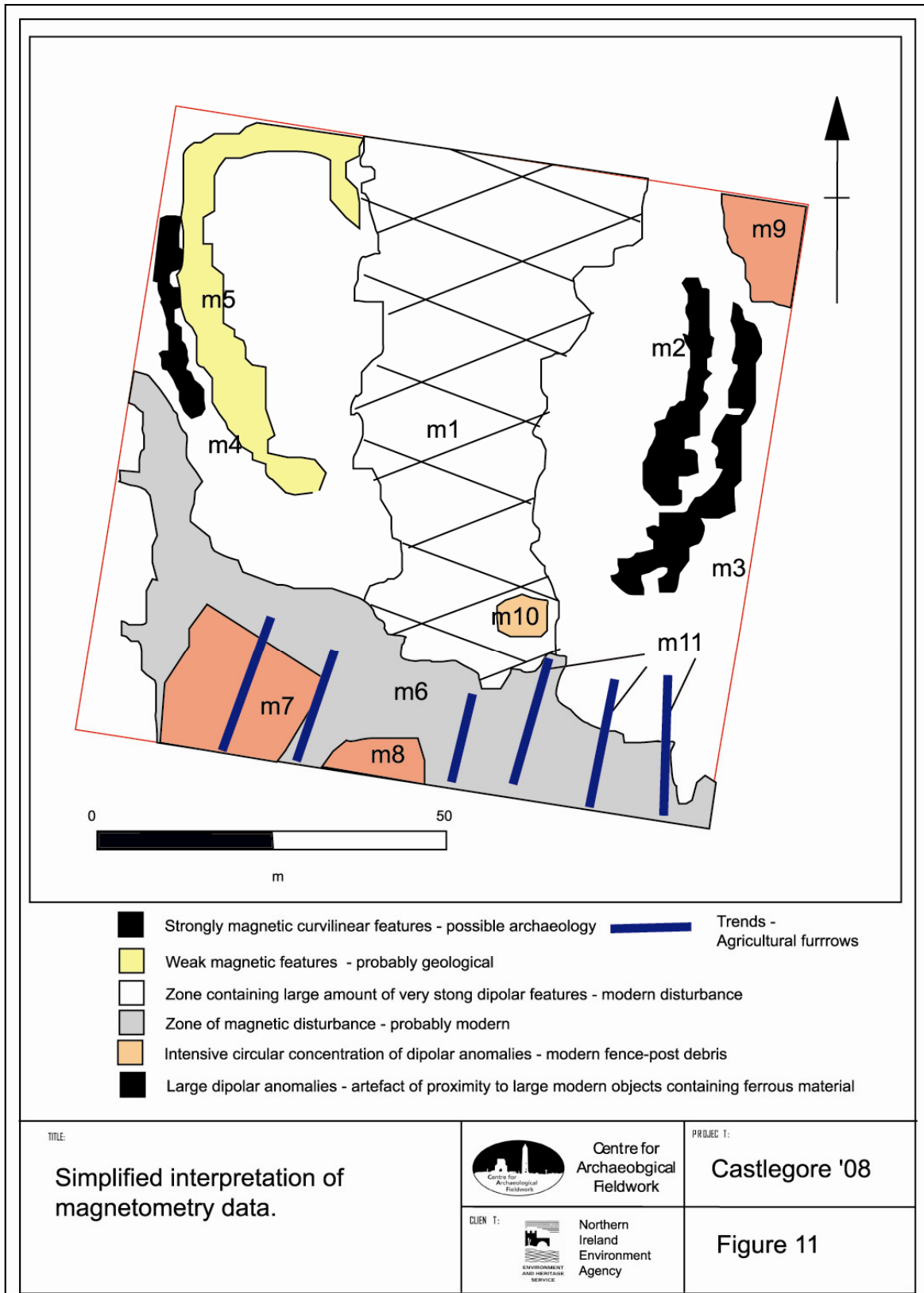


TITLE: Shade plot displaying magnetometry survey data with parameters clipped to enhance detail.	 <p>Centre for Archaeological Fieldwork</p>	PROJECT: Castlegore '08
	CLIENT:  <p>Northern Ireland Environment Agency</p>	Figure 8





