Archaeology Shetland

Uyea Geophysics Survey: Internal Report V2.0

Valerie Ward, June 2026

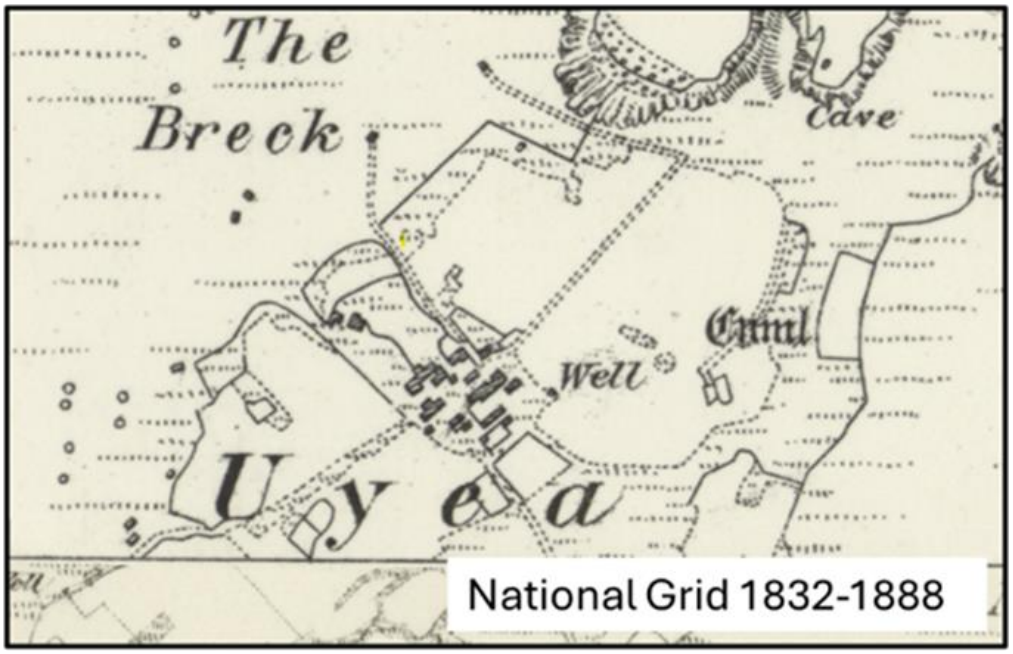


Figure 1: Circular feature marked Cuml at Uyea, Northmavine on the First edition OS National Grid

Updates from V1.0

- *(i) Burn of Monius reclassification status amended*
- *(ii) Cuml not referred to as Cumulus*
- *(iii) Cuml linked to kuml and cummel from Jackobson and Graham Shetland dictionaries.*
- *(iv) Figure numbers corrected.*
- *(v) Updated image references*

EXECUTIVE SUMMARY

On the 6th of June 2026 a group of volunteers from Archaeology Shetland conducted a photogrammetry and geophysical survey at Uyea, Northmavine. The target was a circa 15m diameter circular feature denoted as Cuml on the First Edition National Grid series map. Cuml is a term unique to Shetland used by the Ordinance Survey (OS) to represent prehistoric sites, often first described as piles of stones or cairns and thought to be the remains of Picts houses (OS name Book (1845–1878)(Figure 1). However, many of these Shetland Cuml sites have since been re-evaluated and subsequently reclassified as Neolithic /Bronze age (Ne/BA) houses or farms or as chambered cairns. It has been proposed by S. Jennings (2021) that due to a gap in the patterns of Iron Age (IA) habitation in the area it is also possible that this previously recorded pile of stones could be the remains of an Atlantic roundhouse. The site has subsequently been removed from the landscape and is no longer visible on the ground or on satellite imagery. During the survey part of a large trough quern was found being reused in a wall used as a field subdivision. Electrical Resistance and Gradiometry surveys were conducted to assess if any buried remnants of the original feature remain and if so, what they may indicate. The bedrock geology is composed of metamorphosed igneous rocks subsequently intruded by later igneous dykes and is not ideal for detecting small magnetic signatures associated with archaeological features. As such it was difficult to stabilise the sensors in these magnetically noisy conditions. However, the target area appears to be relatively magnetically quiet with only one small anomaly close to the centre of the target area. The ER survey detected a high-resistance broadly circular 12-14m diameter anomaly at the estimated location of the target Cuml. This anomaly is consistent with a circular stone-rich area most likely the remains of a prehistoric structure, although it could also be caused by quarrying into the bedrock. Given the size and location of the site and the proximity to a broken trough quern, it is suggested that the Uyea Cuml site is likely to be the remains of a Ne/BA house. This is similar to other reclassifications of Cuml sites in the area. However, the possibility that it is a cairn or roundhouse is not ruled out.

In addition, learning points regarding the organisation and running of a volunteer archaeology survey have been identified and noted.

Table of Contents

EXECUTIVE SUMMARY 2

INTRODUCTION AND AIMS OF THE SURVEY 4

HISTORIC MAPS 6

GOOGLE EARTH SATELLITE IMAGES 7

SMR RECORD 7

CUML RECLASSIFICATION 8

EXAMPLES OF PREHISTORIC STONE STRUCTURES IN SHETLAND 8

GROUND SURVEY 11

BEDROCK AND DRIFT GEOLOGY 13

GEOPHYSICS SURVEY 14

SURVEY METHODS 14

EXAMPLES OF GEOPHYSICAL SURVEYS OVER PREHISTORIC STRUCTURES IN SHETLAND 16

SURVEY CONDITIONS 18

SURVEY AREA 19

SURVEY GRIDS 20

SURVEY PARAMETERS 21

ELECTRICAL RESISTANCE SURVEY SETTINGS 21
GRADIOMETER SURVEY SETTINGS 22

RESULTS 23

RESISTIVITY RAW DATA 23
GRADIOMETER RAW DATA 26

GEOPHYSICS INTERPRETATION 29

NON-ARCHAEOLOGY 29
ARCHAEOLOGY 30

INTERPRETATION DISCUSSION 31

CONCLUSIONS 33

RECOMMENDATIONS 34

REFERENCES 35

APPENDIX 1: RECLASSIFIED SHETLAND CUML SITES (RCAHMS) 37

INTRODUCTION AND AIMS OF THE SURVEY

An archaeological feature recorded as Cuml on the OS National Grid maps (1878-1913) and located at Uyea, Northmavine forms the focus of this survey (Figure 1). Cuml is a term unique to Shetland captured by the OS map makers in their name book and used to represent prehistoric sites mainly described as large piles of stone or cairns thought to be the remains of 'Picts Houses' (OS name book)(Figure 2). The application of the term Cuml is debated but it has been suggested that it refers to an old Shetland word kuml (pers com B. Smith to S. Jennings 12/10/26). Cummel or kuml described in J. Grahams Shetland Dictionary (2009) and Jacobsons, Etymological Dictionary of the Norn Language in Shetland p488 respectively, both refer to turning a hollow vessel upside down. Perhaps then Cuml refers to a hollow mound? The change in attribution of the Cuml sites in Shetland is discussed in more detail in section 6.0 Cuml reclassification and examples of prehistoric stone structures.

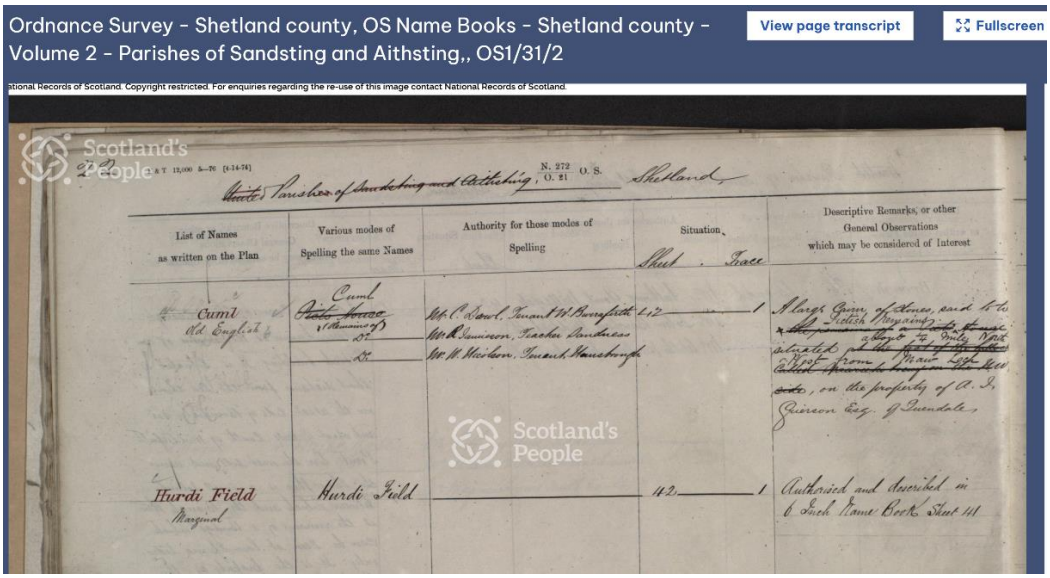


Figure 2: Example of Cuml recorded in the Ordnance Survey Shetland County OS name Book

Desktop investigations carried out by S Jennings (2021) showed that Uyea, derives its name from Old Norn for island (Jakobsen 1897: 100). It seems likely that its name is formed in association with the nearby Holm of Uyea which is now connected by a short sandbar to the mainland. Uyea was a moderately sized community according to the 1882 six-inch OS map consisting of at least six roofed houses with several more unroofed by this time. How far back in time this community stretches is unknown, but a possible

longhouse is associated with this collection of houses, suggesting that the site has been occupied since at least the Viking /Norse era. The positive attributes of this site location; its proximity to two shorelines, good beach access with nousts and relatively good quality soil make this recorded circular structure a good candidate to be the remains of a prehistoric house (Jennings 2021).

Based on the OS maps this structure is estimated to be around 15m in diameter. The site continued to be recorded on OS map updates until 1944 but was changed to *Cairn (site of)* on the 1944-1975 National grid map published for Shetland in 1971. The feature has since been removed from both the landscape and the National grid maps. The feature is not visible in the modern landscape nor on the limited historical satellite images currently available. As this feature has been removed down to at least surface level it is hoped that there may be buried remnants-most likely stone walls- that can be detected using geophysical methods.

The **aims** of the geophysical surveying are to image the subsurface in the area marked as Cumul in order to assess if there are any remains of a structure. If a structure is detected can anything be said about the nature of the structure? Two surveys techniques were available to the group (i) Electrical Resistance measurements using a TR meter (ER) and (ii) Gradiometry using a Bartington 601 Dual Sensor Gradiometer (Gradiometer survey). ER is ideally suited to detecting stone walls while the Gradiometer survey is best at detecting hearths, pits and/or ditches and ferrous objects (EAC Guidelines 2).

A review of historical maps and Google Earth satellite images was made to help identify where to survey .

HISTORIC MAPS

The OS National Grid maps show historical changes in the recording of the site (Figure 3). In 1888 the site shows as a circular feature in between a WNW-ESE trending linear feature and a pair of rectilinear sheepfolds. This changes c.1909 to a record of only the circular Cuml feature now straddling a field boundary. By 1971 this feature is reduced to a Cairn (site of) within the modern field boundary. The target circular Cuml feature is consistently located relative to a set of sheepfolds to the SE and a well to the SW, however the field boundaries are inconsistent between historical maps. The two sheepfolds also change shape slightly between the various early maps but are generally consistent through time. The short WNW-ENE trending linear feature next to the site as shown on the First Edition maps is likely the same collection of large, rounded boulders visible on the GE satellite images (Figure 4) and shown on ground photos (Figure 6).

