Report on the Geophysical Survey around the
Peterhead Farm Symbol Stone, Blackford,
Perthshire

Report for Historic Scotland and the Perth and Kinross Heritage Trust on work
conducted August 2008

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Summary

As part of continuing research on the archaeological context of early historic Scottish carved stone monuments and in association with the Strathearn Environments and Royal Forteviot (SERF) project, Dr Meggen Gondek of the University of Chester conducted a resistivity survey around the monument known as the Peterhead (Blackford) Class I symbol stone. Work was conducted over a period of five days and provided a training opportunity for SERF fieldschool students. Results highlighted known features such as a nearby circular enclosure visible on APs and previously unknown features such as a small circular feature, possibly a building, a possible cairn around the symbol stone and potential Pictish-type square burial monuments. A small ground-truthing test trench across the wall of the possible circular building confirmed its existence, but the feature was heavily truncated and provided no secure dating evidence.

Introduction

On August 12 - 16, 2008, Dr Meggen Gondek (University of Chester) in association with SERF (University of Glasgow) undertook a resistivity survey of a limited area focusing on the monument known as the Peterhead (Blackford) Class I symbol stone (Figs 1 and 2; NMRS No. NN90NW 3, NGR: NN 9243 0980; RCAHMS 1999, 38) and partially including an enclosure within the same field (NMRS No. NN90NW 26, NGR: NN 9242 0975). Both areas are scheduled ancient monuments and permission was granted by Historic Scotland and the Gleneagles Trust for the survey. The underlying soils in this area are dominated by glacial deposits of gravel (Macauley Institute 1982, sheet 5). The stone is set on a ridge of ground, although not exactly the highest point, that marks the beginning of the sweeping slope down to Gleneagles.
The Peterhead Farm Class I symbol stone is approximately 1.52m high and stands near the current local access road by the Gleneagles junction on the A9. The stone is a grey igneous rock with large quartz inclusions particularly visible on the same face as the symbols. It is likely the monument could be a re-used prehistoric standing stone considering its size and shape (Clarke 2007, 39). There is an uncarved standing stone located c. 366 meters to the southwest. The symbols were reported by Calder in 1947 (Calder 1949) and are located on the north facing side of the stone and at the top. These consist of a very worn goose with its head turned back on itself and a better preserved rectangle symbol divided by two parallel lines.

The enclosure visible in APs lies c. 50 meters to the southwest of the symbol stone and is approximately 40m in diameter. The cropmark evidence from photographs dating to 1975 (Dewar collection RCAHMS; Archive numbers PT 6777 and PT6778) is limited and little detail is evident. Another circular enclosure with a diameter of c. 45 meters lies about 130 meters to the SSW (NMRS No. NN90NW 15, NGR: NN 924 096). Across the A9 a little less than 200 meters to the north of the symbol stone is the fort at Loaninghead, which has at least two banks and ditches and encloses an oval area on a prominent ridge at the mouth of Gleneagles over which the fort and symbol stone have a commanding view (Christison 1900, 54-55). The immediate area is thus not only rich in archaeological monuments, but those monuments also suggest the significance of this landscape at the mouth of the glen noted by Christison as the ‘easiest pass through the Ochils from Perth to Fife’ (ibid., 54). The area is currently being prepared for considerable alteration to the sliproad access to the A9 at the Gleneagles junction (S Winslow pers comm.). Several test pits designed to examine the soil and geological nature of the landscape were dug and filled in prior to the geophysical survey taking place. These pits marked out the line of a new local access road to be built running east-west approximately 100 meters to the south of the line of the current local access road, which will be developed into a slipway for the A9. In light of the current research interests of the author on archaeological contexts of symbol stones (Gondek 2007) and impending roadworks, the survey fulfilled a number of objectives.

The objectives of the survey were:
♦ Confirm the nature of the enclosure cropmark
♦ Identify any further archaeological anomalies within the area particularly in relation to the symbol stone
♦ Provide training opportunities for archaeology students attending the SERF fieldschool
♦ Provide information as to the nature of survival of archaeology in this area prior to the disturbance of features to the south

**Methodology**

Resistivity grids of 20x20m were laid out by hand using tapes and offsets and were aligned on the cardinal points (using magnetic North). Seventeen 20x20m grids were surveyed and two 20x10m partial grids. Readings were taken using an RM15 in standard twin probe array. Sampling resolution was 1m x 1m in a zigzag traverse. Whilst not optimal for finer detail, this survey scale was chosen because of the relatively limited amount of time available for the survey and the challenge posed by the very rough ground. Approximately half of the area surveyed was scrub with dead or dying thistle plants across the area, which the resistivity cable frequently became entangled with. The other half was covered with very high grass, thistle and other weeds, which needed to be flattened manually before survey could be done. It was not possible to cut the vegetation by machine because of the significant amount of rocks and boulders on the ground surface hidden by the grass. These surface stones likely represent recent field clearance or rubble from the old field wall that bisects the field. A finer scale survey of 1m x .5m was done on two grids to increase details of the potential circular building. Kathy McKeever of the University of Glasgow recorded the survey grid pegs using a total station and these points were imported into ArcGIS 9.0 and data processing of the geophysical results was done using Geoplot 3.0. The list of processes used on the results appears in the appendix.

