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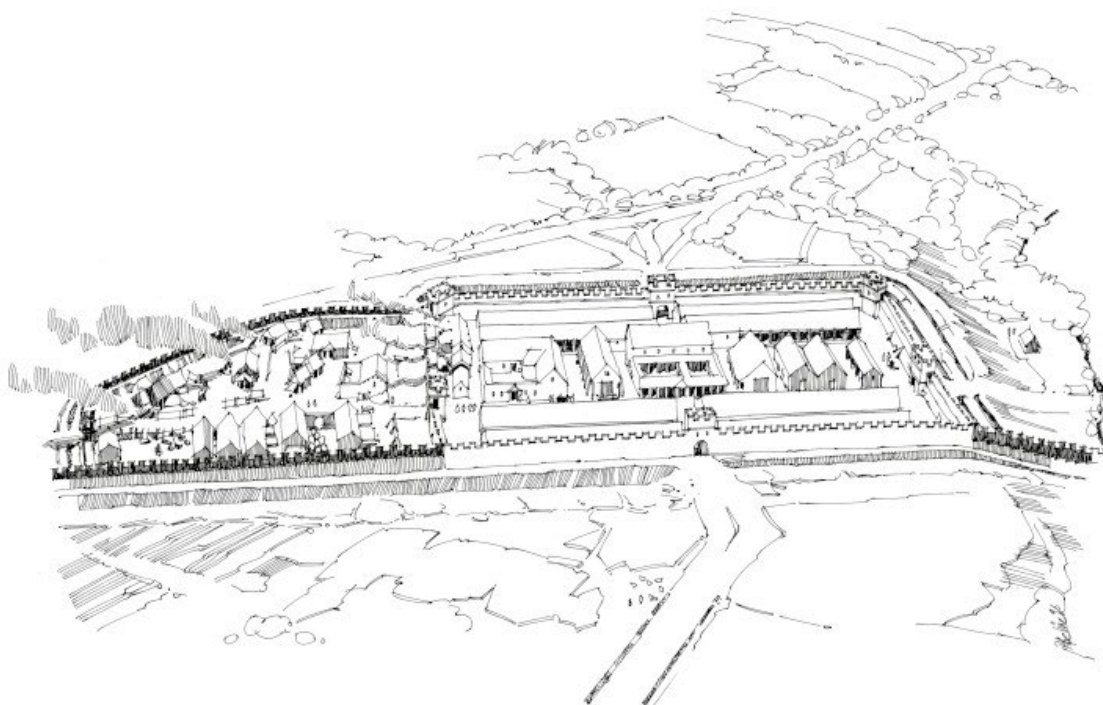
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Last Reviewed: 2020

STATEMENT OF SIGNIFICANCE

ANTONINE WALL – CASTLECARY FORT



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HISTORIC ENVIRONMENT SCOTLAND STATEMENT OF SIGNIFICANCE

ANTONINE WALL – CASTLECARY FORT

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PART A: FRONTIERS OF THE ROMAN EMPIRE WORLD HERITAGE SITE

Introduction

In 2008 the Antonine Wall was inscribed by UNESCO to become part of the Frontiers of the Roman Empire World Heritage Site (FREWHS). This already included Hadrian's Wall (inscribed in 1987) and the German *Limes* (inscribed in 2005). To be inscribed on the world heritage list, a site must meet at least one of the criteria for the assessment of Outstanding Universal Value (OUV) as defined by UNESCO¹. A fuller exposition of the OUV of the site is given in Appendix 3 below or can be found on the UNESCO website.

This brief introduction sets the Antonine Wall in the context of the FREWHS and outlines the justification for inscription of the Antonine Wall on the World Heritage List.

The Historic Environment Scotland (HES) Statement of Significance for Castlecary Fort which follows at Part B, recognises this individual site as an integral part of the wider Antonine Wall World Heritage Site. The Assessment however focusses in on Castlecary Fort itself for a closer examination of its individual history, development and range of heritage values.

It is also acknowledged that HES directly manages only a small proportion of the whole Antonine Wall WHS. This assessment is intended to inform understanding and management of those sites (or 'Properties in Care') for which HES has direct management responsibility:

Bantaskin (PIC167); Bar Hill (PIC168); Bearsden Bath-house (PIC169); Castlecary Fort (PIC170); Croy Hill (PIC171); Dullatur (PIC172); Garnhall Farm (PIC173); Kinneil House (PIC152); Kirkintilloch (PIC174); Rough Castle (PIC175); Seabegs Wood (PIC176); Tollpark (PIC177); Watling Lodge (PIC178) and Watling Lodge West (PIC179).