<p>TITLE:</p> <p>Shaded relief plot displaying magnetometry survey data.</p>	 <p>Centre for Archaeological Fieldwork</p>	<p>PROJECT:</p> <p>Castlegore '08</p>
	<p>CLIENT:</p>  <p>Northern Ireland Environment Agency</p>	<p>Figure 10</p>



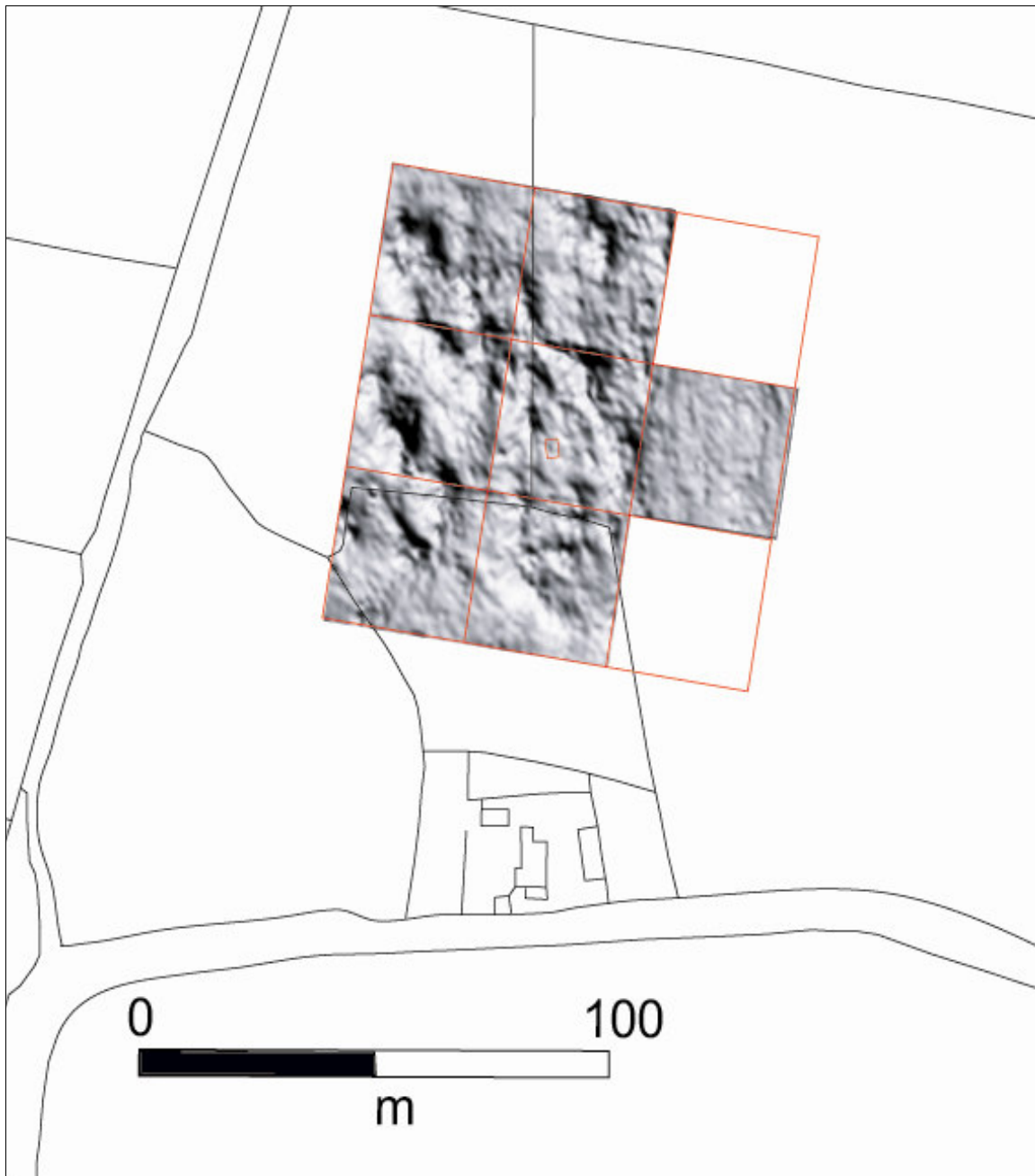


Figure 12 Location of excavation trench.