Apart from the difficulties caused by the relatively rough terrain, there were data collection issues that may have affected the final results. The RM15 fluctuated in its background readings despite proper field procedures in place. This sometimes
occurred from grid to grid (even without moving the remote probes), but jumps also occurred within single grids making data unusable. In most instances these problems were solved by re-surveying grids or processing. However, the range of readings means that in some cases different areas of the survey have been separated for processing to enable better visibility of the features and edge-matching of grids is not seamless. Unprocessed data plots are provided in the appendix.

Results and Discussion

A number of known features appear in the results (Fig. 3). These include the old stone field wall visible on Ordnance Survey maps although now no longer used as a boundary and in a ruinous state and the line of a recent vehicle rut still visible in the field. A third feature is a test pit ahead of recent roadworks (placed to ascertain soil characteristics, not archaeology). A considerable amount of high resistance ‘noise’ of indeterminate form occurred in the southern part of the survey area approaching the line of the new local access road and a new fence. The lack of encouraging results in this sector meant that further survey in the southern area was not conducted and focus was put on areas to the north and approaching the Pictish symbol stone.

The enclosure

The circular enclosure to the south of the symbol stone that is visible on the 1975 APs is apparent in the western area of the survey area (Fig 4). The enclosure appears as an arc of low resistance with some gaps. Its northern aspect fades and there is a curving arc of high resistance echoing the enclosure in its interior (upon re-examination of the APs, this area is visible as a negative cropmark). The interior of the enclosure shows concentrated areas of high resistance and these correlate in part to dumps of stone visible on the surface. Comparison with the 1975 APs shows no visible stone in the field, which at that time was ploughed. Thus, it is likely these anomalies are the result of field clearance after the scheduling of the higher ground on which the symbol stone sits or rubble from the field wall, now disused, to the west.
The possible cairn

Mack (1998, 16) noted that the symbol stone at Peterhead is likely to sit on a submerged cairn, but offered little elaboration. A small amount of stone is visible on the surface around the monument. The geophysics shows a half-circle of high resistance to the north of the symbol stone (Fig. 4). Whilst this anomaly may represent field clearance, the regularity of the circular shape to the north and the ‘clean’ cut of the anomaly to the south suggests that the southern part of the cairn may have been removed by ploughing in the past, which used the stone as a boundary. No definite date can be allocated to this area of high resistance suggestive of cairn material. A parallel of a symbol stone sitting atop a cairn, noted as associated with ‘urns’ in the 19th century, can be found at Keillor in Perthshire (Allen and Anderson 1903, 207; NMRS No. NO23NE 3.02).

The possible square barrows

About 40 metres to the SSE of the symbol stone and approximately 8-10 meters east of the enclosure in an area where the ground begins to slope down from the highest point of this ridge are a group of right-angled anomalies (Fig. 5). Three of these features can be interpreted (and there are possibly more, but the results are not clear enough). All are aligned NW-SE and are approximately 4-6 meters roughly square. A1 is the northernmost and quite well-defined on three sides, the southern side being less clear. The edges of the feature show as areas of slightly higher resistance to the natural sandy gravel. Investigation of the possible circular building discussed below suggests this is not concentrated stone but a more compact fill than the natural and incorporating some stone. The barrow ditch appears to be continuous without gaps at the corners. Within the square there is a discrete area of low resistance, possibly marking a looser dug feature. It appears to lie off-centre. A ‘kidney bean’ shaped arc of high resistance to the south may be related to these features; as the feature is down slope it may be more stony material dragged by ploughing.
A2 lies beside A1 to the west. Its edges are more diffuse but again appear to be continuous ditches with little evidence for any gaps in the corners. The interior shows no obvious features at this survey scale. A3 is the least well represented of the features interpreted as possible barrows. It appears as a right angled line of slightly higher resistance along the same alignment as A1 and A2. There is a small central anomaly of slightly higher resistance in its centre.