The Frontiers of the Roman Empire WHS (FREWHS)

The Antonine Wall is one of only three artificial frontiers constructed by the Roman army in Europe. Collectively, they form a serial trans-national World Heritage Site, the FREWHS; the OUV of which lies in the survival of the 2nd-century Roman frontier system across Europe, North Africa and the Middle East. This reflects the development and breadth of Roman military architecture and power. Together, the inscribed remains form an extensive relict cultural landscape which displays the unifying character of the Roman Empire, through its common culture, but also its distinctive responses to local geography and political and economic conditions. Each component part is a substantial reflection of the way resources were deployed in a particular part of the Empire.

¹ For more information on Criteria and the Inscription process, see <https://en.unesco.org/>

The Antonine Wall within the FREWHS

For a short period in the mid second century the Antonine Wall formed the north-western frontier of the Roman Empire. The Antonine Wall was built under the Emperor Antoninus Pius in the 140s AD as an attempt to conquer parts of northern Britain, and extends for some 60km across central Scotland from the River Forth to the River Clyde. Through its military and civil constructions, it demonstrates cultural interchange through the extension of Roman technical skills, organisation and knowledge to the furthest reaches of the Empire. It embodies a high degree of expertise in the technical mastery of stone and turf defensive constructions. As it was in use for only a single generation, it provides a dated horizon at a particular point in time and offers a specific insight into how the frontier was designed and built. Together, the remains of the frontiers, consisting of vestiges of walls, ditches, earthworks, fortlets, forts, fortresses, watchtowers, roads and civilian settlements, form a social and historical unit that illustrates an ambitious and coherent system of defensive constructions perfected by engineers over the course of several generations.²

The Antonine Wall, as a Roman frontier, is a physical and visual testimony to the former extent of one of the world's greatest states, the Roman Empire. It formed part of a frontier system which surrounded and protected that Empire.

The Antonine Wall has a particular value in being the most highly developed frontier of the Roman Empire: it stands at the end of a long period of development over the previous hundred years and therefore facilitates a better understanding of the development of Roman frontiers in Britain and beyond. It is one of only three artificial barriers along the 5000km European, North African and Middle Eastern frontiers of the Roman Empire. These systems are unique to Britain and Germany, though more fragmentary linear barriers are known in Algeria and Romania. Built following an invasion of what is now Scotland during AD 139/142 and occupied for possibly only 20 years, it served as the most northerly frontier of the Roman Empire at the high point of its power and influence in the ancient world. It has many unique features which demonstrate the versatility of the Roman army, while its short life is of considerable value in offering a snap-shot of a Roman frontier in its most advanced state. As the most northerly frontier, it stands as an example of Rome's stated intention to rule the world.

The Antonine Wall has a distinctive value as a unique physical testimony to the nature of the constitution of the Roman Empire and the requirement of the emperor for military prestige. The abandonment of Hadrian's Wall and the construction of a new northern frontier at the behest of a new emperor reflects the realities of power politics in Rome during Edward Gibbon's "Golden Age". It also stands as a physical manifestation of the statements of writers flourishing during the reign of Antoninus Pius about the measures

² <https://whc.unesco.org/en/list/430>

which Rome took to protect its inhabitants, even those living in its most distant province.

The Antonine Wall is of significant value in terms of its rarity, scale, preservation, and historical and archaeological value; the engineering and planning skills of its builders; the understanding of Roman frontier policy and management, and its influence on the landscape and history of local peoples during the Roman period and beyond; and also in terms of its contribution to the economic, educational and social values of today's society.³