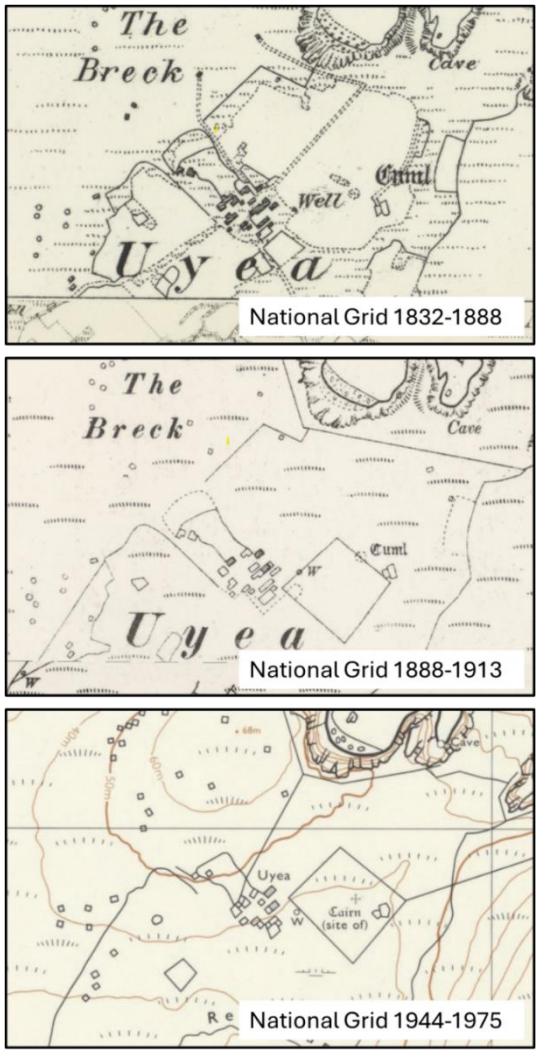


Figure 3: the OS National Grid maps show historical changes in the recording of the site , from a long and circle feature in 1988, to only the circular feature around 1900 and reduced to a cairn (site of) by 1975.

GOOGLE EARTH SATELLITE IMAGES

Only four historic Google Earth (GE) satellite images are currently available over Uyea. The earliest GE image dated 31121985 (DDMMYYYY) is of very poor quality and is therefore unusable. The other three GE satellite images were taken in May (08052008), April (14042019) and August (07082023) and show that the land-use is mainly sheep pasture (Figure 4). There is no indication of crop or soil marks from the current set of satellite images that would suggest the presence of a buried stone structure in the target area, which is in the centre of the images and to the NW of the two sheepfolds.



Figure 4: Satellite images showing two sheepfolds in the SW, a short WNW-ESE wall and a longer discontinuous wall running NW-SE. The target area is between the short wall and the sheepfolds (images Google Earth Pro 2026)

There is a substantial shift of 28m in the relative lateral positions of the three GE satellite images. This has an impact both on planning the survey grid and when comparing the results within a GIS system. This is discussed in the Survey set up and results sections.

SMR RECORD

The SMR record is dominated by historical settlement structures: a head dyke, field systems, planticrubs and enclosures. There is also a record of a possible longhouse to the SW of the well (Figure 5).



Figure 5: SMR record overlain on first Edition OS map at Uyea, Northmavine (images from Pastmap)

CUML RECLASSIFICATION

There are numerous examples of Cuml or 'site of Cuml' recorded on early editions of the OS maps both in the immediate and wider area of Shetland. In the intervening years many of the sites have been reclassified due to additional archaeological investigation or re-evaluated at site visits. Two Cuml sites, both in Northmavine and within 8km of our Uyea target site are Pundswater, Mangaster (HU 32443 71251) and Burn of Monius, Ronas Hill (HU 28778 84465). Both sites have since been reclassified. Pundswater is considered one of the best examples of a 'heel shaped' cairn, has a trilobate inner chamber and extends to c.16m long (Figure 7). Burn of Monius includes three poorly preserved structures, one of which may be a Ne/BA homestead. (RCAHMS 1969). Although of a similar overall dimension to the Uyea Cuml, both of these sites are located in more elevated locations. There are at least an additional 24 sites previously recorded as Cuml located in the north and west of mainland Shetland in the parishes of Aithsting, Delting, Northmavine, Sandsting, Walls and Sandness. Although not an exhaustive list it is clear from this selection that the Cuml sites have been predominantly reclassified as either a cairn (29%) or Ne/BA house (46%) while in 20% of cases the site remains too uncertain to classify from surface inspection alone (Figure 6, Appendix 1).

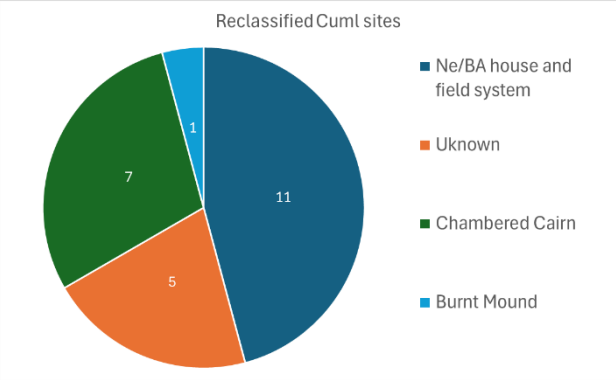


Figure 6: Reclassified Cuml sites in the West and North of Mainland Shetland (See Appendix 1 for data).

EXAMPLES OF PREHISTORIC STONE STRUCTURES IN SHETLAND

Prehistoric structures in Shetland are generally round or oval in shape. A brief review of the range and dimensions of known structures is given here with a view to providing examples to aid the interpolation of the geophysical survey results. A wide variety of burial cairns occur across Shetland as shown by the selection of plans in Figure 7 (after Henshall (1963)). Henshall differentiates chambered tombs into cairns (heel-shaped, round and square), round passage graves and a single possible (but doubtful) long cairn.

Although there are a few examples of larger cairns, the Shetland cairns are generally small, rarely exceeding 12m in length. They are commonly situated in elevated positions close to fertile valleys and with entrances oriented towards the SE. The largest example of a Shetland heel-shaped cairn is Gallow Hill, Unst, (SM7667) which measures 15m in length and 10.5m from front to back. It is also situated in an elevated position in the landscape. The nearest recorded cairn to our target site is the Beorgs of Uyea, approximately two kilometres to the south. Unfortunately, very little other than the unroofed passage and chamber now survive (Figure 7).

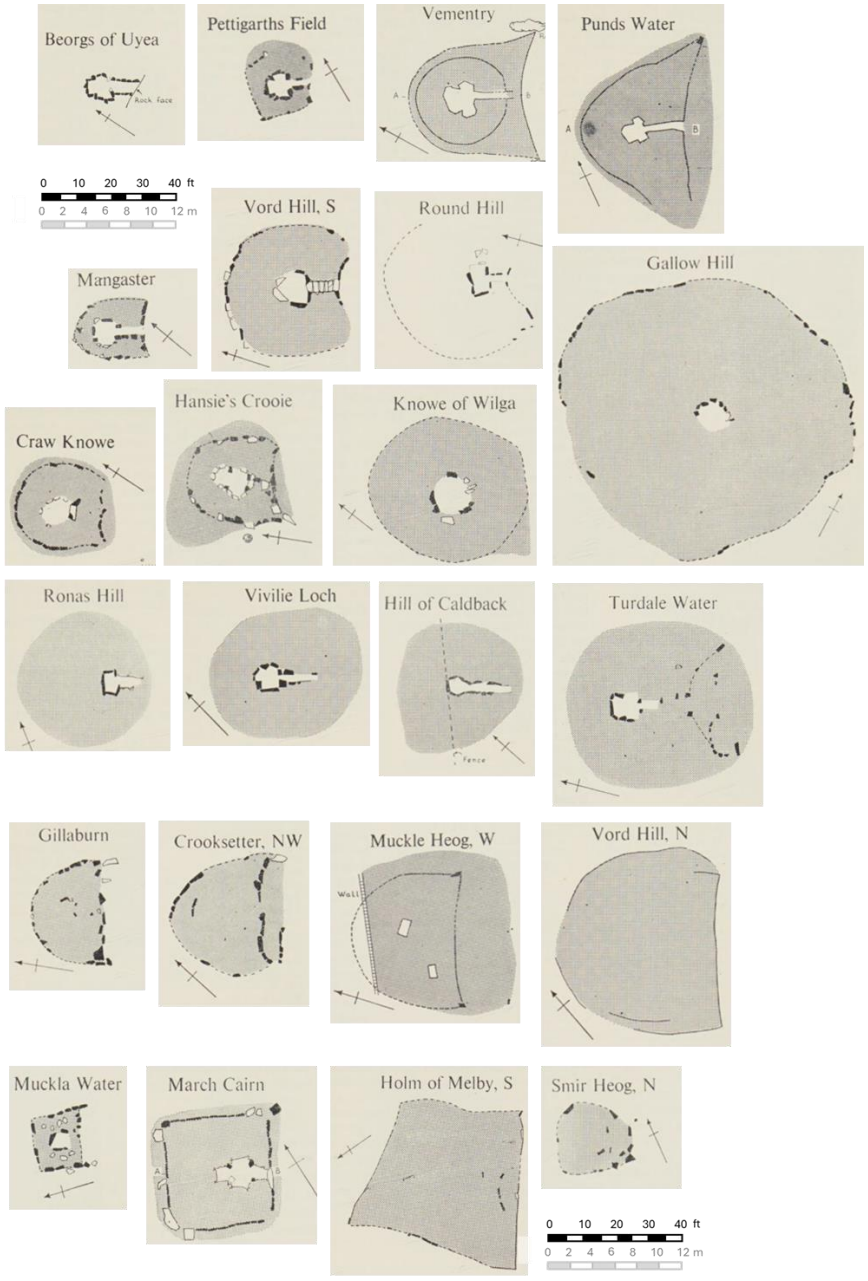


Figure 7: A selection of Shetland cairns from Henshall (1963) showing size and shape variations.

Other examples of early prehistoric sites in Shetland include Neolithic/Bronze age farms and houses such as Punds Water II, House No.1 Gruting school and Standing stones of Yoxie (Figure 8). These structures are generally ovoid in shape and have thick walls (2-4m). Stanydale is included to illustrate the upper size variation in these early buildings.