Parallels for square ditched or kerbed enclosures of this size can be found at a number of sites, although relatively few have been excavated, or indeed detected by geophysics. Upstanding examples at Garbeg and Whitebridge, Invernessshire (Ashmore 1980) and Laig Bay, Eigg (RCAHMS 2003) are both arranged in orientated cemeteries. These examples are thought to be early historic in date and the monument type is generally associated with Pictish period cemeteries. Many Pictish period examples such as at Garbeg and Ackergill (Close Brooks 1984, Murray and Ralston 1997, 378) and the recently excavated ditched barrows at Forteviot by SERF (Noble and Poller 2008) have gaps at the corners. No such gaps are evident in the examples proposed here. However, there are examples of continuous ditched square barrows. One excavated at Boysack Mills, Angus (Murray and Ralston 1997, 364-368) was of similar size, 5-6 meters across, to the proposed examples here and contained a central burial. A ring-headed iron pin was found in the burial pit and has been allocated a date within the first few centuries AD, but the dating of such objects is a debated topic (ibid., 366).

Square ditched enclosures have been found in association with a broken Pictish symbol stone at Garbeg (Invernesshire), but there is no certain association with Class I symbol stones and Pictish period burials despite considerable circumstantial evidence (Ashmore 1980; Close-Brooks 1984; Mack 1998, 15-16). Even if cemetery or ritual landscapes of the Pictish period were associated with standing Class I symbol stones, they are not necessarily individual commemorative markers (Clarke 2007).

**The possible enclosure and circular feature**
To the east of the symbol stone lies a group of very weak higher resistance features (Fig. 6). The most clearly defined of these is a circular feature (B) with a gap to the southeast, which measures approximately 5-8 meters in diameter. These features were targeted for a 1m x .5m sample survey showing more detail and definition (Fig. 6, bottom). The ditch of this feature suggests a width of up to 2 metres, but subsequent ground-truthing points to a much more modest feature with spread and disturbance from ploughing exaggerating the size of the ditch. The size, shape and orientation of the entrance suggest the feature is a small hut circle (RCAHMS 1990, 2-4). A faint oval shaped enclosure (C) oriented NE-SE can be interpreted surrounding this feature, but this is not completely convincing. There are also two anomalies (D, E) suggestive of smaller round ditched features to the southwest and one circular feature (F) to the east of the possible hut circle. These are approximately 5 meters in diameter and one has a gap to the west.

Permission was granted by the Gleneagles Estates to test the hut feature by putting a small trench across the line of its wall (Fig. 7). The trench (1.5m x 5m) was sited to catch the suspected wall of the feature and part of the interior as well as to investigate an area of low resistance outside of the hut, which was suspected to be part of an encircling feature of posts or a segmented ditch. The topsoil in this area was a ploughsoil approximately 30cm deep and a few mixed finds of modern pottery and glass were contained within it. The arc of the ‘hut’ ditch (002) was cut into the orangey natural gravel (Fig. 8). The fill of the ditch (003) was very similar to the ploughsoil and plough furrows cut across the feature becoming more indistinct towards the south; the ploughsoil/fill appeared to spread to the south (005). The ditch was considerably truncated by ploughing surviving to a depth of only about 10cm and was bowl shaped in section with a steeper internal edge than external edge. The low resistance anomalies were the result of pinkish clay deposits. An area of the clay was investigated in the southern (external to the hut circle) part of the test trench, but appeared to be a natural deposit. Flecks of charcoal were found in the fill of the hut ditch and in the spread of soil, but the only find was a piece of probable late medieval – early post medieval glazed pottery (E Campbell pers comm.). This sherd came from where the plough furrow cut the ditch and thus cannot provide a secure date for the possible hut ditch. A feature that originally
appeared to be a possible small pit or post-hole (004, 005) to the south of the ditch was unconvincing when sectioned and may just be spread from the original ditch fill.

The very truncated remains of this potential hut circle and the nature of the fill of the ditch explain the weak response evident in the resistivity survey, especially when compared to features incorporating more stone. It is heartening, however, that the weak features did relate to archaeology and were not shadows in the topsoil. This points positively to better potential for survival of features such as the enclosure and the possible square barrows to the west, which had stronger signatures. Other weak anomalies visible in the survey area may indicate further archaeological features, but it is felt the results at this stage should not be exaggerated at the risk of ‘creating’ archaeology.