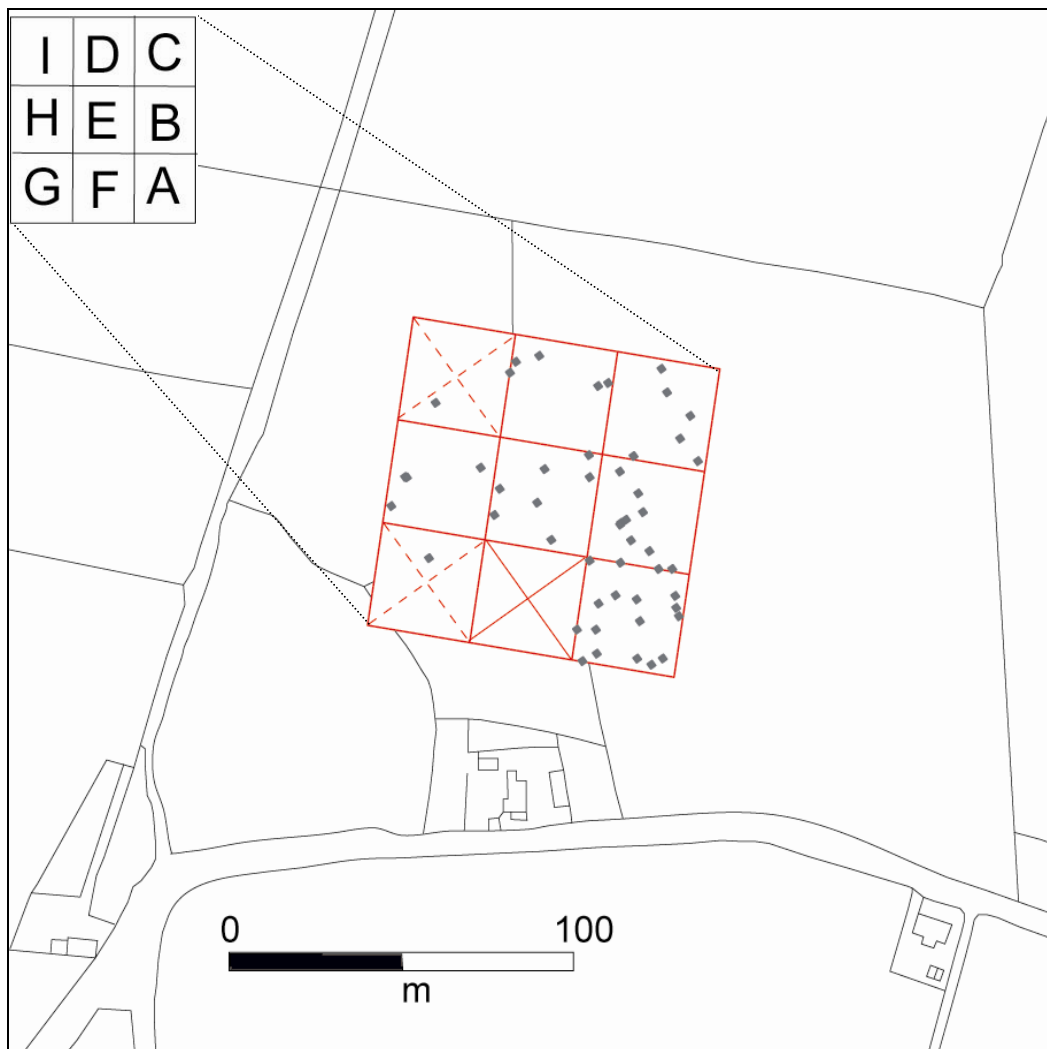


Figure 13 Distribution of metal detector targets within the survey area at Castlegore. Two of the grid-squares (I and G) were traversed only cursorily and grid-square F was not traversed due to recent dumping in the area. The inset shows the grid-square numbering system.