- The Antonine Wall sits within the broad framework of Roman frontiers, but it also contains many unique or unusual elements. These mainly relate to the structure itself;
- The Antonine Wall was built within 20 years of Hadrian's Wall, and, in its general framework, bears some features in common, but in many aspects it is clearly a development of Hadrian's Wall and is different in many ways, reflecting a more complicated frontier complex;
- The Antonine Wall is the only frontier to have had a turf rampart erected on a stone base. Hadrian's Wall was of stone in the eastern part and turf in the west, but the turf wall was built directly on the ground - though short stretches of cobble foundations have been found at two locations - and was wider than the Antonine Wall. The Outer *Limes* in Germany was a timber palisade in its primary phase. The purpose of the stone base may have been to add stability to the superstructure, or to aid drainage through the barrier;
- The forts are more densely spaced on the Antonine Wall than on any other frontier of the Roman empire;
- Unlike on Hadrian's Wall the forts are diverse in their sizes, defences and internal arrangements;
- Unusually, many forts have annexes attached to them. Annexes have been recorded at many forts but not at those on linear barriers, but no such structures were constructed on Hadrian's Wall and they do not exist in the same form on the German *Limes*;
- Six expansions, probably used for signalling, are known: these structures are unique to the Antonine Wall;
- The three small enclosures discovered in one section of the Antonine Wall are unique on Roman frontiers;
- The short life of the Antonine Wall, coupled with the location and morphology of the known camps, enables most to be definitively identified as temporary camps used by the soldiers building the frontier. As a result, it is possible to offer suggestions on the organisation of labour, which is not possible on other frontiers. Many temporary camps are known along the line of Hadrian's Wall (few are recorded in Germany), but the long history of that frontier renders it difficult to disentangle temporary camps from marching camps and practice camps;

³ Historic Scotland 2007: 75

- The Antonine Wall was the shortest occupied linear frontier in the Roman Empire and is thus a unique archaeological resource.

The temporary camps discovered on the Antonine Wall are particularly important in relation to the final unique element, the twenty Distance Slabs which are known either whole or in part from the Antonine Wall. These record the lengths of Wall built by each of the three legions of Britain, the Second, Sixth and Twentieth.

However, the distance slabs are not simple records, but highly decorated and sculptured stones which depict events during the military campaigning and form one of the most important collections of roman military sculpture from any frontier of the roman empire. Together with the evidence of the temporary camps, they allow important conclusions to be reached about the construction of the Antonine Wall which are unique to this frontier. They are also an important element in any consideration of the reason for the construction of the Antonine Wall, which is generally believed to relate to the personal position of the new Emperor Antoninus Pius. On one interpretation, they glorify the success of Roman arms on behalf of the Emperor, whose name appears on all the inscriptions, over the enemies of Rome and emphasise the support of the gods, and in particular the goddess victory, for the romans and their emperor. However, as the known distance slabs have been removed from the monument and placed in museums or their protection, they are not included in the world heritage site.⁴