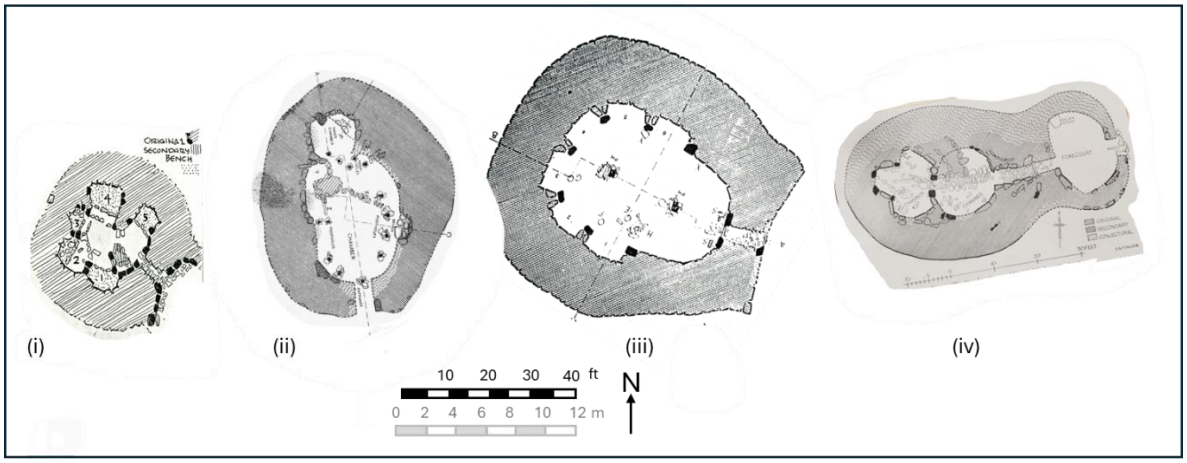
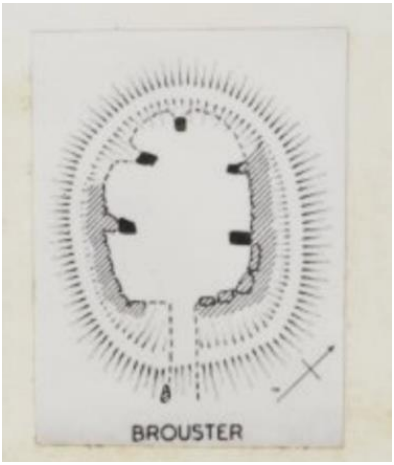


Figure 8: Ne/BA houses (i) Punds Water II (Calder 1968) (ii) House No.1 Gruting school, (Calder 1955/56, SC575743 ©Courtesy of HES (Illustrations from the 'Proceedings of the Society of Antiquaries of Scotland')) (iii) Stanydale, Crown Copyright: HES (Records of the Ordnance Survey Archaeology Division, Edinburgh, Scotland) (iv) Standing stones of Yoxie (Calder 1960/61, SC2338736 ©Crown Copyright: HES (Records of the Ordnance Survey Archaeology Division))



The Scord of Brouster, Walls and Sandness (HU256 515) is an example of a Bronze age farmstead, consisting of three oval houses set within a large field enclosure. Excavation carried out in the 1970s discovered the largest house (c.13m x 10m) contained a central hearth surrounded by stone-built cells built into the outer-wall. The outer-wall varies in thickness from 1-3m thick (Figure 9).

Figure 9: Scord of Brouster, Sandsting (HU256 515). Plan from Current Archaeology 1979, VI, No.65A. SC2336850 ©Crown Copyright: HES (Records of the Ordnance Survey Archaeology Division)

Prehistoric houses continue to be circular through to the end of the Iron Age in Shetland. Examples of the many various roundhouse types can be seen at Old Scatness (Figure 10). The multi-storeyed double walled brochs of the early to mid-Iron Age in Shetland vary in diameter between 15-20m averaging around 17m. The broch at Mousa, the best preserved of the Shetland broches is one of the smallest at only 15m across, while Old

Scatness Broch stretches to 18m across. The wheelhouse structures of the mid Iron age (shown in blue) can also be quite large but have much thinner walls than the brochs. Later Iron Age Pictish buildings (shown in green) are smaller still with corbelled cells (Figure 10).

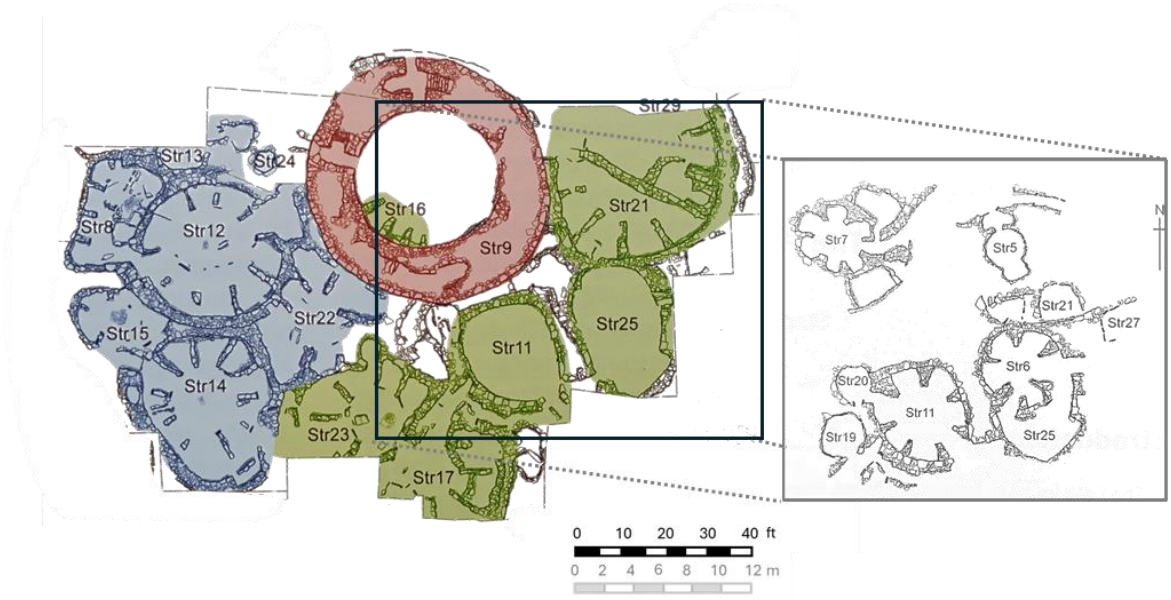


Figure 10: Layout of Iron age buildings at Old Scatness , Broch period (red), Mid Iron Age (blue), Late Iron Age settlement (images after Dockrill et al 2015)

The question for this survey is given that the various prehistoric circular structures in Shetland have distinctive styles but overlap in size can their differences be discernible from each other using the geophysics techniques being employed. Also given that the structure may have been almost completely removed, robbed out, destroyed or covered in collapse how much of the original structure will be left to decipher?

GROUND SURVEY

There are quite a few large boulders scattered in the general area of interest. They occur in small groupings embedded in the soil with voids visible while some form linear structures which act as walls or boundaries (Figure 11). The long NW-SE discontinuous wall marks a boundary in the change of slope and is consistent with the current orientation and placing of the southern wall of the sheep fold. The sheep fold has fallen

into disrepair and is of generally poor construction. In places it has been added to with small cobbles from field clearance (Figure 12). The age of the sheepfold is uncertain although it in part matches with the shape recorded on the OS 1888. One of the large boulders in the NW-SE oriented wall has a deep concave hollow which has been interpreted as a broken a trough quern (Figure 12). This type of quern was used from the Neolithic to early Iron Age and indicates likely occupation in the nearby area.

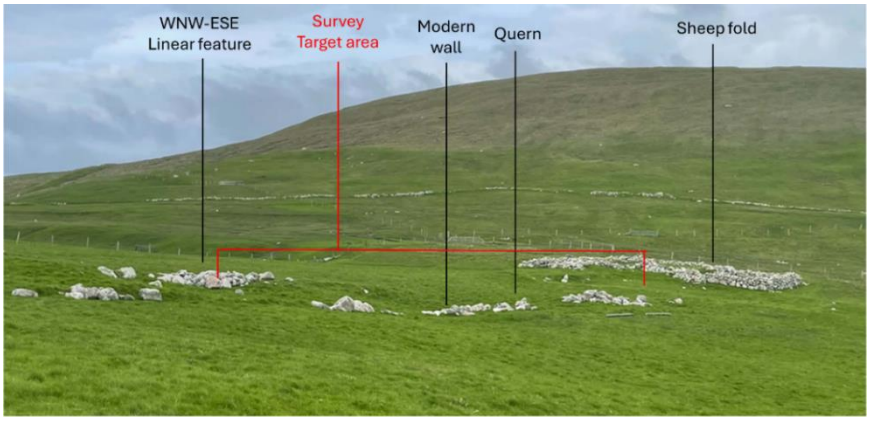


Figure 11: Ground photo of stone structures in and around the survey target area. Photo taken looking East (image Valerie Ward 2026)



Figure 12: Left image taken looking West shows the sheepfold of poor construction with additional small stones from clearance. Right image looking west shows possible trough quern reused in linear wall feature (insert). (images Valerie Ward 2026)

The ground surface slopes gently down to the SE with the discontinuous NW-SE trending wall marking a steeper break in slope. There is also a cut out platform to the immediate NW of the sheepfolds as can be seen marked by a bank and stones.

BEDROCK AND DRIFT GEOLOGY

The bedrock geology in Uyea is extremely ancient ranging from 541-4000Mya and consists of Wilig Geos felsic orthogneiss (Figure 13). This rock is formed from a silica-rich magma or lava that has been altered through metamorphic processes. At least 100My later during the Devonian (359-444Mya) igneous dykes intruded this bedrock. The dykes consist of light-coloured, silica-rich intrusives of Riebeckite felsite (map colour yellow), felsite (map colour orange) and porphyritic microgranite (map colour dark rose). Darker, silica-poor, mafic intrusives are shown in light-pink and to the west, outcrops of metagabbro are shown in green. Felsic rocks are generally light-coloured and are likely to be less magnetic than darker coloured mafic rocks. Orthogneiss will retain the magnetic properties of its protolith (that is the rock that it is formed from) and is therefore generally considered to have moderate magnetic properties whereas the dykes may have moderate to strong magnetic properties.

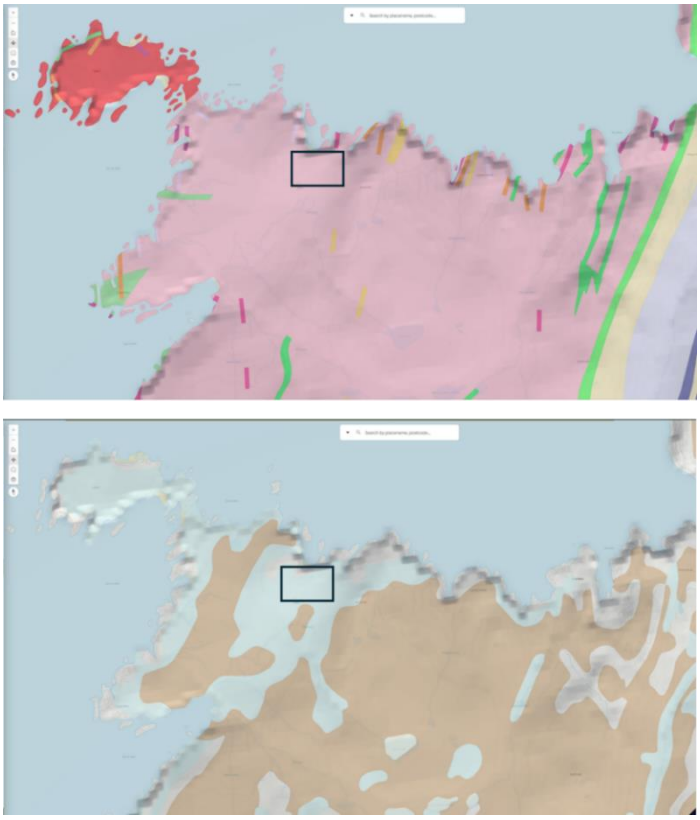


Figure 13: BGS Bedrock Geology and Drift maps. Top figure shows the Bedrock geology in the area of Uyea, Northmavine (marked as a rectangle) is composed of silica-rich Wilig Geos Felsic orthogneiss (shown in pink) and a large number of intrusive igneous dykes (various colours linear). Bottom figure shows the overlying drift material at Uyea (marked as a rectangle) consisting of glacial till (light blue) or peat (brown) (images from British Geological Survey BGS map viewer).