TABLES

Survey Type	Earth Resistance	Magnetometry
<i>Instrumentation:</i>	Geoscan RM 15 and MPX15 Multiplexer	Bartington Grad601-2 fluxgate gradiometer
<i>Probe configuration</i>	Twin probe	<i>Twin Sensor</i>
<i>Probe spacing:</i>	<i>0.5m</i>	<i>1m</i>
<i>Grid-square size:</i>	30m x 30m	30m x 30m
<i>Traverse interval:</i>	1m	<i>1m</i>
<i>Sample Interval:</i>	1m	0.25m
<i>Traverse Pattern:</i>	<i>Zig-zag</i>	<i>Zig-zag</i>
<i>Spatial Accuracy:</i>	Grids set out using TPS 705 series Total Station	Grids set out using TPS 705 series Total Station

Table 1 Details of the equipment and methodology employed in the geophysical surveys at Castlegore.

Anomaly	Description	Interpretation
r1	Amorphous area of high resistance enclosing small, sub-circular low resistance area.	Coincides with a prominent, stepped, north-west facing ridge. Probably bedrock formation with poorly draining hollow on top.
r2	Oblong area of high resistance measuring approximately 35m long and 8m wide.	Coincides with the edge of a ridge. Probable bedrock formation.
r3 – r12	Scattered selection of small high resistance anomalies.	Responses to areas of bedrock with particularly thin soil cover.
r13	Angular area of high resistance forming a possible return or corner. Measures approximately 12.5m east/west by 9m north/south.	Coincides with the eastern edge of a prominent south-east/north-west running ridge and is probably a bedrock formation. The notably sharp definition of the anomaly is probably due to its location at the edge of one of the survey sub-grids – ‘edge effect’. However, the response as it appears is also not inconsistent with buried masonry.
r14	Sub-linear area of high resistance with well-defined, regular edge on north-east side. Measures 30m north/south by a maximum 5m east/west.	Coincides with the eastern edge of a prominent south-east/north-west running ridge. Probably bedrock formation although the response is not inconsistent with buried masonry.
r15	Angular area of low resistance measuring approximately 42m east/west by 20m north/south, although it extends southwards beyond survey area.	This is an area of standing water. The apparent regularity of its shape suggests it is relict of artificial processes unknown, but it is possibly related to drainage or else the digging of a pit or hole. The current landowner indicated that he had recently buried building rubble and debris in this area, and the anomaly might be relict of this activity. The main body of the anomaly also broadly respects an east-west field boundary shown on the 1905 and 1983 OS maps, so it most probably post-dates that boundary in any case.
r15a	Low resistance linear anomaly extending north-west from r15. It is approximately 30m long but extends beyond the survey area on the west side, and is a maximum of 5m wide.	Possibly a drain which the landowner indicated was located in this area.
r15b	Poorly defined low resistance feature extending northwards from r15 for approximately 31m. It is up to 8m wide.	This anomaly is located between two relatively high-resistance linear anomalies (r20 and r22), which coincide with field boundaries. This might have been a ditch or <i>sheugh</i> associated with either boundary.

Table 2 Description and interpretation of earth resistance survey results - to be read in conjunction with Figure 6. Table continues on the next two pages.