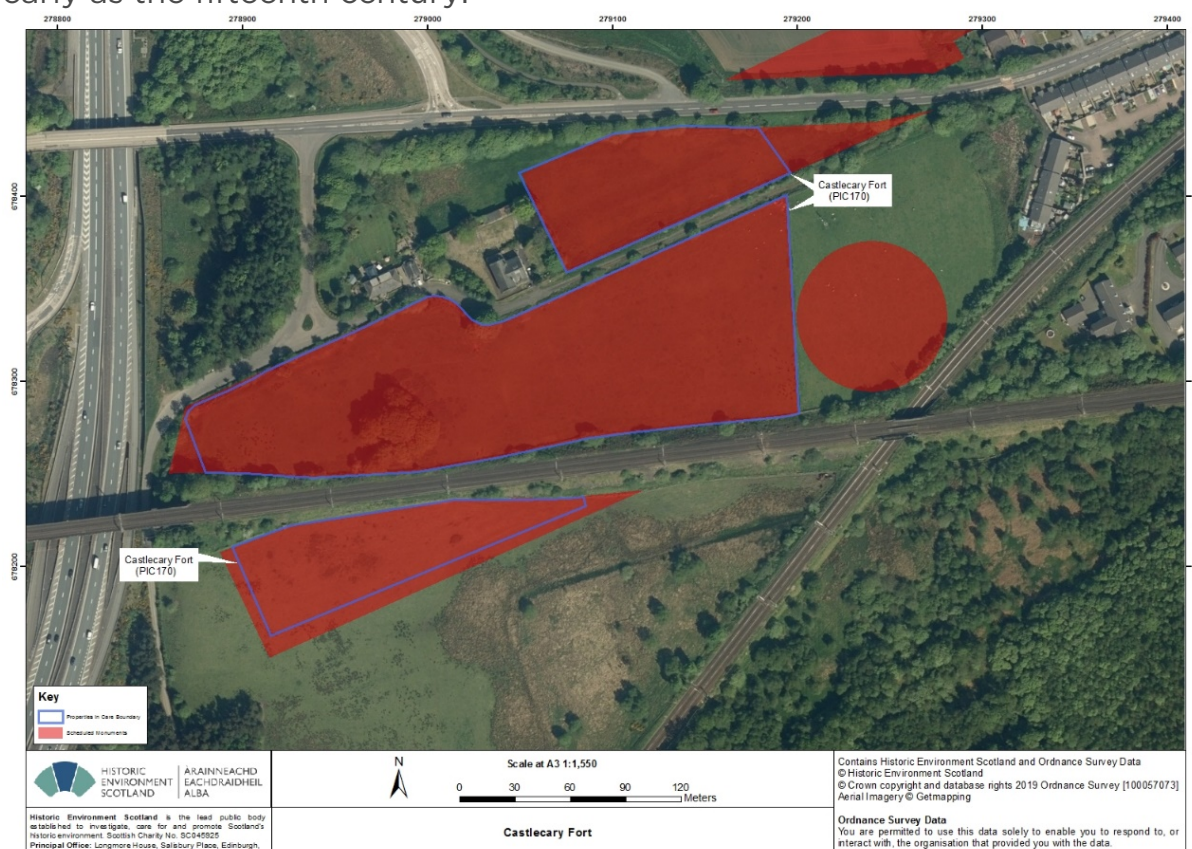
⁴ Historic Scotland 2007: 76-77

PART B: STATEMENT OF SIGNIFICANCE: CASTLECARY FORT

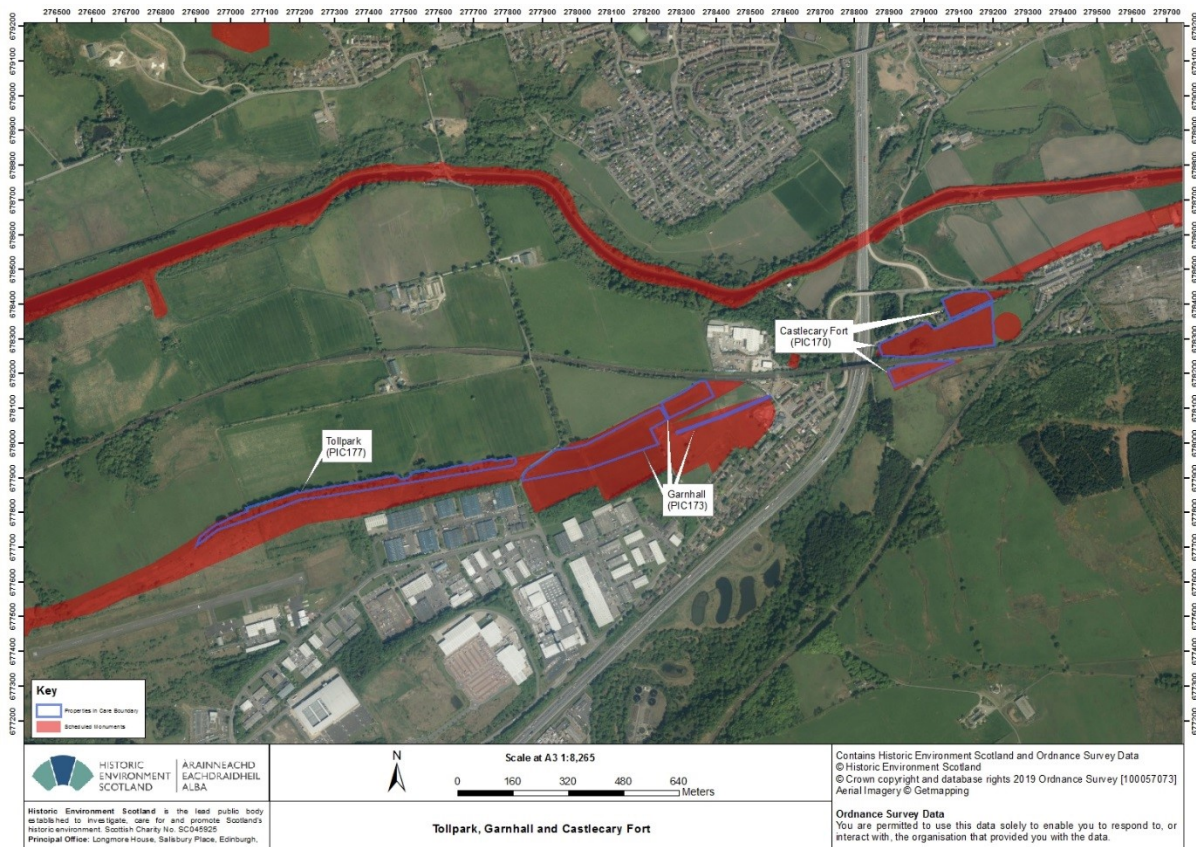
I. SUMMARY

1.1 Introduction

This property is part of the Antonine Wall and is located south-east of the junction between the M80 and B816, in the area of the old Castlecary schoolhouse. The site features a Roman fort and annexe, which is bisected by the Edinburgh to Glasgow railway line, which enters the fort at its south-east corner and exits just south of the fort's west gateway. The fort is one of only two Antonine Wall forts to feature stone ramparts and has been demonstrated to have been built before the Antonine Wall Rampart. Although the railway has severely damaged the property, the portion of the fort to the north of the railway can be visited today, with an information panel and site plan on display. Visible remains include a low mound and portions of exposed stonework from the fort's east rampart, small portions of the headquarters building (*principia*) near a cluster of trees within the centre of the fort, and traces of stonework at the north gate. Unfortunately, the fort has been heavily damaged by modern activities including construction, railways, and stone quarrying from as early as the fifteenth century.



Castlecary Fort: Scheduled Area and Property in Care boundary.
For illustrative purposes only.



Proximity of Castle Cary Fort to Garnhall and Tollpark,
with Forth and Clyde Canal to the north.

1.2 Statement of Significance

As a part of the Antonine Wall, this property inherits the following aspects of significance:

- It is part of a well-preserved Roman frontier.
- Of all of imperial Rome's linear frontiers, this is the final and most developed example, in terms of strategic defense. Its engineers improved on Hadrian's Wall (built a generation before), to incorporate new features into its design, such as the use of fortified annexes which are unique in Roman linear frontier systems. It allows the development of Roman frontiers to be investigated through comparison with Hadrian's Wall and the German *Limes* thereby allowing us to understand more clearly the arrangements the Romans made to protect their Empire, as well as the relationship between broad principles and distinct local requirements. The Wall has further importance as a dating tool. Artefacts, pottery and ecofacts found in the structures along the frontier had a limited period of use, and are invaluable for helping date other forts and civil settlements.

- At the time of its creation, it represented the biggest ever engineering project to be undertaken within central Scotland, and a major human-engineered topographical transformation of the landscape.