The overlying drift material in the area of the site is predominantly glacial till or diamicton shown in light blue (Figure 13). The glacial till often referred to as 'boulder clay' is composed of unsorted, unlithified pebbles and boulders often angular in a fine sand or mud matrix, which is usually a light brown/yellowish colour in Shetland. The remaining areas are covered in thick peat shown in light brown (Figure 13). Variations in the thickness and content of the boulder clay can affect the geophysical survey which is expected to have a field of investigation of around 0.5-1.0m.

GEOPHYSICS SURVEY

SURVEY METHODS

Two archaeological remote sensing methods were available to the group.

(i) a TR systems (TR15) resistivity meter which measures Electrical Resistance and
(ii) a Bartington Grad601 (dual sensor) gradiometer which measures the magnetic gradient.

The TR 15 meter passes an electrical current through the ground and measures resistance across an area between two electrodes set 0.5m apart. This allows a depth of investigation of 0.5-1.0m. Low electrical resistance corresponds to things that conduct electricity well and in an archaeological context usually corresponds to ditches and pits or middens which due to their organic contents can retain moisture. High electrical resistance, where the flow of electricity is impeded is often caused by stone foundations, walls or bedrock. The ground moisture conditions will affect the contrast between archaeological features and the background values so the results are strongly weather dependent and are also more difficult to repeat. The more time the equipment has to generate a reading the more accurate it will be (Sussexarch). In semi-rural areas a setting of 1.5s is sufficient.

The **Bartington Grad601 (dual sensor)** is a fluxgate gradiometer. While a magnetometer measures magnetic field at one sensor location a gradiometer measures the difference between two or more magnetic measurements separated by a known distance. This highlights near-surface archaeological targets while suppressing deep bedrock anomalies (ScaRF 2012). The gradiometer survey technique relies on the contrast between the magnetic properties of human-made archaeological features and the natural subsoil and bedrock. However, these can be masked by stronger magnetic signals at depth. There are a number of ways that magnetic enhancement is caused some of which are related to human activity :-

(i) by Thermoremanent Magnetisation which results when clay and stones containing iron oxides (like magnetite) are heated above their Curie point (approx. 580°C). After cooling, they retain a strong permanent magnetic

signature aligned with the Earth's magnetic field at that time. Thermoremanent Magnetisation is associated with hearths, kilns and furnaces. This produces a strong dipolar/bipolar magnetic response around 100nT.

(ii) by human activity which concentrates organic matter and microscopic iron particles especially in midden material. The disposal of this midden material as infill of pits and ditches, as soil enhancement or dispersed around high frequently area of human activity produces a weak to moderate positive magnetic anomaly of 1-10nT

(iii) the natural concentration of Iron bearing minerals in tops soil is generally increased relative to the parent bedrock due to weathering and bacterial processes. If this topsoil is moved and used to infill pits or ditches it produces a magnetically higher signal than the feature it infills. This results in a weak to moderate positive magnetic anomaly of 1-10nT

(iv) A negative or reversed magnetic response relative to the surrounding area can also be produced by human activity. This happens when a ditch or pit is backfilled with a material such as limestone or chalk which has a lower magnetic response when compared to the surrounding material. Similarly Empty cavities (tombs or caves) can also show up as weak or negative anomalies. These can produce a weak to moderate negative magnetic anomaly.

In all cases, overhead powerlines, buried pipes, fences and other modern ferrous objects are to be avoided, if possible, in the survey area. Small ferrous objects will produce a strong bipolar response of around 100NT.

Gradiometer survey has been a staple of geophysics surveys in England especially where many of the archaeological sites consist of banks, ditches, pits and post holes or hearths and kilns. Gradiometer survey has also been successfully applied across large areas of Orkney where the bedrock consists of Devonian Old Red Sandstone (ORS) which generally has low magnetic properties. In Shetland Gradiometer survey has not fared so well where much of the bedrock is significantly more ancient, has been metamorphosed and intruded and as a result has a higher magnetic signature. The findings from numerous

Gradiometer surveys carried out in Orkney where the bedrock is ORS indicate that much of the response form habitation can be detected between +/-3nT and certainly between +/-10nT. Geophysical survey carried out at Tingwall as part of The Assembly Project in 2010 found the extremes of their data ranged from -2496.0 to 2391.8nT with a standard deviation of 55.0nT. This strong response resulted from outcropping metamorphic and igneous bedrock and Fe-rich soils which dominated the survey response making it difficult to discern any archaeological overprint (Coolens and Mehler 2010).

ER surveying takes much longer due to the setting up of the traverse lines within the survey grids as well as the time taken to generate each survey point. However, as the methods of Gradiometer survey and ER are complementary, they are often run together.

EXAMPLES OF GEOPHYSICAL SURVEYS OVER PREHISTORIC STRUCTURES IN SHETLAND

There has been limited success using geophysics to delineate prehistoric structures in Shetland. Of the few published examples most struggle with the complex bedrock or drift geology. One example where geophysics was considered successful is at Old Scatness where Earth Resistance along with Gradiometry data was acquired (Dockrill et al, 2015). At Old Scatness, the gradiometry survey detected a 7m wide defensive ditch as a results of the midden-rich infill. The Earth Resistance survey also detected low resistivity areas associated with the ditch plus high resistivity circular anomalies consistent with the subsequent excavation of a wheelhouse structure (Figure 14).

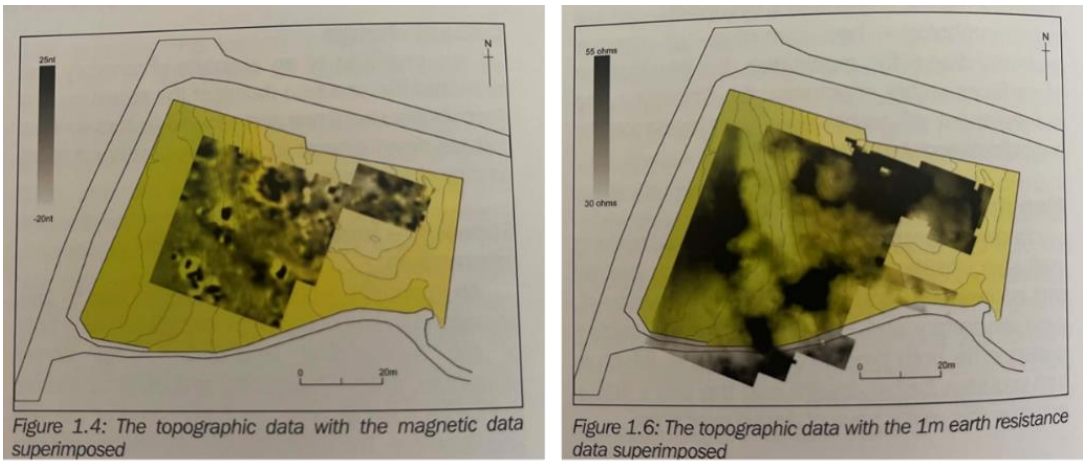


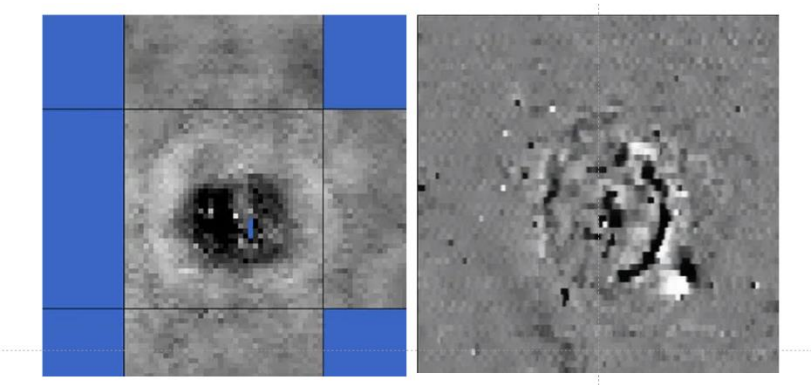
Figure 1.4: The topographic data with the magnetic data superimposed

Figure 1.6: The topographic data with the 1m earth resistance data superimposed

Figure 14: Gradiometer and Earth resistance survey results at old Scatness as presented in the Excavation report Vol 2 pg.14 (Dockerill et al, 2015).

Outside of Shetland, the gradiometer technique has been very successful in Orkney at identifying ditches, pits and hearths associated with prehistoric structures. This has been in part due to the magnetically benign bedrock geology which consists of Devonian Old Red Sandstone of the Orcades Group. These rocks also underly the structures in the south of Shetland including Old Scatness. As the Gradiometer survey data from Uyea shows little in the way of convincing archaeology, comparisons here have focused on examples of Earth Resistance data. However, this has also proved difficult. Despite Earth Resistance being a commonly used geophysical tool in England it is difficult to find many easily accessible published examples in the Northern areas of Scotland. A few relevant examples are discussed below.

Examples of Earth Resistance survey in Orkney include the work carried out by ORCA as part of the Tomb of the Isles Project (2023), including Cutter's Tuo, Stronsay (Figure 15). Cutters Tuo is described as 'a rounded, grassy mound with numerous stones protruding from the surface' (ORCA 2023). The survey was carried out to help establish if the mound was an Iron Age structure or a Neolithic burial cairn. Note that ORCA use a reversed colour scale (dark colours are high resistivity) compared to much of the published ER survey data and the colour scale used in this report. ORCA interpret the high resistivity (dark) circular central area on the ER data to be a central stoney area and conclude that the structure is likely to be a Neolithic cairn c.13.5m in diameter, on a well-defined platform c.22m in diameter then a thin dark outer circle formed by kerb stones, some of which is evident from ground survey. The Gradiometer survey data at the same site, shows a magnetically enhanced feature on the left of the structure which is interpreted to represent reuse of the site during the Bronze Age (ORCA 2023)(Figure 15).



Earth resistance data processed with high-pass filter at Cutter's Tuo showing the central stony area (black) and platform. (ORCA)

Magnetometry at Cutters Tuo, showing the enhanced features within the mound. (ORCA)

Figure 15: Examples of ER (left) and Gradiometer survey (right) provisional geophysical surveying results at Cutters Tuo, Stronsay Orkney (Orca 2023). No scale or colour bar was included with Images but the black grid lines are likely to be 20x20m grids. No colour bar given, but convention used by Orca has black as low and white as high values in both ER and Gradiometer survey.

SURVEY CONDITIONS

The survey took place on Saturday 6th June 2026. The weather was clear and bright with light winds. There was only light rainfall the previous week.

The ground conditions were good with short grass from sheep grazing and no boggy patches (Figure 16). Some large, isolated boulders and some small groups of large stones occurred across the survey area. Under the large stone groupings there was evidence of voids and/or rabbit burrowing. A pathway trending N-S and a cut into the ground surface were apparent adjacent to the sheep folds. The ground was gently sloping from NW-SE while there was a short but steeper slope in the NE-SW direction from the survey area down to the NW-SE trending discontinuous wall (Figure 4).



Figure 16: Archaeology Shetland Volunteers carrying out the Electrical earth resistance survey using the TR meter at Uyea, Northmavine.

SURVEY AREA

A shift of around 28m occurs between the various editions of the OS National grid maps, as well as the Google Earth historical satellite images. This made it difficult to determine accurate co-ordinates for a target location for the survey. A pragmatic solution was determined using the assumption that the target location of the Cuml stays relatively consistent with the position of the main rectangular sheepfold structures on all maps and images. This resulted in a decision to survey the NE side (high side) of the discontinuous wall including the edge of the linear WNW-ESE feature and covering the area to the sheepfold (Figure 17). If time had allowed the grids would have been extended to the NW to include the remainder of the short WNW-ESE linear feature and a further three grids would have been laid out on the SW side of the discontinuous wall.

