

**MOEL-Y-GAER, Bodfari, Denbighshire: survey in 2011.**  
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**Background**

The Clwydian Range in North Wales provides a spectacular upland landscape that contains a series of well preserved Iron Age hillforts (Brown 2004). These have been little studied and are poorly understood other than mainly through the pioneering work of the Heather and Hillforts Project run by Denbighshire County Council. This has included topographic survey, geophysical survey and some small-scale excavation at several hillforts. Moel y Gaer Bodfari, a small hillfort in the northern Clwydian Range, is not within the project area and is, therefore, lacking similar data. In the summer of 2011 we carried out topographic and geophysical survey combined with morphometric analysis of LiDAR data as an initial step in integrating this site within this wider body of knowledge. The next step in expanding that knowledge and moving towards a fuller understanding of this monument within its landscape context will be targeted excavation starting in July 2012.

The Heather and Hillforts Project has the broad ranging objectives of landscape and heritage management to encourage public understanding and participation in outdoor activities including archaeology. It is concentrated on six hillforts within the Clwydian Range Area of Outstanding Natural Beauty (AONB) and differing levels of survey and excavation have taken place and/or are planned. The Project actively encourages collaborative research in the area to build on the existing database of information for late prehistoric sites and landscapes with the intention of providing a full interpretation for academic and public audiences. One such collaboration is the Iron Age of North Wales Project directed by Professor R. Karl, University of Bangor, and Dr I. Brown, University of Oxford. This has led to survey and excavation work in and around two of the hillforts, Caer Drewyn and Moel y Gaer Llanbedr, and fieldwork is on-going.

The importance of hillforts for understanding the north Welsh Iron Age settlement record can not be under-estimated, and indeed has been emphasised within a series of recent research agendas (Haselgrove *et al* 2001; Gwilt 2003; IFA Wales/Cymru 2008). The work proposed here will not only incorporate the hillfort of Moel y Gaer Bodfari into the wider research schemes described above but also provide an opportunity for relatively large-scale excavation compared to what has been carried out so far on Clwydian hillforts, as an aid in beginning to understand the chronological and social complexities of these sites.

**Moel y Gaer Bodfari**

Bodfari is the lowest of the Clwydian hillforts at *c* 200m, positioned outside the village of Bodfari, 5 miles north-east of Denbigh in the northern Clwydian Range, Figure 1. It is situated on the top of a discrete hill strategically located overlooking the confluence of the Rivers Chwiler and Clwyd with an enclosed area of *c* 2ha. The site is a Scheduled Ancient Monument (CPAT HER PRN 102154, FL073).

