



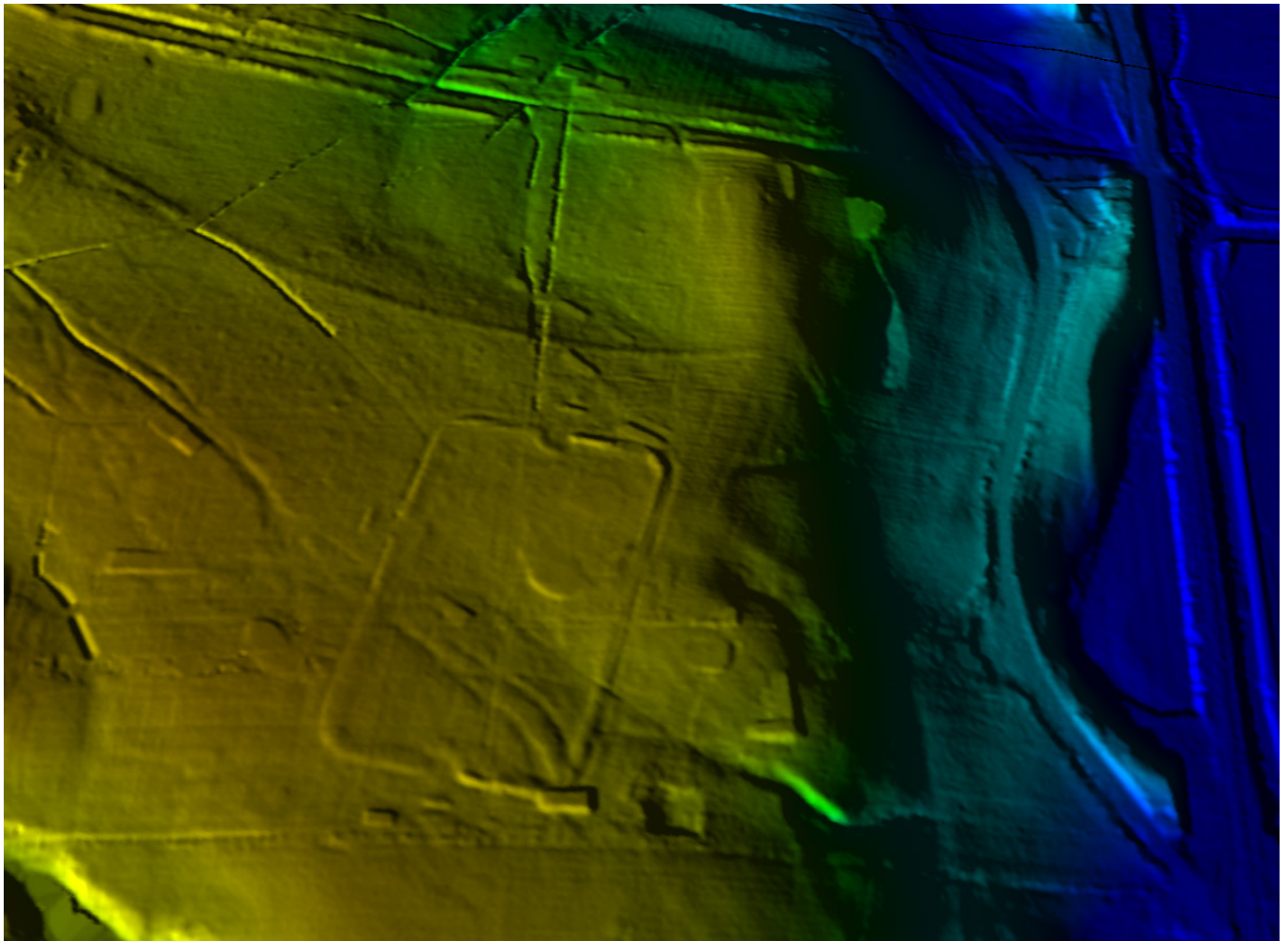
Historic England

Historic Places Investigation

Haltwhistle Golf Course, Greenhead Carlisle Glenwhelt Leazes Temporary Camp: Aerial Assessment

Cara Pearce

Discovery, Innovation and Science in the Historic Environment



Haltwhistle Golf Course Greenhead, Carlisle

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SUMMARY

An area surrounding Glenwhelt Leazes Roman temporary camp (NLHE: 1010993) was mapped in order to better understand the monument for heritage management purposes. The survey used lidar as its main resource in order to enhance NMP mapping of the site which was undertaken in 2003 as part of the Hadrian's Wall NMP project. At the time of that project lidar was not a widely available dataset. As part of the programme of work, the mapping undertaken during the project was used to create plans aimed at making the site accessible to stakeholders and visitors. The report outlines the form of the monument, impacts of past land management and land use, and discusses how to present such data to a non-archaeological audience.