Anomaly	Description	Interpretation
r16	Arc of extremely low resistance superimposed on low resistance background.	Possible edge of a negative feature such as a ditch or drain, although not sufficient of the anomaly was exposed to properly determine its nature as it extended into a grid which could not be processed.
r17	Angular high resistance anomaly approximately 2m wide, forming a return or corner in the south-west corner of the survey area.	Corresponds with the system of field boundaries depicted on both the 1905 and 1983 OS maps. Part of the same boundary represented by r18 and r19.
r18	Linear, east/west aligned high resistance anomaly measuring 10m long by 2m wide	Corresponds with the location of a portion of a field boundary depicted on both the 1905 and 1983 OS maps. Part of the same boundary represented by r17 and r19.
r19	High resistance anomaly which extends north/south across the centre of the survey area for 50m before turning sharply to head east-south-east for 20m, where it again turns north-south and extends beyond the southern edge of the survey area. It is approximately 2m wide.	Corresponds with the location of a field boundary depicted on both the 1903 and 1983 OS maps. Part of the same boundary represented by r17 and r18.
r20	Linear high resistance anomaly which extends north/south across the centre of the survey area for 45m. It is 2m wide	Corresponds with the location of a field boundary depicted on the first edition OS map from 1833.
r21	Linear high resistance anomaly to the north of anomaly r20 measuring approximately 9m long by 2m wide.	Although this anomaly does not correspond with the field boundary as shown on the first edition map (See r20), its position, alignment and character suggest it represents a continuation of this boundary not cartographically recorded.
r22	High resistance anomaly which extends 18m east/west before turning sharply to extend approximately 5m north-west. It is 2m wide.	Although this anomaly does not correspond with the field boundary as shown on the 1903 and 1983 maps (See r19), its position, alignment and character suggest it represents a continuation of this boundary not cartographically recorded.

Table 2 continued.

Anomaly	Description	Interpretation
r23	High resistance anomaly, approximately 2-3m wide, at the extreme south-west corner of the survey area which extends beyond both the southern and western edges of the survey area.	Corresponds with the location of a field boundary depicted on the 1833, 1903 and 1983 editions of the OS map.
r24	Faint circular trend (diameter approximately 40m) at the centre of the survey area.	Poor definition of this anomaly hampers proper interpretation. Only visible in Fig 4. This might merely be an impression created by the boundaries between areas of differing resistance levels. Alternatively, it might be the faint remnants of a now disappeared enclosure at the centre of the field.

Table 2 continued.

Anomaly	Description	Interpretation
m1	Rectilinear area of magnetic disturbance at the centre of the survey area.	This area contains a significant quantity of small dipolar anomalies representing ferrous waste. The delineation of the anomaly broadly correspond with a field shown on the 1903 OS map and the disturbance is probably due to activity undertaken within the confines of that field when it was fenced off.
m2	Slightly curvilinear, positive anomaly at the east of the survey area, measuring approximately 30m long by 7m wide.	Possibly represents a ditch, pathway or natural gully. The relatively strong signal suggests that the anomaly is comprised or filled by different material to the surrounding soil, or has been magnetically enhanced, for example by burning.
m3	Curvilinear, positive anomaly immediately to the east of m2, measuring approximately 45m long by 6m wide.	Possibly represents a ditch, pathway or natural gully. The relatively strong signal suggests that the anomaly is comprised or filled by different material to the surrounding soil, or has been magnetically enhanced, for example by burning.
m4	Slightly curvilinear, positive anomaly at the west of the survey area, measuring approximately 30m long by 4m wide.	Possibly represents a ditch, pathway or natural gully. The relatively strong signal suggests that the anomaly is comprised or filled by different material to the surrounding soil, or has been magnetically enhanced, for example by burning. This anomaly coincides with the westernmost ridge in the survey area and might be geological.
m5	Negative curvilinear anomaly of reduced magnetic activity. Maximum length is 52m (north-west/south-east) and width of 8m..	This anomaly appears to coincide with the base of the stepped ridges which characterise the western side of the survey area. It exhibits a lower magnetic response than the surrounding soil and might be a response to non-magnetic geology in this area. Alternatively, it broadly follows the line of the anomaly m4, and might be related to this anomaly which exhibited a positive response.
m6	Zone of intensive magnetic disturbance at the south of the survey area.	The main body of the anomaly broadly respects an east-west field boundary shown on the 1905 and 1983 OS maps, so the activity represented by the zone probably post-dates the boundary. The area contains a significant amount of ferrous material together with two large dipolar anomalies (m7 and m8) which are probably due to a combination of the recent dumping of debris in this area and proximity of the survey area to the modern house and associated amenities.
m7	Large dipolar anomaly measuring 20m north/south by 18m east/west.	Probably a response to the proximity of the survey to the ferrous components of the modern house, fence and cars.