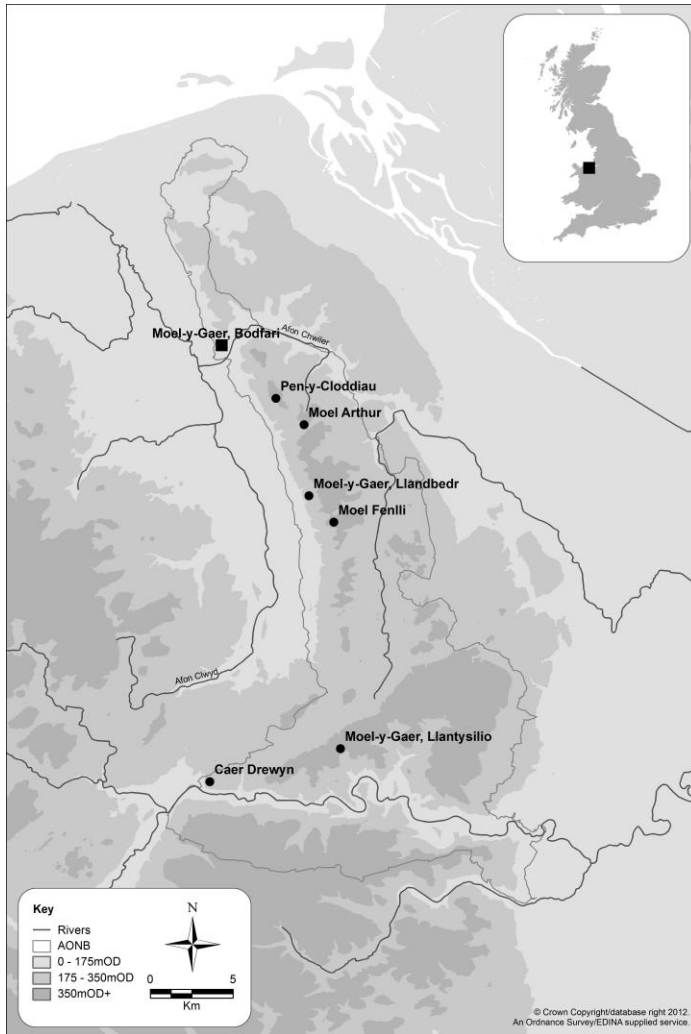


Figure 1. The location of Moel y Gaer, Bodfari, Denbighshire, also shown are the hillforts within the Heather and Hillforts project area.

Before our survey work in 2011 there existed only a minimal earthwork plan by the Ordnance Survey, Figure 2a, and another partial one by Forde-Johnston (1976). Small-scale excavations were carried out in 1908 by Philip Stapleton, a local school teacher, (Stapleton 1909), and reiterated by Davies in his corpus of Flintshire (1949). Stapleton excavated ten trenches in total although the exact positions of these are impossible to relocate from his published plan. His most significant and relevant conclusions are from three trenches all focussed on the western ramparts: a possible entrance through the central area of the inner rampart; the V-shaped profile, ‘6 feet deep’, of a ditch in the north-western area; the rear of a rampart ‘5 feet high’, possibly the middle rampart in the central western area.

### Survey in 2011

A 1m Digital Terrain Model (DTM) for the 1km tile corresponding to the hillfort was obtained from the Environment Agency through the Geomatics Group website. The DTM was downloaded as an ArcGIS ascii grid file and was imported into Landserf 2.3 for processing. Surface parameters (slope, aspect and mean curvature) were calculated at multiple scales of analysis using Landserf 2.3 and exported to ArcGIS 10. Morphometric analysis of the LiDAR data provided a basis for the topographic survey, Figure 2b, mean curvature being the most useful and informative, Figure 4.

Fieldwork took place for two weeks in August 2011. At this time of year vegetation, particularly bracken, was a problem and despite extensive clearance by the landowner some areas remained inaccessible. The topographic survey was undertaken at a scale of 1:500 using a Nikon DTM330 total station. A control network was established using a closed traverse and tied into the Ordnance Datum using a Trimble Global Positioning System. Earthworks and topographic features within the survey area were recorded by means of a series of readings taken at regular intervals along their length. Checking of the topography and producing the hachuring were completed in March 2012 when the bracken cover was low, Figure 3.