CONTRIBUTORS

Aerial mapping, illustrations and reporting undertaken by Cara Pearce with comments and guidance from Matthew Oakey.

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DATE OF SURVEY

November 2016

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Cover. Lidar DTM model of Glenwhelt Leazes camp. ©Historic England; source Environment Agency.

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INTRODUCTION

The Roman temporary camp of Glenwhelt Leazes (NRHE: 13860), located on Haltwhistle Golf Course (NY 65600 65600), is situated within one of the most well-known Roman military landscapes as part of the Hadrian's Wall World Heritage Site. The camp is a scheduled monument (NHLE: 1010993) and is recorded in conjunction with a stretch of Hadrian's Wall and a number of associated Roman features; including a second smaller camp (Fig 1).

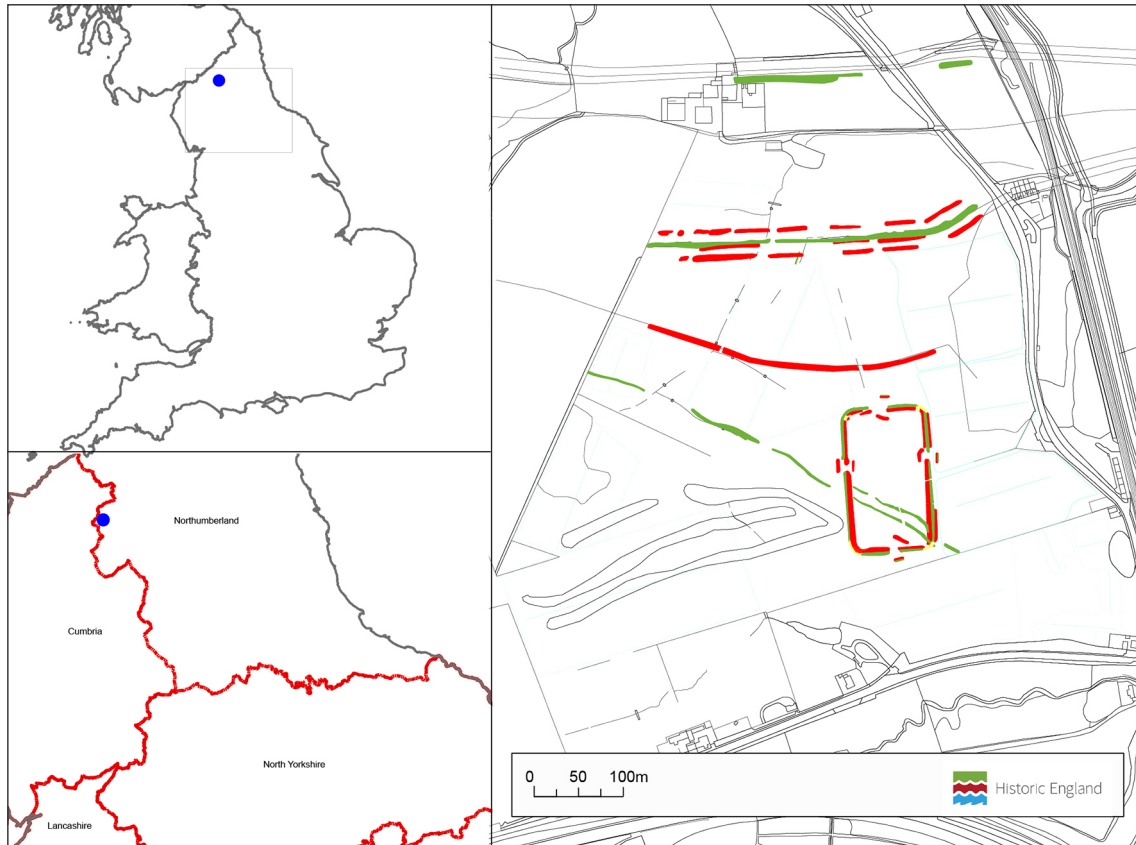


Fig 1: Location Map ©Historic England. Base map © Crown Copyright and database right 2017. All rights reserved. Ordnance Survey Licence number 1000190.