- The Antonine Wall is the only frontier to have had a turf rampart erected on a stone base; this may have been to add stability to the superstructure, or to aid drainage through the barrier.
- Following the Roman military abandonment of the frontier, it remained a highly visible landscape feature with continued significance in subsequent periods. It retained significance in a number of ways, e.g. as a defensive line, with its stones and Distance Slabs reused in the construction of neighbouring dykes and properties, and in the name “Graham’s Dyke,” by which it came to be known; a name still reflected within modern street names in the eastern half of the Wall’s line.
- Within the FREWHS, the Distance Slabs are unique to Scotland. Three legions built the Wall, and erected these 19 sculpted and inscribed sandstone blocks to record the completion of their individual stretches.
- The Antonine Wall is a most important repository of environmental evidence, both through its materials of construction and because it provides a dated horizon stretching right across Scotland. Through environmental evidence from the Antonine Wall, it has been possible to reconstruct the vegetational history of Central Scotland. The wall gains further international significance through the context in which it is managed as a World Heritage Site. The archaeological remains, the line and the setting of the Antonine Wall and its buffer zone are protected by UK Acts of Parliament, supplemented by National Planning Policy Guidelines, which together form a coherent framework for the protection of the whole of the World Heritage Site and its buffer zone.

More particularly, Castlecary Fort is significant for the following reasons:

- It is one of only two Antonine Wall forts to have stone ramparts, and the only one of these in HES care.
- It features a unique and dramatic reduction in the width of the Ditch north of the fort.
- It has potential evidence for significant post-Roman activities in the near vicinity of the fort.
- The fort has been extensively damaged by modern activities, and has enhanced archaeological sensitivity.

2. ASSESSMENT OF VALUES

2.1 Background

The Antonine Wall is the remains of the Roman Empire's northwest frontier built in the mid-second century. It was around 41 miles (66km) long and stretched across central Scotland from the Firth of Forth near Bo'ness to Old Kilpatrick on the Clyde. The Wall was constructed, in functional operation, and then abandoned all within a period of about twenty years between the early AD 140s-160s. A full overview and description of the Antonine Wall is given at Appendix 4⁵.