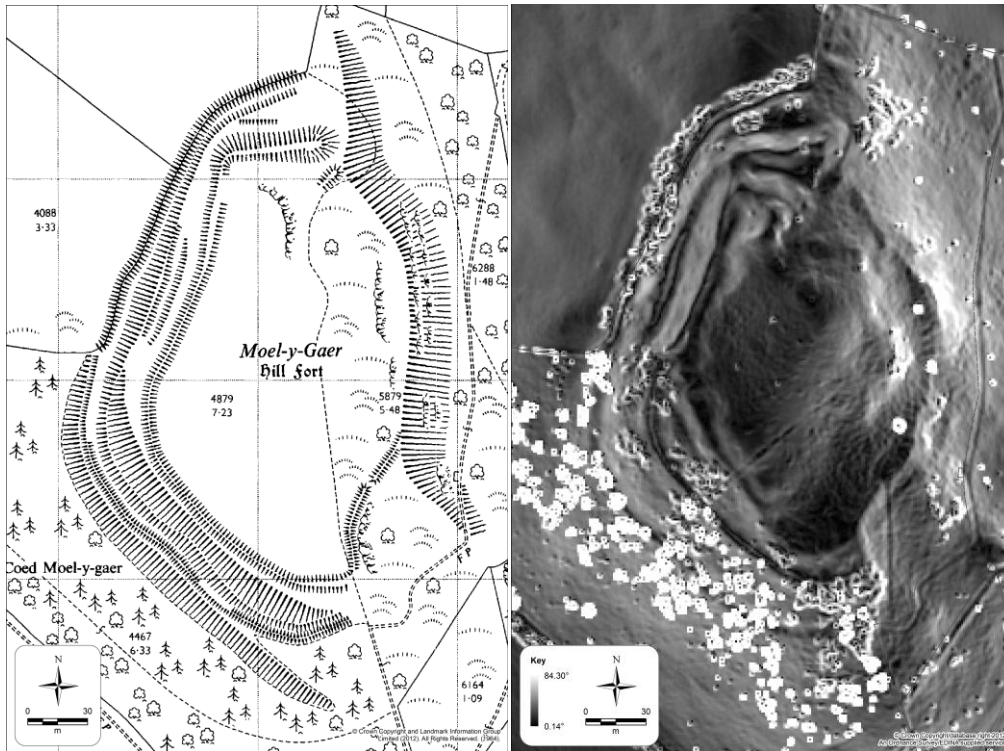


Figure 2. a) Ordnance Survey earthwork plan of Moel y Gaer Bodfari (1964, Crown Copyright) and b) LiDAR image.



Figure 3. Topographic survey of Moel y Gaer, Bodfari.

Our topographic survey has shown significant differences to the existing plan and there are several areas of uncertainty regarding the actual circuits of ramparts and possible phasing which can only be resolved by excavation. It is possible that this site started as a uni-vallate enclosure represented by the inner rampart, which was then enhanced by the addition of more ramparts on the northern and western sides at least. In the north-western quadrant there is a good run of three ramparts, the inner and middle with outer ditches although this is not clear for the outer rampart which may, alternatively, be a form of counterscarp bank. Stapleton's 1908 trench located in this area, probably the inner ditch, identified substantial amounts of charcoal from within a ditch fill which would be valuable for C14 dating if re-located, Figure 8, area 2. The north-western corner of the inner

and middle ramparts is very disturbed probably due to quarrying activity inside the inner rampart. All the way down the inside of the western inner rampart is a series of possible quarries and perhaps quarry hollows which, if Iron Age, may contain stratigraphy through hill-wash. In the south-western quadrant it is uncertain whether the inner rampart continues although the both the LiDAR and magnetometry do suggest so, Figures 4 and 5, and this will be tested by excavation, Figure 8, area 1c. The structural characteristics of the inner, middle and outer ramparts are unknown.



*Figure 4. Mean curvature derived from LiDAR data overlain on topographic data.*

The ramparts on the southern and eastern sides of the site are more difficult to identify and interpret due to a series of hollows which could be either natural due to ice-plucking or quarries. Again, the LiDAR does suggest a rampart on the eastern side and a short length has been identified running southwards from the eastern side of the northern entrance. At the southern end of the site a single bank cuts off the three western ramparts and continues down slope away from the hilltop. Its date is uncertain and only excavation may establish whether this is, in part at least, original Iron Age rampart or something associated with a possible quarry on the southern slopes.

The northern entrance appears to be in-turned and the main original entrance, Figure 8, area 3, and possibly T-shaped as suggested by Forde-Johnston (1976, Figure 129).

Geophysical surveys, both magnetic and electrical resistance, were carried out on a 20m grid aligned from North to South. Complete coverage of the interior and parts of the north-western inner rampart were achieved with magnetometry and partial coverage with resistivity. Magnetic survey, Figure 5, was carried out using a Bartington Grad601-2 dual sensor gradiometer, capable of measuring the magnetic field to the nearest 0.1nT. The survey area was surveyed by means of a series of zig-zag traverses, with a 1m separation between traverses (1 line/m) and readings taken at 0.125m intervals (8 samples/m).