The site has been assessed a number of times. It was surveyed and recorded by the Royal Commission on the Historic Monuments of England (RCHME) as part of a national assessment of Roman camps in England (RCHME 1995) and later was mapped from aerial photography as part of the Hadrian's Wall National Mapping Programme (NMP) project in 2003 (Oakey 2009). That mapping provided the basis for this interpretation which aimed to enhance the NMP mapping through the use of lidar available through the Environment Agency.

The request to reassess the temporary Roman camp at Glenwhelt Leazes was made by the Inspector of Ancient Monuments for Hadrian's Wall in order to facilitate improved understanding of the site by landowners and therefore improved land

management. It is hoped that this will allow a better understanding of the monument and its current condition as the camp earthworks are very subtle and reportedly difficult for non-archaeological professionals to identify on the ground among the features of the golf course. Historic photography was also used to produce a narrative of land use in order to identify its impacts on the monument. A further aim for the project was to create illustrations for an interpretation board at the site, generating a sense of ownership from stakeholders by articulating the nature, extent and value of the camp. Similar interpretation material was created from analytical earthwork survey for another Roman camp at Chapel Rigg, located 1km directly west of Glenwhelt Leazes, as part of a previous casework request.

The initial aim of the project was to map the camp in isolation for the above purposes. The scope of the mapping was expanded to encompass a small area of 0.5sq km across Haltwhistle Golf Course and to map all features considered to be Roman in date within the study area in order to contextualise the site. It was envisaged that this level of understanding would help to articulate the value of the site to multiple stakeholders (eg landowner/land management, golf course users, site visitors, Historic England).

DESCRIPTION OF THE MONUMENT

Located at 165m OD, Glenwhelt Leazes is situated in a fairly prominent position commanding clear views of the surrounding landscape (RCHME 1995, 102). The camp (Fig 2) appears to be easily accessible on its north, west and southern approach however there is a steep drop to the east where the ridge on which the site is located is truncated by the Tipalt Burn. The camp encloses an area of 1.2 hectares and is rectangular in plan with rounded corners, typical of the playing card shape commonly associated with Roman camps. It is formed of an internal bank and external ditch with four opposing entrances, one in each side, and is oriented directly north-south. The northern and southern entrances are located centrally, however the east and west entrances are situated a third of the way down the north-south orientated banks forming the sides of the monument. The entrances comprise an external short traverse with an internal clavicula. These are defensive features with the short linear traverse designed to obscure the entrances to the fort, controlling the approach to the site, with the curved bank of the clavicula forcing the direction of movement into the camp. This combination of entrance features is particularly unusual with only two examples identified in the RCHME survey (RCHME 1995, 12-13). The second example, Chapel Rigg, is situated 1km further west along the escarpment on which Glenwhelt Leazes sits and it may be that the similar morphology is indicative of contemporaneity between the sites.

The camp is situated approximately 50m south of Stanegate Roman road, an east-west route way linking Corbridge to Carlisle which pre-dates the Wall and associated features (Margary 1957, 117). It is fairly well preserved along this stretch and can be seen as an agger as it crosses the golf course, although the raised road surface is less clearly defined where truncated by golf course features. Further to the west, beyond the limit of the study area, the route of the road can only be traced as a wider ploughed-out mound. There is no archaeological evidence to identify the relationship between the road and the camp. There is a change in the direction of Stanegate to the west of the camp. While this could suggest that the course of the road was avoiding the camp it may alternatively relate to an easier crossing of the Tipalt Burn and is therefore not necessarily indicative of the camp pre-dating the road (RCHME 1995, 103).

Running parallel to Stanegate, the Vallum which served to demarcate the militarised zone of the Wall, can be seen as a distinct earthwork comprising stretches of ditch flanked by two large banks on either side with intermittent narrow irregular banks, possibly re-cutting upcast, directly along the edge of the ditch scarp. The ditch is fairly continuous across the study site, except where truncated by modern field boundaries or drainage ditches, however the banks are less consistent in their preservation. North of the vallum can be seen the line of Hadrian's Wall as a subtle ditch, further to the west it is more marked in appearance where the northern scarp reportedly has a height of 1.2m (*see* Fig 6). Between Hadrian's Wall and the Vallum is the projected route of the Roman Military Way which potentially follows the course of the road to the golf club house although no trace either side of the road was visible from either aerial photography or lidar.