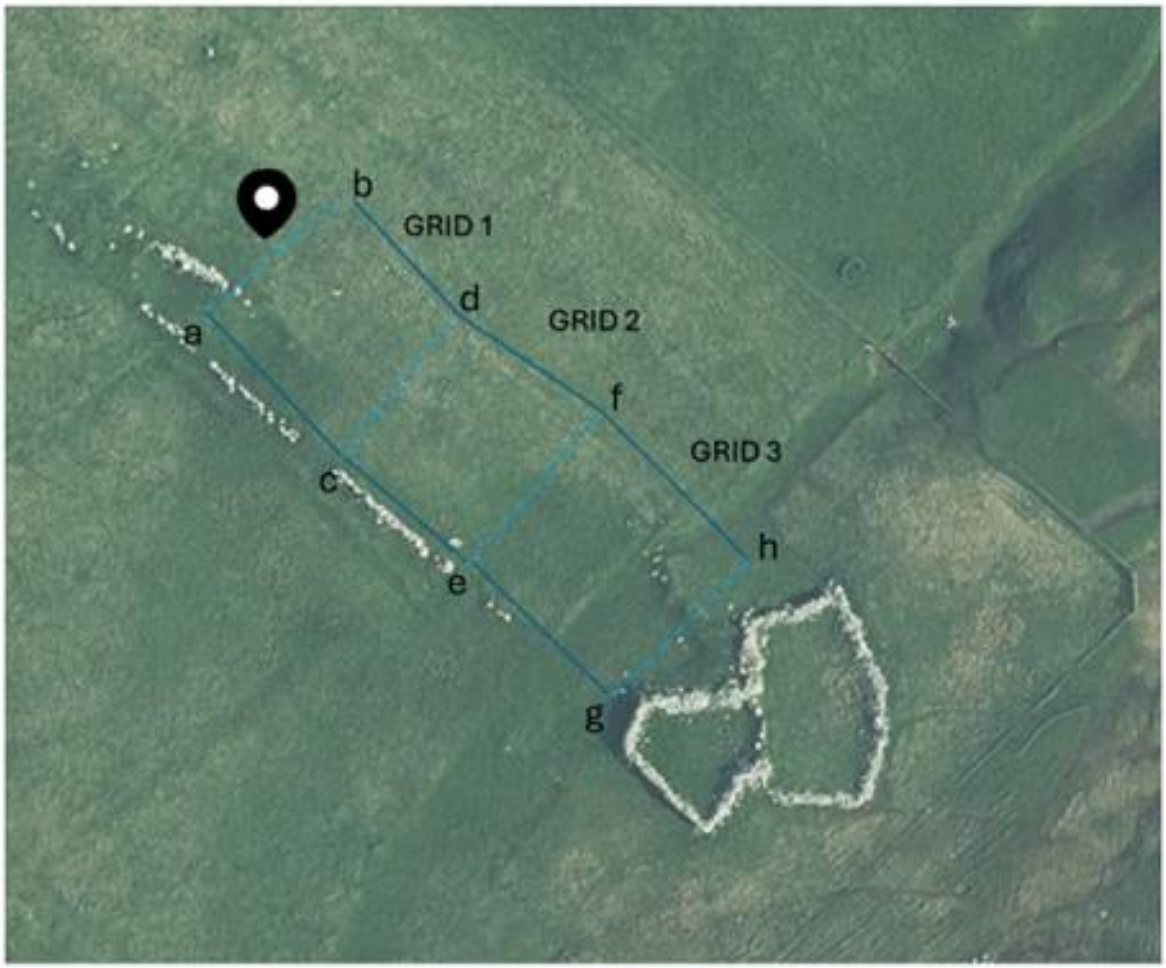


Figure 17: Location of survey grids in the landscape (image Google Earth GE07082023)

SURVEY GRIDS

Three 20x20m grids were created along a baseline oriented at 135deg SE (Figure 17). The traverse lines were oriented at 045deg NE using the compass app on an iPhone 12. This proved to be rather 'fiddly' with large uncertainties in creating the straight line and so a better solution should be investigated. This orientation was selected to maximise coverage of the target relative to the discontinuous wall while also meeting the requirement that the Gradiometer survey acquisition traverse direction must be along a cardinal or intercardinal direction when using the Bartington system. The NE traverse direction is similar to the structural fabric of the bedrock and intrusions (see bedrock geology maps in Figure 13). However, if the target structure is circular this orientation will be sufficient.

	Easting	*Northing*
a	32770	91899
b	32785	91912
c	32785	91883
d	32797	91899
e	32799	91871
f	32813	91888
g	32814	91856
h	32829	91871

Table 1: coordinates at grid points using a handheld Garmen eTrex 10.

The grids were checked to be orthogonal by measuring diagonally between corner points. All grids diagonals were found to be within a tolerance of 28.28m +/- 0.25m. GPS values taken with a Garmen eTREX 10 (with a listed accuracy of 10m) at the grid corner points (a-h) are shown in Table 1 and Figure 17. The grids used for the ER survey along with the schematic placement of the remote probes (RP) are shown on the left in Figure 18. As the first traverse line for the acquisition of the ER and Gradiometer survey were both centred on the line from a-b , the Gradiometer survey is actually offset from the ER by 50cm as shown in Figure 18 in red on the RHS. An additional few lines of Gradiometer data were recorded and saved as Grid 4 to complete the data acquisition up to the sheepfold. The ER survey was interrupted partway through Grid 3 due to insufficient time to complete it. Fourteen out of the twenty survey lines in Grid 3 were completed. The speed of

acquisition for the ER is significantly slower than the Gradiometer survey and this should be taken into account for planning future surveys.

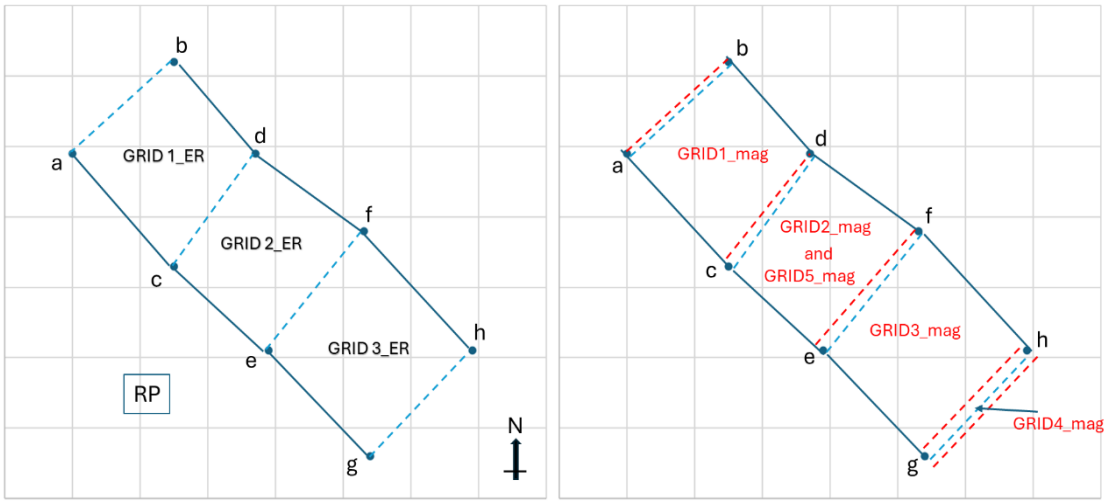


Figure 18: three 20x20m grids were set up with a baseline of 135 deg SE and traverses at 045 deg NE resulting in grid corner points a-h. Remote probes from the TR meter were located 15m SE of grid 2.

SURVEY PARAMETERS

Electrical resistance survey settings

The remote probes were located c.15m SW from the approximate mid-traverse of Grid 2 with an approximate 1m spacing between the remote probes. The range setting was set to 200 Ω. The ER survey parameters are:-

Survey Name	*Uyea-ER*
Grid Size	20x20
Samples per m (no of x)	1 (20)
Lines per m (no. of Y)	1 (20)
Pitch	1
Total number of points per grid	400
Pattern (zig zag or parallel)	Zig-zag
First Traverse direction	045 deg/N
First traverse	Centred on Zero line, starting bottom left
Range (20/200/2000 Ω)	200 Ω
Setting (rural 0.5s, semi-rural1.5s, urban 2.5s)	semi-rural 1.5s
Trigger (automatic or manual)	manual

Gradiometer survey settings

It is advised to keep the bottom sensor as close to the ground as safely as possible (under 0.3m) to maximize the signal-to-noise ratio for shallow anomalies compared to the deeper, widespread bedrock. The range of the sensor was set at +/-1000nT for **Grid squares 1**,**2,3** and **4** because the surrounding metamorphosed bedrock geology is likely to have a moderate to high magnetic signature. This setting allowed the sensor to measure fluctuations of up to 1000 nT above or below the baseline. At this range, the resolution in the magnetic field that can be detected is 0.1nT. A repeat survey of **Grid square 2** used the lower range of +/-100nT with a resolution of 0.03nT, in order to assess the sensitivity of this parameter. Results of the repeat were recorded as **Grid 5**.

The Gradiometer survey parameters are :

Survey Name	*Uyea _Gradiometer*
Grid Size	20x20
No of x (traverses walked)	10
No. of y (samples along traverse)	0.4/m
Data density	0.25 x 1m
Pattern(zig-zag or parallel)	Zig-zag
First Traverse direction	045 deg/N
First traverse	Centred on zero line, starting bottom left
Range (10/100/1000 nT)	1000 nT (Grid 1/2/3/4) and 100nT (Grid 5).
Walking speed	1.2m/s
Distance sensor to ground	0.25m

Resistivity Raw data

The raw ER data values from Grids 1-3 were downloaded and imported directly into Snuffler© V1.32 . The raw ER data values range between 91-391Ω (Table 2).

Table 1: Raw data ranges for Grids 1,2,3 and resulting merged grid.

	Min(Ω)	*Max (Ω)*	*Average(Ω)*
Grid 1	107	391	144
Grid 2	118	234	164
Grid 3	91	180	112
Merged grid	91	391	143

The resulting merged plot of raw data (Figure 19a) is displayed using a 95% cut off. The difference with the extreme min and max values shown in Table 1 are caused by a limited number of spikes. These spikes can occur for example when an isolated stone makes contact directly with the probe(s). Data quality is generally good as shown by the consistent values across grid margins although some vertical striping is noticeable in three traverses in Grid 2. It is likely that these vertical stripes are as a resulting of the probes being inserted to varying degrees by different users. This should be mitigated through training in future surveys.

The following processing steps have been applied to the data within Snuffler.

Step 0: Import raw data and merge (Figure 19a).

Step 1: De-spike (Figure 19b)

The remove spikes function in Snuffler attempts to remove lone spikes caused by a bad reading for example by hitting a stone. The spike is defined using an input threshold for the difference between a point and its neighbours. In this case a threshold of 25.6 suggested by Snuffler was used along with a light smoothing.

Step 2: De-striping (Figure 19c)

A de-stripe filter was used to correct the acquisition anomalies which appear as three vertical high resistivity lines. This function is more commonly used with magnetic data but the same principles apply when trying to mitigate for errors

acquired in the traverse direction. The simplest de-striping filter was applied, this filter is known as 'Zero-mean-line' and was applied vertically and to the entire grid.

Step 3: Interpolate horizontally and vertically (Figure 19d)

The *Interpolate* filter in Snuffler© generates data between the measured data points using a weighted average function based on its four nearest neighbours. This results in a smoother image by graduating the infill datapoints between the existing values. The Snuffler© guide states '*This is useful for producing a less blocky, prettier picture that may in some cases show up more features'*. The *Interpolate horizontally and vertically* filter is predefined and therefore it is not possible to adjust or input any controls on the process. This function must be applied with caution as when overapplied it can cause the data to induce circular features that were not present in the original data.