Conclusions

The resistivity survey around the Peterhead, Blackford symbol stone has shown that there is a varying degree of survival and preservation of archaeology within its immediate area although ploughing will likely have truncated all features noted above. Restricted time and equipment issues meant that a finer scale survey could not be undertaken on all targets identified in the preliminary survey, in particular the enclosure and possible square barrows. These areas are not under direct threat from impending development and would perhaps provide suitable targets for survey in the future, including magnetic survey with a gradiometer if metallic interference from the development is not detrimental to results. The presence of potential square barrows should be highlighted in advance of roadworks as these features often occur in small groups and may indeed extend into the line of the new local road. Considerable ‘noise’ in the resistivity readings to the south of the survey area adjacent to the line of the new road has masked any potential features making predictions of archaeological remains here difficult.

The small area of landscape investigated here suggests long-lived activities at this critical point in overland routes along the glen. The symbol stone itself may be a reused prehistoric standing stone, although this remains an assumption. It appears to be situated atop a truncated cairn, which could be of either prehistoric or early
The fort at Loaninghead, presumably Iron Age in at least one of its main periods of use, looked down upon not only these potential prehistoric burial or ritual monuments but also a small settlement site likely dating to the prehistoric period based on its size and shape. The enclosure visible on the APs and now in the resistivity results is of uncertain date. In the Pictish or early historic period, this landscape was redefined by the carving of symbols and potentially by the interment of the dead.

The survey completed several of its objectives outlined above although more work could be done to confirm the nature of the enclosure cropmark visible in APs, for example if the ditch is segmented, and to test the results of features in relation to the symbol stone, particularly the possible barrows. Impending development outside of the scheduled area and the area surveyed in this project is likely to disturb some archaeology, but it may be very truncated in nature. This survey alongside other non-invasive investigations of other landscapes surrounding early historic carved monuments, such as the Craw Stane in Rhynie, Aberdeenshire (Gondek and Noble 2006) are crucial in building a landscape approach to these sculpted stones that considers not just what the images on the stone might mean but also on how people may have chosen to create and engage with these monuments in the past.

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References Cited


Figure 1: Location map of survey area. (Base map Crown Copyright/database right 2007. An Ordnance Survey/EDINA supplied service).
Figure 2: The Peterhead Farm symbol stone and view to the south of Gleneagles (photo by author).

Figure 3: Known features highlighted by the survey. (Base map Crown Copyright/database right 2007. An Ordnance Survey/EDINA supplied service).
Figure 4: Detail showing the enclosure and possible cairn. (Base map Crown Copyright/database right 2007. An Ordnance Survey/EDINA supplied service).
Figure 5: Detail showing the possible square barrows. (Base map Crown Copyright/database right 2007. An Ordnance Survey/EDINA supplied service).
Figure 6: Detail showing the possible hut circle and associated features. (Base map Crown Copyright/database right 2007. An Ordnance Survey/EDINA supplied service).
Figure 7: Photograph of test trench showing hut ditch and plough furrows (taken from the North). (Photo by Author).

Figure 8: Plan of test trench and section of truncated ‘hut’ ditch.
Appendix
List of processes used for each Geoplot figure

Figs 1 & 3
Em8T, 9T, 13L, 12L, 7L, 19L, 17L, 18L
Clip Min=291 Max 530
Despike X=1 Y=1 Thr=3 Repl=Mean
HPF X=10 Y=10 Wt=U
Interpolate Y, Expand – Sin X/X, x2
Interpolate X, Expand – Sin X/X, x2

Fig. 4
Em 5T, 6T
Clip Min=302 Max 560
Despike X=1 Y=1 Thr=3 Repl=Mean
HPF X=10 Y=10 Wt=U
Interpolate Y, Expand – Sin X/X, x2
Interpolate X, Expand – Sin X/X, x2

Fig. 5
Em 1R
Clip Min=1240 Max 1480
Despike X=1 Y=1 Thr=3 Repl=Mean
HPF X=10 Y=10 Wt=U
Interpolate Y, Expand – Sin X/X, x2
Interpolate X, Expand – Sin X/X, x2

Fig. 6 top
Em 5L, 5R, 5B
Clip Min=258 Max 408
Despike X=1 Y=1 Thr=3 Repl=Mean
HPF X=10 Y=10 Wt=U
Interpolate Y, Expand – Sin X/X, x2
Interpolate X, Expand – Sin X/X, x2

Fig. 6 bottom
Clip Min=952 Max=1102
Despike X=1 Y=1 Thr=3 Repl=Mean
HPF X=10 Y=10 Wt=U
LPF X=1 Y=1 Wt=G
Interpolate Y, Expand – Sin X/X, x2
Interpolate X, Expand – Sin X/X, x2
Unprocessed data - Peterhead Farm 2008

Full extent of survey area
(Please note these grids have been edge matched)

Finer survey at 1x.5m over possible 'hut'