Fig 2: Mapping of the camp (a) and associated features including Stanegate (b) and the Vallum (c). Banks are shown in red, ditches in green and purple line depicts features levelled since the earliest photography. © Historic England. Base map © Crown Copyright and database right 2017. All rights reserved. Ordnance Survey Licence number 1000190.

PRESERVATION OF THE CAMP

Historic and current land uses have led to fairly poor preservation of the camp earthworks. A series of photographs from 1966 to 1985 records the development of the golf course and its impact upon the camp. It is possible to track the attrition of the monument and link it clearly with the development of the golf course. Whilst the site was scheduled in 1928, it is clear from the photography that the western side of the monument is fairly subtle and the camp would have been difficult to identify at the time of implementation and it is likely that the land owners were unaware of its significance.



Figure 3: Detail of golf course with the location of the camp outlined. HSL/UK/78033 1833 28-JUL-1978 ©Crown copyright. Historic England Archive.

As a general trend the earthworks are better preserved to the north of the site where there has been less ground disturbance due to the likely use of this area as pasture or rough grazing. There are a number of agricultural impacts across the study area, predominantly in the form of field boundaries, drainage systems and ridge and furrow.

The northern entrance is the best preserved as it is located, for the most part, between golf course features. The traverse is clearly defined whereas the clavicula is less distinct but still discernible. A north-south boundary running through the monument was met by an east-west boundary to form a T junction which divided the interior of the camp into three sections. The north-south boundary appears to have truncated the western side of the northern entrance, avoiding the traverse and impacting upon the western side of the clavicula. These two boundaries are visible on the 1st edition 1:10,560 OS mapping (surveyed 1861, published 1865). By the time of the 3rd edition (revised 1920, published 1925) the north south boundary no longer continues across the centre of the monument, however south east corner of the monument is still partitioned off and this boundary is maintained until 1978 (Fig 3).

This division of the interior protected this corner of the monument from the original golf course which slowly encroached on the monument during the 1970s as the boundaries were no longer maintained. The clavicula is also impacted upon by the fairway of the 16th hole. Over time, the area surrounding the 16th green has got wider and has impinged upon the tail of the clavicula. This appears to have slightly reduced the edge of the earthwork at this location possibly due to increased activity in the area from mowing and walking. The repeated traffic over the very subtle feature by the widening of the fairway appears to have caused further erosion.

The north-east corner of the monument historically has been the best preserved. There is a small pathway which is cut through the north edge by the corner, this is not shown on any mapping but can be seen on photography dating to the 1930s (the earliest photographic source addressed), and may have been originally caused by human footfall (Fig 4). This break in the earthwork appears to have been reused and recut in later dates, potentially as access to the golf course. In photography from 1975, the path appears more distinct with more defined edges. By this time the course had developed over the majority of the interior and it may well have been maintained as a path from this point on. The 15th tee is located immediately north of the north-east corner of the camp and considerable levelling can be identified on the lidar.

Post medieval ridge and furrow can be seen to the east of the camp. The plough headland appears to overlie the outer bank of the camp ditch in places and the height of the camp bank appears greatly reduced. The fairway for the 17th hole crosses the camp earthworks and it is likely a combination of the post medieval farming and activity on the golf course which has caused the erosion and spread of the bank at this location. Some drainage channels were cut, likely in relation to the later land use as rough grazing. The traverse on the eastern entrance is very subtle and possibly appears enhanced by the ditch along the outside of the bank, but the clavicula in the interior is much more distinct and is not affected by the golf course where it is situated between the 16th green and 7th fairway.



Fig 4: Before the establishment of the golf course. RAF/26/AC 9913 22-OCT-1930 Historic England RAF Photography.

The south-east corner is not visible having been masked by the construction of the 8th tee, it is unclear whether the monument is still standing under the built up tee platform or if it has been removed completely. The ditch along the southern edge, east of the entrance is particularly wide and distinct and has possibly been excavated to form the mound for the tee as it does not appear as wide on photography. The south-east corner does not seem to have a clearly defined bank on much of the photography however the RCHME survey suggests it stood to 0.7m in height. There is a sinuous trackway up to 12m wide, formed of two intermittent roughly parallel ditches, which is thought to be prehistoric in origin. The feature is clearly traceable from some 650m north west of the camp and appears to be overlain by the bank and ditch forming the western side of the camp. It is likely that the hollow this created was reused at a later date, possibly for drainage and subsequently the route of the track appears to cut the south east corner of the camp earthworks.