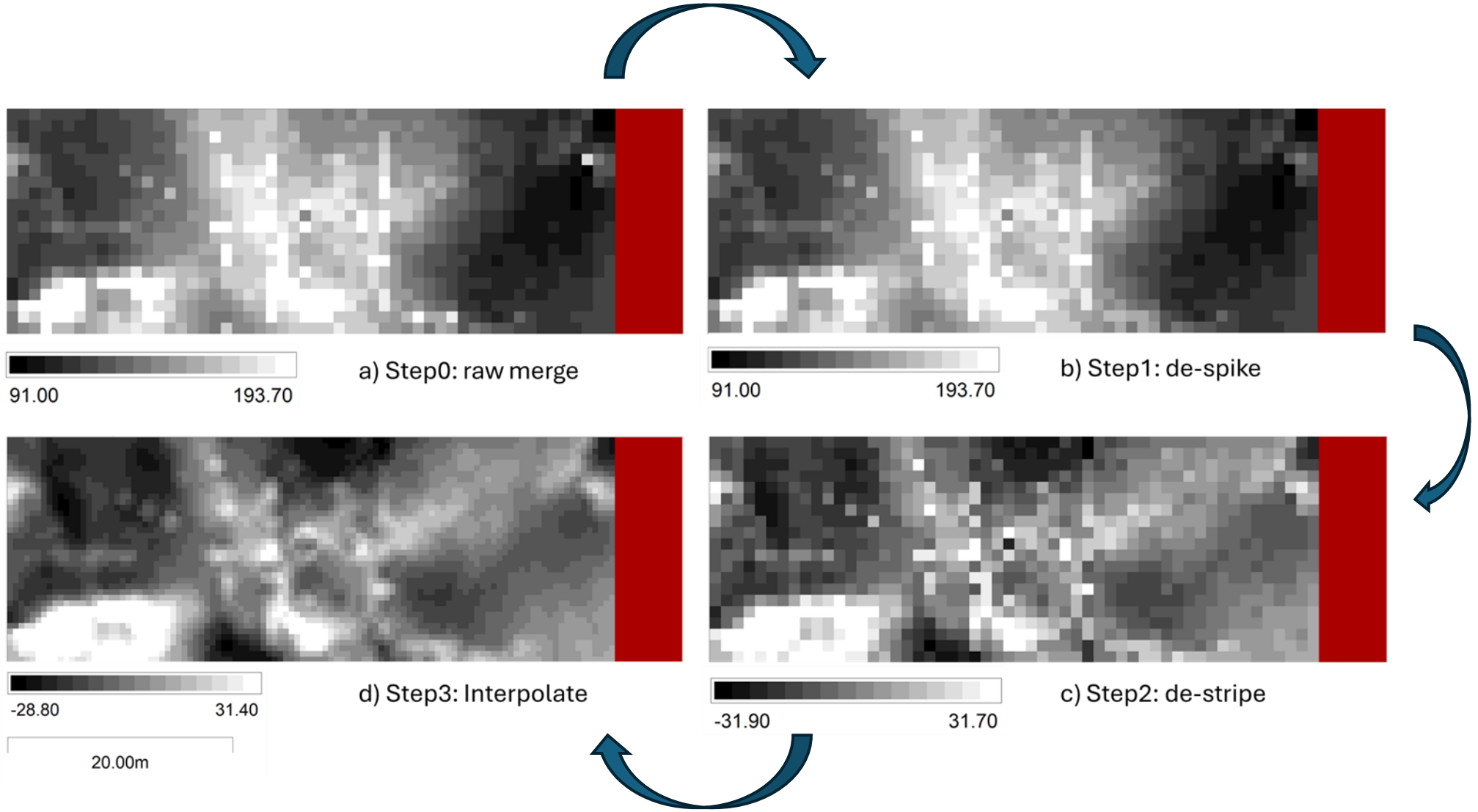


Figure 19: Uyea ER Data and processing results

Gradiometer Raw Data

The gradiometer data was acquired across three full 20x20m grids and one incomplete 4th grid as outlined above in the survey parameters section. A fifth grid was aquired which was a repeat of Grid 2 but applied a setting range=100nT instead of 1000nT. The data was imported into GEOPLOT© 4.0 where a composite grid was created using the mapfile function.

The magnetic gradient values vary across the initial four grids (Grid 1,2,3,4) from a low of -609.9nT to a high of 198.8nT and with a mean of 6.56nT as shown in Table 2. The plot is skewed by a few strongly negative datas point in the last few traverses of Grid 4 on the very edge of the survey where the boundary was adjacent to the remains of a stone wall made from large boulders. Otherwise the grids have similar value ranges. Grid 2 is relatively magnetically quiet compared to the grids either side of it which is all demonstrated by the repeat experiment Grid 5 (see Table 2 and Figure 20).

Table 2: Gradiometer survey data result ranges

	Min(nT)	*Max (nT)*	*Average(nT)*
Grid 1	-70.6	91.1	11.04
Grid 2	-28.8	86.6	6.13
Grid 3	-39.6	198.8	10.61
Grid 4	-609.9	62.3	-1.10
Grid 2 repeat/Grid 5	-35.7	73.23	3.29
Merged grid (1,2,3,4)	-609.9	198.8	6.56
Merged grid with repeat (1,5,3,4)	-609.9	198.8	6.56

The following processing steps been applied to the data within Geoplot (import and merge, bulk shift, zero-mean traverse function, interpolation, high band-pass filter with limited success (Figures 20-22) In each of the following figures which show the various stages of processing, the bottom row shows a composite of grids 1,2,3,4 and the top row shows the same layout of grids 1,3,4 but with Grid 2 being replaced by Grid 5.

Step 0: Import raw data and merge

After import, the raw data was merged and a bulk shift of -6.0nT was applied in order to correct the data to be bipolar centred around zero (Figure 20). A visual comparison of the spatial distribution of the raw data shows minor differences between Grid 2 and Grid 5 mainly located at the middle right of the Grid2. Problems with striping in the traverse direction are also very noticeable.

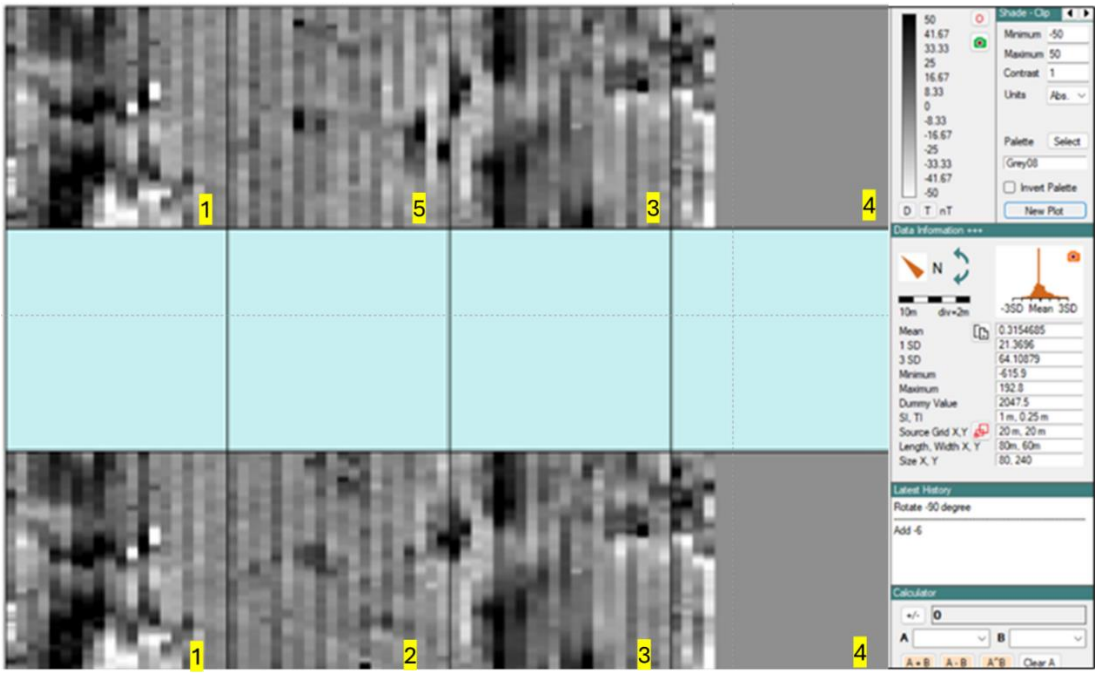


Figure 20: Step 1: Raw magnetic data from Grids 1,2,3,4 shown on the bottom row from left to right and Grids 1,5,3,4 on the top row from left to right.

Step 1: De-striping

It is evident from the raw data that there is significant striping in the traverse direction. This is a common acquisition artefact and can be caused by Sensor Drift, Operator and Environmental interference or Instrument Misalignment. This is quite a strong example of it and was probably caused by the instrument having difficulty stabilising prior to data acquisition. Striping is routinely removed with the Zero Mean Traverse (ZMT) function which forces the average reading of every single traverse to zero. Prior to running the ZMT function, the Periodic Function was applied using an Index=5 which was derived from results of spectrum analysis. This however has not significantly mitigated the striping (Figure 21).

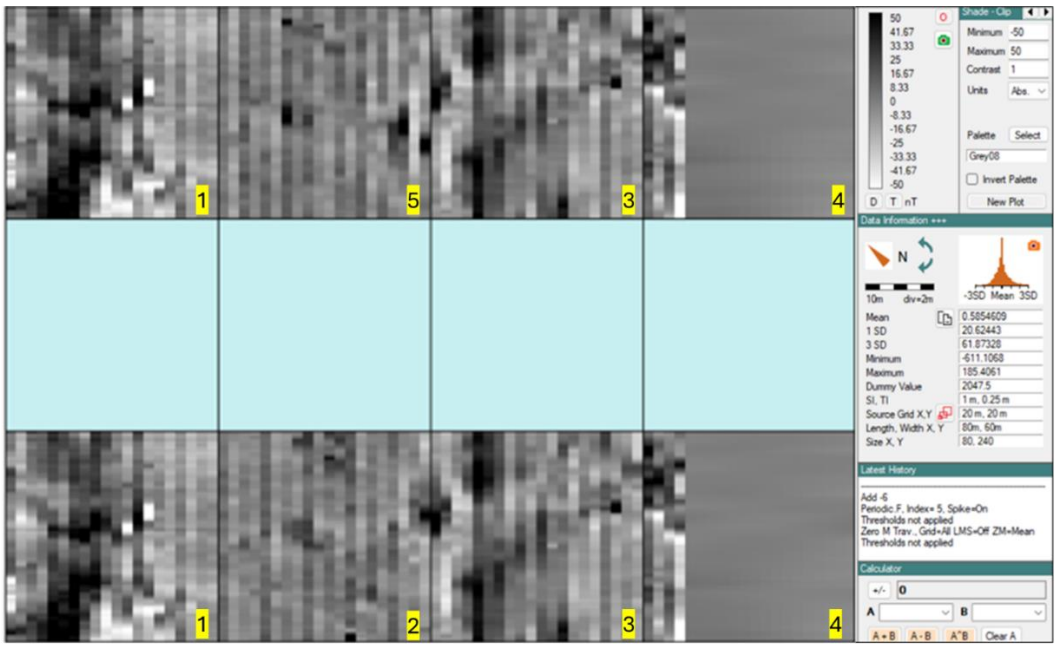


Figure 21 : Step 2 De-Striping. Attempted mitigation of the striping in the traverse direction using both the Period function and a ZMT function

Step 2 : Interpolation

Gentle interpretation softens the effect of striping while retaining the original geospatial results (Figure 22).