Table 3 Description and interpretation of magnetometry survey results - to be read in conjunction with Figure 11. Table continues on next page.

Anomaly	Description	Interpretation
m8	Dipolar anomaly measuring 5m north/south by 15m east/west.	Probably a response to the proximity of the survey to the ferrous components of the modern house, fence and cars.
m9	Dipolar anomaly measuring 18m north/south by 10m east/west.	Probable response to parked farm vehicle observed 20m to the north-east of the survey when this section was being surveyed.
m10	Circular arrangement of strong dipolar anomalies (Diameter approximately 6m).	Coincides with a junction in two fences depicted on the 1905 OS and is probably due to fallen debris from the fences lying in the topsoil.
m11	Series of north-south linear trends at south of survey area.	These are largely masked by the area of disturbance m5, but appear to respect the east/west field boundary shown on the 1905 and 1983 OS maps. They are probably residual of agricultural activity in the southern segment of the field.

Table 3 continued.

Grid-Sq	Find No.	X	Y	Metal Object
A	101	60.1	8.8	Corroded iron object
A	102	60.8	29	zinc tube
A	103	63.01	0.1	Corroded iron object
A	104	65.52	9.7	Alu/steel can
A	105	65.18	17.24	Corroded iron object
A	106	66.8	2.92	Zinc[?] tube
A	107	69.7	20.4	metal spoon (fragment of)
A	108	69.7	29.9	Corroded iron object
A	109	75.91	20.25	Alu/steel can
A	110	77.74	14.22	alu (?) sheet (crumpled)
A	111	78.58	3.45	Corroded iron object
A	112	80.88	29.95	Corroded iron object
A	113	82.91	2.4	length of copper piping
A	114	87.57	19.76	Corroded iron object
A	115	86.8	23.1	Corroded iron object (nail?)
A	116	88.7	17.5	Corroded iron object
A	117	85.9	4.72	Alu/steel can
B	201	68.2	41.3	steel tooth of combine harvester
B	202	65.67	55.78	Corroded iron object
B	203	68	40.7	alu drain spouting
B	204	69.48	42.4	belt loop?
B	205	71.85	50.45	Corroded iron object
B	206	74	45.36	Alu/steel lid
B	207	71.77	36.75	Corroded iron object
B	208	77.5	34.6	Corroded iron object (nail?)
B	209	84.8	30.63	<i>unresolved</i>
C	301	68.92	60.85	Corroded iron object (strap)
C	302	73.2	87	bolt
C	303	75.8	80.55	Corroded iron object (nail?)
C	304	81.5	68.05	Alu/steel can
C	305	83.47	75	Corroded iron object
C	306	87.56	62.5	Alu/steel can
D	401	31.24	82	Corroded iron object (screw?)
D	402	37.66	84.8	Alu/steel can
D	403	55.79	79.05	embossed military button

Table 4 List of finds, grid-squares and co-ordinates for the metal detector targets. The origin of the grid (0, 0) was the south-western corner of grid-square G. Table continues on the next page. 'Alu' = aluminium.

Grid-Sq	Find No.	X	Y	Metal Object
D	404	58.52	80.4	Corroded iron object
E	501	31.59	37.4	Alu/steel can
E	502	32	45.1	belt buckle
E	503	48.93	33.07	Corroded iron object
E	504	43.3	42.95	alu drain spouting
E	505	44	52.85	Alu/steel can
E	506	57.25	52.73	Corroded iron object
E	507	56.1	58.97	Corroded iron object
G	701	14.7	22	Alu/steel can
H	601	1.7	34.98	alu sheet (crumpled)
H	602	4.4	43.9	alu sheet (crumpled)
H	603	4.95	43.87	Alu/steel can
H	604	25.65	50.2	Alu/steel can
I	801	10	66.45	Corroded iron object (nail?)
I	802	30	78.6	Corroded iron object

Table 4 continued.