The ditch of the southern traverse is particularly clear whilst the mound is a little less distinct. Only subtle traces of the clavicula can be seen and the fairway for the 14th hole may have contributed to further erosion. The golf course has had the greatest

impact on the southern section of the monument as from its first iteration it has occupied this area, slowly developing northwards inside the monument.

The south-west corner appears to be denuded on lidar, possibly associated with the establishment of the golf course or eroded more gradually over time. A number of fairways lie over the western edge of the monument and it is therefore fairly indistinct until the north-west corner. This is likely due to the traffic over the banks by foot and maintenance vehicles. The traverse here is very clear and is protected in the rough between two fairways, the clavicula is much more eroded.

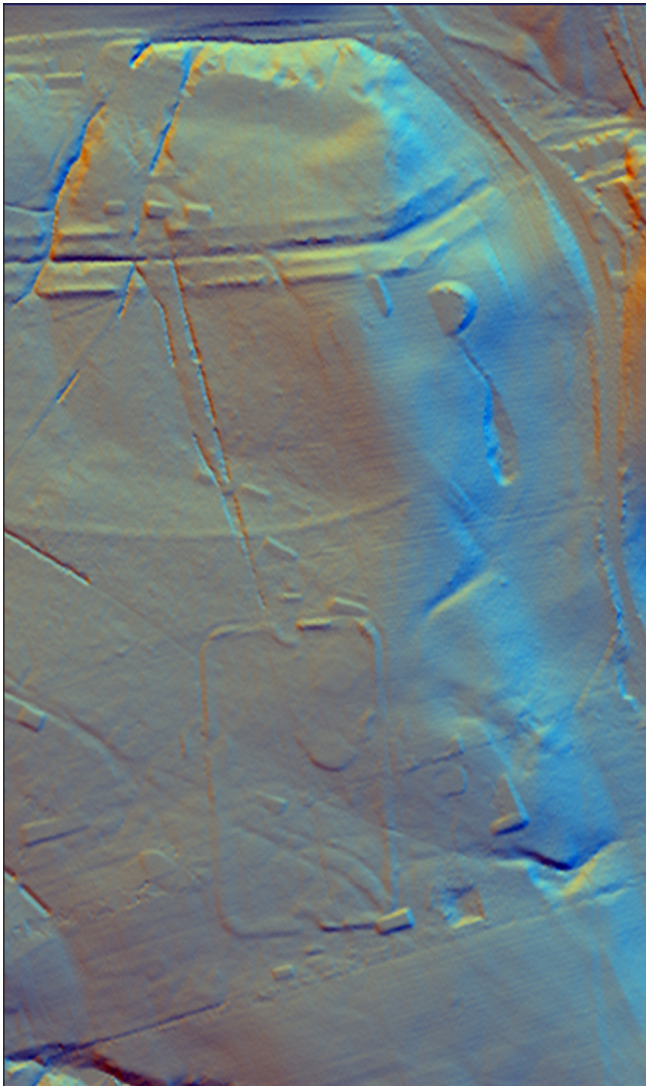


Figure 5: Lidar DTM model showing the camp earthworks in 2010. The rectangular golf tees are visible across the site. © Historic England; source Environment Agency.

PRESENTING THE DATA

Whilst the conventional NMP mapping, provided as an image and as a CAD drawing with attached data, is ideal for the management of the site by archaeologists, it may not be the most accessible way to convey the site and its significance to non-archaeological stakeholders. One of the main difficulties for the management of Glenwhelt Leazes was the ability for landowners to develop an appropriate management scheme when faced with the challenge for non-specialists to identify the subtle earthwork features on the ground. The golf club is partially aware of the archaeological remains in their locality and advertises this history on their website, using this to enhance the experience of their members and to attract visitors to the course. The Roman camp is not mentioned at all suggesting that the site and its significance is not well understood.