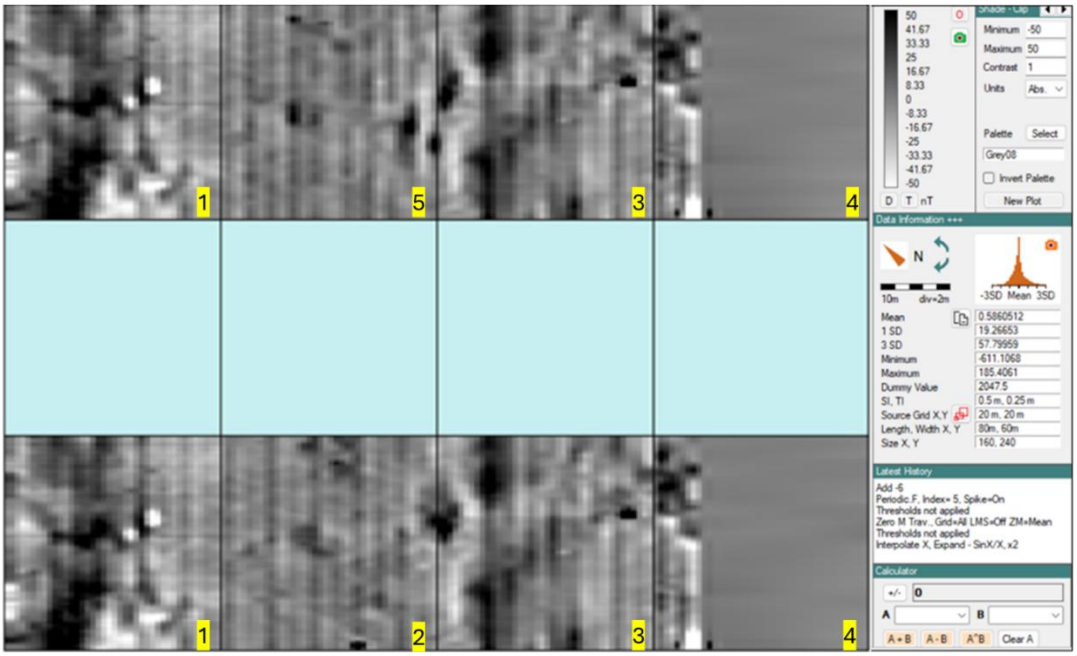


Figure 22 : Step 3 Gentle interpolation in the x direction

Step 3 : High band-pass filter

A high band-pass filter (HBF) to remove the background geology was applied but again it did not significantly change the image and is not included here.

GEOPHYSICS INTERPRETATION

Interpretation of the ER and gradiometer survey results from Uyea are presented as numbered anomalies on Figure 23. The responses from each survey are used together to create an integrated interpretation and have been summarised into Archaeology and Non-Archaeology categories. Note that the tools only investigate the top 0.5-1m of ground.

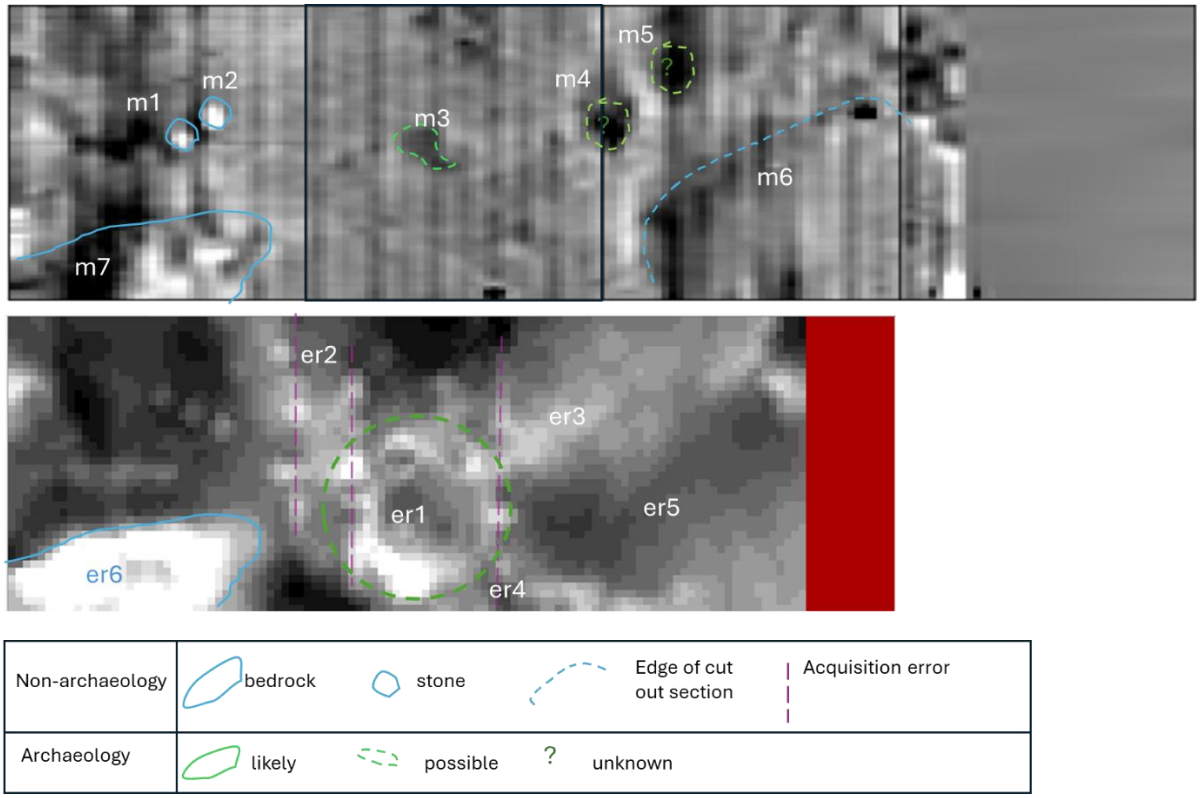


Figure 23: results of the Gradiometer survey (top) and ER (bottom). Colour scales as previous figure

Non-Archaeology

er6/m7 : The NW-SE trending stoney outcrop extends under the subsoil from the bottom left corner of grid square 1 as shown by the high resistivity (lighter) zone (er6) and high mag area (m7) (strong dark and light). This appears to continue in the same trend but likely deeper under the soil into the top right of grid 3 (er3) and the higher mag values shown by (m4) and (m5).

er5/m6: This large roughly rectangular area of low resistivity matches the edge seen in the magnetic data m6 and represents a flat area cut into the ground adjacent to the sheep

folds and which appears to be soil dominated.

m1/m2: In general, the Gradiometer survey data is dominated by the moderately strong background magnetic signal of the bedrock. However, two strong (+/-50nT) bipolar responses in Grid 1 (m1 and m2) are likely to represent ferrous objects although it is possible that they are sites of localised burning or possibly pits filled with midden rich in magnetic material. The ER data gives an indication that this area is 'spotty', that is there are small higher resistivity patches perhaps indicating dispersed stoney ground.

Archaeology

er1: Grid square 2 is dominated by a broadly circular/oval high resistivity (lighter) area (er1) approximately 12-14m in diameter with a lower resistivity (darker) centre approximately 5m in diameter. The high resistivity outer circle varies in response, is broken in places and has a stronger and thicker anomaly to the west compared to the East. This feature is interpreted to be stone and based on its circular structure it is considered likely to be mad-made, either as the remains of a prehistoric structure or perhaps localised quarrying. The magnitude of the resistivity response in the centre of this circular features does not reach the lowest resistivity of the background levels suggesting that the centre of the circular feature may still contain stone which could be explained by rubble filled void(s) or robbed-out areas. Lower resistivity areas on the edge of the circular feature (e.g. er4) may indicate a gap in the stonework or possible entrance although as there are multiple of these lower resistivity areas it would be difficult to say which would be the more likely entrance and perhaps there is another explanation for them. The lowest resistivity values shown by the darkest colour in Grid1 and Grid 3 are likely as a result of thicker soil cover. Processing was not able to entirely remove the effects of the striping in the acquisition of the ER data and so care must be taken not to over interpret anomalies in these areas e.g. er2. The gradiometer data is very quiet across most of Grid 2 and does not detect the circular feature (er1) visible on the earth resistance data. However, there is one small irregular patch (m3) with a moderate magnetic response, which partly overlays the centre/edge of the circular feature (er1). Although unlikely to be a hearth could m3 represent a pit or hearth?

INTERPRETATION DISCUSSION

Comparison with shapes and dimensions of known prehistoric structures in Shetland along with the examples of geophysical survey from both Orkney and Shetland have been used to assist the interpretation of the sub-circular feature detected by the earth resistance survey. Although constructed of stone and broadly circular in shape, the wide variation in style of Shetland prehistoric buildings make this difficult; with a cairn, chambered cairn, passage tomb, Ne/BA house and IA structures all being possible interpretations. In addition, due to limitations of the geophysical method it is not possible to distinguish important archaeological architectural features such as corbelling but instead can only detect density of stone close to the ground surface. As such sites that have been robbed out or altered significantly in plan view will complicate the assessment.

Given the above, the plan drawings from a selected range of known prehistoric structures has been displayed at the same scale adjacent to the geophysical results in order to aid in the interpretation (Figure 24). The pros and cons for each site type is discussed below.

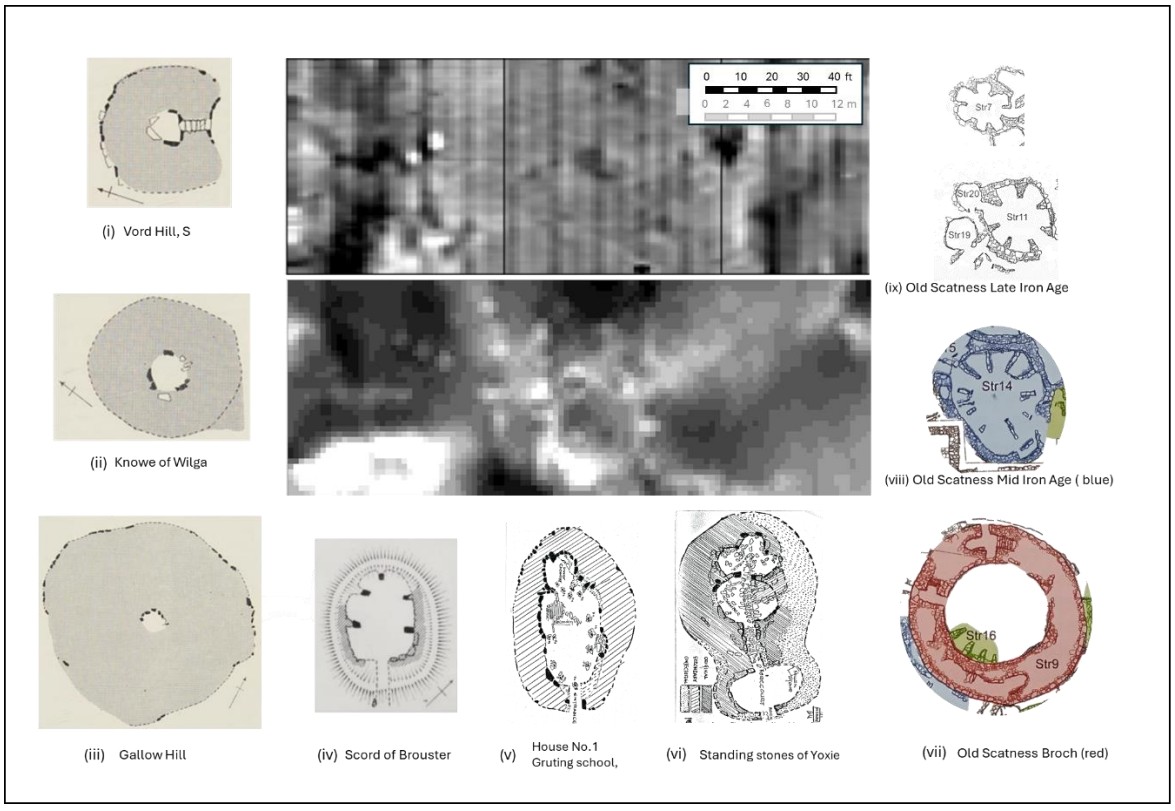


Figure 24: Selection of prehistoric structures for comparison with the geophysics results (Images after (i-iii) Henshall (1963), (iv) Whittle (1979), (v) Calder (1955/6), (vi) Calder (1960/61), (vii-ix) Dockrill et al (2015))

Cairns: Given the estimated diameter of the smallest circular anomaly (12-14m) along with a relatively quiet signature in the gradiometry data this structure could be interpreted as a one of Shetlands many cairns. As outlined earlier (page 8) many of the Cuml sites have been reclassified as cairns. However, the lack of stones at the centre of the structure would suggest that it had to be significantly denuded /robbed out. This is possible since the original Cuml has been robbed for its stone and is no longer visible even as a small mound at ground level. The one area of moderate magnetic response (m3) coincides with part of the hollow centre, could this be the chambered tomb? However, the overall location of the site, on a low-lying area off good quality agricultural land seems an unlikely location for a cairn. This position in the landscape would be more typical for a prehistoric house.