*Figure 5. Magnetometry data overlain on topographic data.*

Resistance survey was undertaken using a Geoscan RM15D Advanced resistance meter system with a PA20 multi-probe array and a MPX15 multiplexer. Multiple probe configurations were used for each of the survey areas (interior, ramparts and Northern entrance):

- Twin Arrays, Figure 6, – six mobile probes, configured to obtain readings from individual pairs of probes with 0.25m (0.125m offset), 0.50m, 0.75m, 1.00m, 1.25m and 1.50m probe separations, and one pair of remote probes;

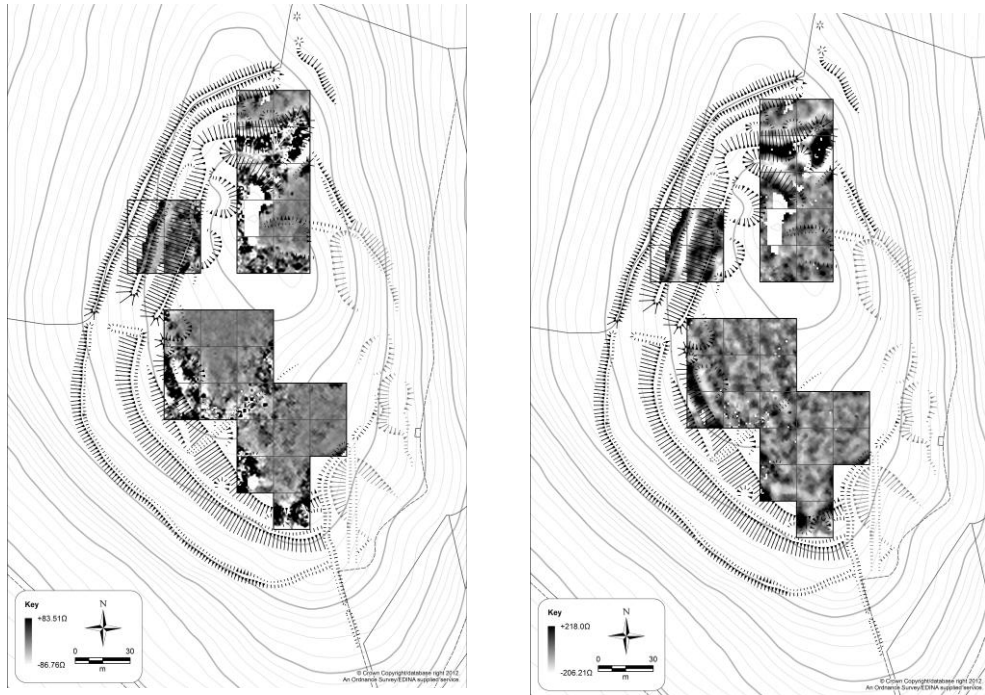
- Wenner Array – two pairs of mobile probes with a probe separation of 0.50m;

- Double Dipole Array, Figure 7, – two pairs of mobile probes with a probe separation of 0.50m.

Each survey area was surveyed by means of a series of zig-zag traverses, with a 1m separation between traverses (1 line/m) and readings taken at 1m intervals (1 sample/m). Survey data was processed using ArcheoSurveyor 2 and processed composites were exported to ArcGIS 10.

The combination of topographic and geophysical surveys shows several areas of interest in the interior of the hillfort. A substantial house platform just within the northern entrance correlates with a circular anomaly in the magnetometry and through excavation could provide information relating to occupation and use, Figure 8, area 1a. In the central area of the hillfort a group of circular anomalies (especially in the magnetometry) suggest discrete cut features,

Figure 8, area 1b, possibly pits although these are not common within Clwydian hillforts. In the south-western area a possible rectangular structure may be of Roman or later origin, Figure 8, area 1c, this is of interest considering Roman finds from the area and the postulated location of Varae, the Roman station mentioned in the Antonine Itinerary (Davies 1949, 41).