There is the intention for an interpretation board to be erected at the site in order to inform visitors and possibly generate a sense of interest and ownership of the camp remains amongst members of the golf club and locals alike. In order to assist with this a number of versions of the mapping, designed to best articulate the form and location of the camp, were produced in order to determine the best way to communicate the site to a non-archaeological audience (Fig 6). For these plans, mapping was simplified and reduced to depict only Roman features on a two-tone plan depicting banks in one colour and ditches in another. This will be accompanied by descriptive text, identifying the features of the camp, surrounding archaeology and the significance of the site.

The widespread use of Google Earth has meant that, in general, audiences are more familiar with seeing local landmarks from an aerial perspective. The first plan generated used orthophotography as the basis of the mapping. This provides a wide range of contextual information including the layout and landscaping of the course and its wider environment as well as the mapped archaeology. The second design was simpler in appearance. Key features such as main routes were transcribed from Ordnance Survey mapping, the extent of the golf club was highlighted and the golf course was mapped from 2015 orthophotography. On both plans, the location of the tees was indicated to help visitors situate themselves in relation to the course.

With the aim of the plan to not only identify the location of the site but the significance of the camp, it was decided that it would be best to depict and label well known archaeological features in order to visually articulate the significance of the camp within a recognisable archaeological landscape. Whilst the first image may be considered to be the more engaging one, and therefore the best suited to demonstrate the site and its location to a visitor audience, the camp appears somewhat distinct from its landscape as it overlies the background photography. The second image shows the camp underlying the golf course, which is shown as a transparency, and makes it readily apparent where the course impacts upon the monument. This sense of how the course and the camp interact is particularly helpful for heritage management purposes as it clearly demonstrates, on a measurable plan where the golf course features impact upon the monument.

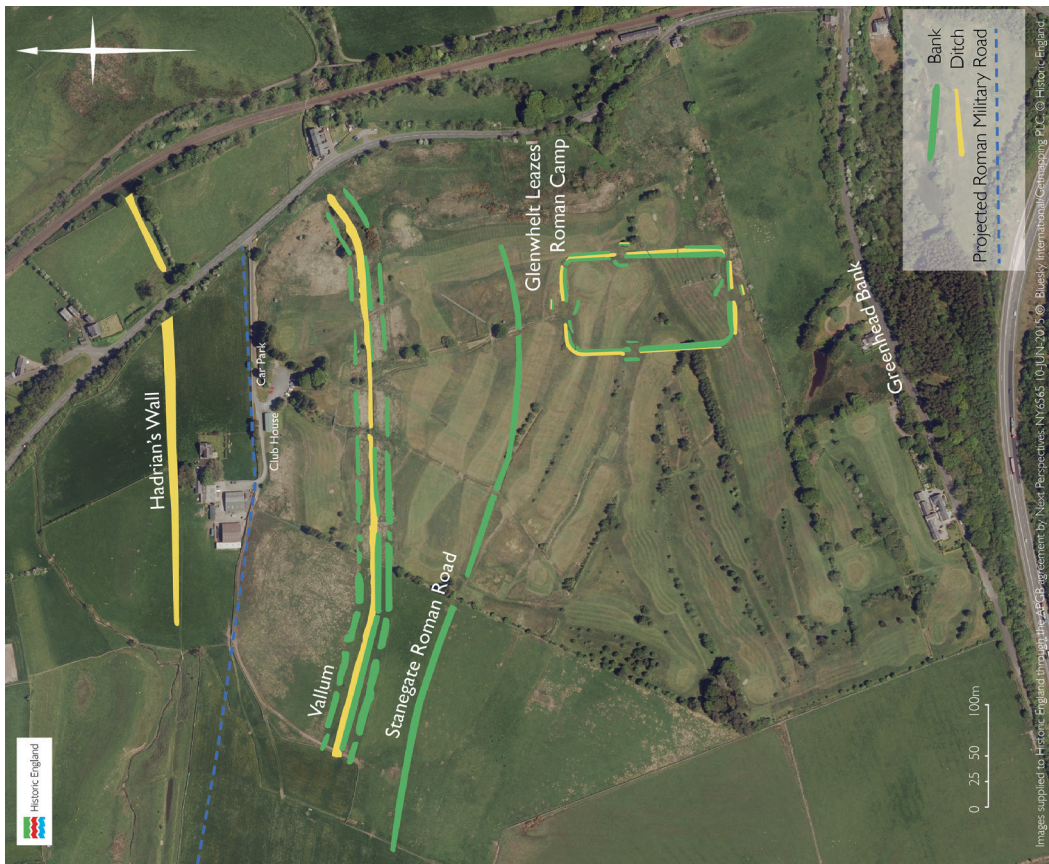


Fig 6: A comparison of the two drawings produced for the interpretation board. The first image displays the mapping of the Roman features over orthophotography (provided by APGB) and the second includes mapping of the golf course layout.