Ne/BA house: The larger houses of the Ne/BA are often oval in shape with thick walls . In comparison, the geophysics anomaly appears quite circular but this could be influenced by the remnants of the acquisition errors which still remain in the data. There is a good comparison in terms of overall shape, size and variable thickness of wall with an sub-circular Ne/BA house as exemplified by The Scourd of Brouster (Figure 23). In addition, we have supporting evidence of domestic activity prior to the early IA based on the trough quern discovered within metres of the site. Although a weaker argument, many of the other Cuml sites in the area, including the two nearest ones, have be reclassified as a Ne/BA house.

Iron Age: The sub-circular feature and hollow centre although on the small side to be a broch are consistent with the inner diameter and part of a double wall of brochs such as Old Scatness. Unfortunately, there is no indication of the chaotic magnetic response usually associated with the long period of habitation seen at other surveyed brochs but could this in part be due to the poor quality of the Gradiometer data? Mid to late Iron age structures as found at Old Scatness are also possible candidates for the Uyea site however the geophysics data is unlikely to be able to differentiate between them given that the majority of the structure has been removed.

CONCLUSIONS

Although there was little indication of a buried stone structure when we arrived on site, the presence of a large broken trough quern, reused to create a portion of the discontinuous wall, close to the baseline of the survey, likely indicates likely prehistoric domestic activity in the immediate area.

Despite the site having been cleared of stone so that it is no longer visible at ground level, the ER survey successfully recorded a broadly circular, high resistivity feature c. 12-14m in diameter. It is likely that this confirms the location of the prehistoric structure previously recorded as Cuml on the OS survey. The Gradiometer data was generally quiet in the area of the ER anomaly which may indicate limited habitation but may also be as a results of the strong background geology signal and difficulties with the acquisition of the data.

The ER results detects the presence of stone within 0.5-1.0m from the ground surface. The centre of this feature has lower resistivity (darker colour) but not as low as outside the anomaly, so may represent rubble filled voids, or areas that have been almost completely robbed out.

Based on the comparison of the geophysics data with various prehistoric structures in Shetland, the Uyea Cuml site could be the denuded remains of a cairn, a Ne/BA house, or circular Iron age structures. When the open low-lying position of this site in and around productive farmland, along with the finding of the trough quern is taken into account, it is likely that the Uyea Cuml site is the remains of a Ne/BA house. This is consistent with the nearby Cuml sites in Northmavine and in the wider areas of Shetland which have been reclassified as chambered cairns or Ne/BA house or farmsteads.

RECOMMENDATIONS

It is recommended to continue running both Gradiometer survey and ER when surveying. Although the ER is more likely to find buried walls, the Gradiometer survey is quick to run and can give excellent results when the background magnetic signal is moderate to low.

The next survey would benefit from targeting a site which overlies simple Devonian sandstone and siltstone bedrock geology in areas on the east of Shetland from Lerwick, & Bressay, southwards to Sumburgh.

The accuracy of the survey grid points would benefit from a more rigorous method to set up the baseline direction and to keep it rigid across the grid squares. A comparison of the GPS location accuracy with other devices such as mobile phone apps is also recommended.

Training of additional members from Archaeology Shetland in the use of the equipment and the processing software is recommended, to aid the supervision of surveying at group events but also to create a robust geophysical team going forward.

REFERENCES

Calder, C.S.T. (1955/6). The Standing Stones of Yoxie. P.S.A.S 94, p.28-38

Calder, C.S.T. (1960/61). House No.1 Gruting School Plan and sections in P.S.A.S XXXIX, p345

Calder, C.S.T (1959/60). Punds Water II. P.S.A.S.93

Coolen, J. and Mehler, N. (2010). TAP Field Report No.1 Geophysical Survey at Tingwall, Shetland 2010. Available at: https://www.khm.uio.no/english/research/projects/previous-projects/assembly-project/documents/tingwall-report.pdfingwall tingwall-report.pdf. [accessed on 01/06/2026]

Dockrill, S.J., Bond, J.M., Turner, V.E., Brown, L.D., Bashford, D.J., Cussans, J.E.M. and Nicolson, R.A.(2015). Excavations at Old Scatness, Shetland Volume 2: The Broch and Iron Age Village. Shetland Heritage Publications, Lerwick.

Graham, J. (2009). Shetland Dictionary online. Available at John J Graham's Shetland Dictionary :: Shetland ForWirds [Accessed on 13/10/2026]

Henshall, A.S. (1963). The Chambered Tombs of Scotland Vol 1. The University Press, Edinburgh. Available at https://archive.org/details/chamberedtombsof0001audr/page/n5/mode/2up [accessed on 05/10/26]

Jacobson, J. (1928): An Etymological Dictionary of the Norn Language in Shetland : Jakob Jakobsen : Free Download, Borrow, and Streaming : Internet Archive [accessed on 13/10/26]

Jennings, S. (2021). The Iron Age in the Neolithic Axe Factory; North Roe, Shetland. UHI Masters Degree (unpublished thesis).

ORCA (2023). Provisional geophysics results from suspected Rousay, Shapinsay and Stronsay tomb sites. Available at: //archaeologyorkney.com/2023/05/11/tomb-geophys-2023 [accessed on 14 June 2026]

ORCA (2023). Tombs of the Isles: Castle Bloody, Shapinsay, Lingro, Rousay & Cutters Tuo, Stronsay, Orkney. Available at: https://archaeologyorkney.com/wp-

content/uploads/2026/01/842_Strons_Rous_Shap_Geophysics_Report.pdf. [Accessed on 30 June 2026].

ORCA (no date). Cutter's Tooer, (Cutters Tuo), Stronsay, Orkney in Tombs of the isles. Available at: https://archaeologyorkney.com/tombs-of-the-isles/stronsay/cutters-tooer-stronsay. [Accessed on 30th June 2026]

Ordinance Survey (1921). Notes on Archaeology for guidance in the field. Available at Notes_on_Archaeology.pdf [accessed on 10th July 2026]

Ordinance Survey (1845-1878). Ordnance Survey Original Object Name Books for Scotland, First Series (1845–1878). Available at Ordnance Survey Name Books | Scotland's People.

ScARF (2012). Geophysical Survey. Scottish Archaeological Research Framework: Society of Antiquaries of Scotland, 5.3 Geophysical Survey | The Scottish Archaeological Research Framework. Accessed on 01/06/2026

Schmidt, A., Linford, P., Linford, N., David, A., Gaffney, C., Sarris, A. and Fassbinder, J. (2015). EAC Guidelines for the Use of Geophysics in Archaeology: Questions to Ask and Points to Consider (EAC Guidelines 2). European Archaeological Council. Available at: https://doi.org/10.5281/zenodo.10671299 [accessed on 14th June 2026]

SussexArch (no date). Conducting a resistivity survey. Available at: http://www.sussexarch.org.uk/geophys/georesistivity.html [accessed on 14 June 2026].

Whittle, A. (1979). Scord of Brouster Settlement Plan from Current Archaeology, 1979, VI. No.65

APPENDIX 1: RECLASSIFIED SHETLAND CUML SITES (RCAHMS)

PARISH	LOCATION	GRID REFERENCE	SM/HER number	PREVIOUS CLASSIFICATION	RECLASSIFICATION
Northmavine	Burn of Monius, Ronas Hill	HU 28778 84465	HER 161	Cuml	Three structures
Northmavine	Punds Water-South, Mangaster	HU 32443 71251	SM2042	Cuml	Chambered Cairn
Northmavine	The Cumlins, Olnesfirth	HU 30816 76964	HER 432	Cuml	Cairn/broch /house (HER), Eroded Broch (Fojut Thesis 1979)
Sandsting	Forse Water, South Houllan	HU 29736 55283	HER 2623	(site of) Cuml	Chambered Cairn/Marker stone
Sandsting	Gravlaba,settlement and standing stones	HU 32544 55840	HER 70/SM5731	Cuml	Ne/BA house and two standing stones
Sandsting	Loch of North House-N	HU 32256 56043	HER 68	Cuml	Cairn , Oval house
Sandsting	Loch of Vaara-N	HU 32326 57195	HER 81	Cuml	Cairn , Cist
Sandsting	Marlee loch ?	HU 29375 55030	HER 2626	Cuml	Clearance cairn/fishermans house/cist/round cairn?
Sandsting	Newhouse,homestead and field system 200m S	HU 31394 56971	HER 64/SM5500	Cuml	Prehistoric farm/oval house
Sandsting	Shun of Longa Ness	HU2869 5788	SM5553	Cuml	Ne/BA house and field system
Sandsting	South Houllan	HU 2938 5544	HER2628	Cuml	Ne/BA house
Sandsting	South Houllan	HU 29509 55212	HER 2622	Cuml	Unknown
Sandsting	Stanydale Temple	HU 28538 50172	HER 2220/SM3314	Cuml	Ne/BA house
Sandsting	Wester Houran	HU 28867 53608	HER 2232	Cuml	Cairn
Sandsting	Wester Houran	HU2903 5337	HER 2232	Cuml	Ne/BA house and field system
Sandsting	Burnside	HU 29888 52312	HER 2226	On site of Cuml	Burnt Mound
Sandsting	Garden, Bixter	HU 3274 5250	SM5959	Site of Cuml	Ne/BA house
Sandsting	Loch of Houster	HU 34101 55334	HER 58	Site of Cuml	Ne/BA house
Sandsting	Loch of Houster -E	HU 3408 5534	HER57	Site of Cuml	Ne/BA house
Sandsting	Loch of North House-N	HU 32340 55964	HER 69	Site of Cuml	Chambered Cairn
Sandsting	Loch of Vaara-W	HU 3155 5668	HER 66	Site of Cuml	Chambered Cairn
Sandsting	Roadside	HU 29749 52415	HER 2227	Site of Cuml	Ne/BA house (possible)
Walls and Sandness	Cattapund Knowe	HU 24808 51535	SM2030	Cuml	Ne ritual and funerary: long cairn
Walls and Sandness	Gronawalls	HU 2286 5133	HER 2260	Slater Cuml	Ne/BA house