*Figure 6 (left). Resistivity data (Twin 0.5) overlain on topographic data.  
Figure 7 (right). Resistivity data (Double-Dipole) overlain on topographic data.*

### **Public involvement**

In collaboration with The Heather and Hillforts Project, specifically Fiona Gale the Denbighshire County Archaeologist and Erin Robinson the Heather and Hillforts Project Officer, we jointly organised an information evening, two guided walks and a site Open Day within the two weeks of work. In total more than 60 local people took part in these events, many from the Bodfari History Group, which included hands-on Total Station and Resistivity Meter experience. This was funded through a grant from the Clwydian Range AONB Sustainable Development Fund (SDF) obtained by Fiona Gale.

### **Future work**

The intention is to hold a three or four year campaign of excavation for two weeks per summer, opening two or three trenches per year. Scheduled Monument Consent will be applied for separately for each of the years to allow a degree of flexibility in the design and proposals allowing changes to be made based on what is found each year and how that impacts on our changing interpretation and understanding. As stated above, none of the other Clwydian hillforts have been exposed to this degree of survey and excavation and this is seen as an opportunity to study one in more detail both for its own intrinsic research value but also to help understand the group as a whole.

The general aims of the proposed excavations are:

1. To evaluate and interpret the earthwork survey and geophysical anomalies
2. To evaluate and re-interpret the excavations carried out in 1908
3. To evaluate the threat of rabbit and sheep damage to the archaeological deposits
4. To involve local people in the understanding of this and surrounding hillforts.

The interpretive focus of this work will be: To establish the possible function(s) of the hillfort, permanent or periodic occupation, domestic and ritual activities, the character of internal structures and features, the character of the ramparts; to establish a chronology and sequence for the hillfort, interior and ramparts, through relative phasing and if possible finding material for C14 dating; to provide a comparative site for those within the Heather and Hillforts Project and the Iron Age of North Wales Project and characterise similarities and differences. The areas of interest for excavation over the total period are shown in Figure 8.



*Figure 8. Areas of interest for possible excavation based on geophysics and topography: 1a, b and c the interior; 2 the ramparts (to include areas on the east and south); 3 the northern entrance.*

## **Acknowledgements**

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### **Bibliography**

Brown, I 2004. *Discovering a Welsh landscape. Archaeology in the Clwydian Range*. Macclesfield: Windgather Press.

Davies, Canon E 1949. *Prehistoric and Roman remains of Flintshire*. Cardiff: William Lewis.

Forde-Johnston, J 1976. *Hillforts of the Iron Age in England and Wales. A survey of the surface evidence*. Liverpool: Liverpool University Press.

Gwilt, A. 2003 Understanding the Iron Age: towards an agenda for Wales. In. C.S. Briggs (ed.), *Towards a Research Agenda for Welsh Archaeology*, 105-22. BAR Brit.Ser. 343, Oxford: Archaeopress.

Haselgrove, C, Armit, I, Champion, T, Creighton, J, Gwilt, A, Hill, J D, Hunter, F and Woodward, A 2001. *Understanding the British Iron Age: An Agenda for Action*. Salisbury: Wessex Archaeology for English Heritage and Historic Scotland.

IFA Wales/Cymru 2008. Introducing a Research Framework for the Archaeology of Wales. Cardiff: CADW. (<http://www.archaeoleg.org.uk>).

Stapleton, P 1909. Exploration of Moel-y-Gaer, Bodfari. *Archaeologia Cambrensis*, 6th series, IX, 232-238.

### Websites

Heather and Hillforts Project: <http://www.heatherandhillforts.co.uk> [accessed May 21 2012]

Iron Age of North Wales Project: <http://www.bangor.ac.uk/history/research/projects.php.en> [accessed May 21 2012]