DISCUSSION

The use of the lidar has shown the monument to be largely extant, if very subtle, for almost the entire circuit of bank and ditch. Only those areas where the camp has been truncated by drains, field boundaries and golf course features have been significantly levelled. Prior to construction of the golf course, the land use did not have a major impact upon the monument.

The main impacts of the golf course have included erosion of the banks and possible infilling parts of the ditch for greens and fairways, this is particularly evident in the south-west corner and central section of the eastern bank. The course appears to have been instated before 1966 and was later expanded and developed further between 1975 and 1985. The field boundaries crossing the camp, whilst still in use, appear to have contained the development of the golf course when it was first constructed. This accounts for the greatest degree of erosion seen in the south-west corner which has formed part of the golf course since its establishment. As the golf course spread, these boundaries became redundant and the by 1985 the entirety of the monument was covered by the golf course.

It is possible to see how the golf course developed in a number of phases through the variable preservation of the camp. The southernmost part has always been under the golf course and as a consequence is the least well preserved portion. The northern side, which has never been under any of the greens or fairways installed as the golf course developed, stands to a height where it is more easily recognisable on the ground.

Whilst the plan of the site has not changed and no new features were identified, the re-assessment of the camp has provided the opportunity to generate a relatively up to date appraisal of the condition of the monument. It is clear that the earthworks are more denuded than they were when originally surveyed in 1994 and that careful management of the site is required to avoid causing further erosion. It is hoped that the plans produced, in conjunction with an interpretation board for the site, will enable better management of the site based on clear information of the site, its location and current state of preservation.

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RCHME 1995 *Roman Camps in England: The Field Archaeology*. London: HMSO.

APPENDIX 1. METHODS

All aerial photographs available from the Historic England Archive were assessed. This included oblique and vertical photography, both those used as part of the Hadrian's Wall NMP project and any new photography obtained since 2003. Google Earth was assessed and further online resources such as geology mapping accessed via the British Geological Survey Viewer website were also addressed.

Lidar was available from the Environment Agency at a resolution of 1m for the area studied, captured 3rd March 2010. Both the digital terrain model and the digital surface model were downloaded as gridded ASCII data. This was then processed as a 16 direction hillshade model using Relief Visualisation Toolbox to allow for the model to be lit by multiple directions in one image.

Any oblique or vertical imagery used for mapping in the assessment we scanned at a high resolution and rectified using Aerial 5.36. Control for the rectification was derived from orthophotography supplied by Next Perspectives through the Aerial Photography for Great Britain (APGB) and was supplemented where necessary by Ordnance Survey 1:2,500 mapping. The error margins, when rectifying photography, are usually within $\pm 2\text{m}$ of the source used for control.

Archaeological information was transcribed from lidar and photography using AutoCAD Map 3D 2015. Additional comments regarding the state of preservation of the site, as determined from the lidar were added to the National Record for the Historic Environment and are available through PastScape website.

APPENDIX 2. PHOTOGRAPHS CONSULTED

SORTIE NO	FRAME NO	DATE FLOWN
RAF/106G/UK/1392	3178-3181	10-Apr-46
RAF/106G/UK/1392	3289-3292	10-Apr-46
RAF/106G/UK/1392	4178-4180	10-Apr-46
RAF/26/AC	9907	22-Oct-30
RAF/26/AC	9909	22-Oct-30
RAF/26/AC	9911	22-Oct-30
RAF/26/AC	9913	22-Oct-30
OS/75400	7-8	28-Sep-75
OS/72259	211-214	17-Jul-72
OS/72259	297-300	17-Jul-72
OS/66169	88-90	20-Jul-66
OS/69248	13-16	12-Aug-69
OS/69248	61-64	12-Aug-69
OS/85140	12-15	03-Jun-85
HSL/UK/78033	1831-1833	28-Jul-78
HSL/UK/78033	1843-1846	28-Jul-78
HSL/UK/78033	1850-1854	28-Jul-78
HSL/UK/78033	1875-1878	28-Jul-78

Table 1. Historic England Archive photographs consulted.



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