Though termed a "Wall", the main structure was of Rampart and Ditch. The Rampart was constructed mostly out of layers of turf, erected on a stone base, and reached a height of 3m. To the north of the Wall, the defences also included a huge Ditch, nearly 5m deep in places, and an Outer Mound constructed from the earth thrown out of the ditch. Seventeen forts plus additional 'fortlets' accommodated the men stationed along the Wall during its brief occupation (the number could be as low as 4,500-5,000 men)⁶.

The Military Way, a service road built to the south of the Wall, was another important element, enabling troops to move swiftly along its course, bearing supplies, commands and news. The Wall was entirely built by members of the three Roman legions stationed in Scotland. During construction, the soldiers lived in leather tents or wooden huts situated inside temporary camps which were enclosed by light defences. These temporary camps were an integral part of the design of the Antonine Wall, and were carefully positioned along the frontier during its creation, to ensure maximum efficiency.

In the late 150s / early 160s AD the Antonine Wall was abandoned and the guard withdrawn. The rampart was not demolished, nor was the ditch filled in, but fort buildings were burnt or dismantled. The Romans took valuable and portable items away with them, but heavy or worthless objects were discarded, in some cases down the well of the fort – to the great benefit of future archaeologists.

Throughout the post-Roman and medieval periods the Antonine Wall and its immediate vicinity saw continued occupation and the construction of new settlements and structures, including churches, villages, and several castles, including mottes. The wall became known as 'Grymisdyke' and its

⁵ Note: The key linear features include the Rampart, Ditch, Berm, Outer Mound, and Military Way; these features are all presented in this document with an initial capital letter in order to avoid confusion between the main frontier's Rampart and Ditch and those ramparts and ditches that surround the Wall's installations.

⁶ Keppie 2009

Roman heritage was forgotten. Throughout the post-Roman and medieval periods the Antonine Wall and its immediate vicinity saw continued occupation and the construction of new settlements and structures, including churches, villages, and several mottes and castles.

From the 18th century there was growing interest in and exploration of the Wall by antiquarians, and certain sites became celebrated. Industrialisation and development in the central belt also saw destruction of some parts of the wall by agricultural and industrial development, and the building of roads and canals.

HES manages fourteen sites along the Wall but the majority of the Wall is not in State care. Castlecary was taken into State care in 1961 and was first Scheduled in 1981. In 2008 the Antonine Wall was inscribed as a World Heritage Site and a management plan for the WHS is available at www.antoninewall.org/world-heritage/managing-antonine-wall

Following inscription in 2008, a Management Plan Steering Group was established to develop and deliver Management Plans and key strategic work along the Antonine Wall. This comprises Historic Environment Scotland (HES) and the five local authorities along its length (West Dunbartonshire Council, Glasgow City Council, East Dunbartonshire Council, North Lanarkshire Council and Falkirk Council). A World Heritage Site Co-ordinator is employed by HES to work on behalf of this partnership and deliver the UNESCO WHS requirements. The Partnership invests in capital and revenue projects to protect and promote the Antonine Wall; since inscription this has included (amongst other projects) key branding work, a new website, a digital app platform, new road and onsite signage, economic and visitor studies, investment in visitor counters and a significant Heritage Lottery Fund (HLF) project focused on regeneration and community engagement. Four new staff members were recruited for a three-year period to manage the HLF project and key to their work was a co-design and co-curation approach with local communities. Key groups being targeted include communities in the most deprived areas of the Central Belt, asylum seekers (including those from areas associated with the original Roman troops stationed on the Antonine Wall), young people both in and out of schools, and individuals seeking skills development opportunities.

The Antonine Wall has benefited from the development of the John Muir Way, a coast to coast walking route that crosses several parts of the Antonine Wall. This has helped to find alternative routes for cyclists and horse-riders, where some parts of the site had been vulnerable to damage from such use.

Internationally, as part of the Frontiers of the Roman Empire World Heritage Site, staff and communities connected to the Antonine Wall liaison and network with counterparts along Hadrian's Wall and the German *Limes*. This has included: joint European funding bids; networking trips; hosting / attending international meetings and delegations; and conferences and seminars. There has also been successful engagement with wider European Roman frontier networks.

2.2 Evidential values

The property provides significant evidence for the Antonine Wall and its sequence of construction, with particularly rare evidence of an Antonine Wall fort with stone – rather than turf – ramparts. There is an annexe attached to the east side of the fort, which remains unexcavated and a strong source of potential evidentiary value. Modern damage to the site, particularly through imposition of a road and railway cutting across the fort, have reduced some of the site's potential evidentiary value and heightened the importance of antiquarian testimony.

The exact date of discovery of the fort is unknown but it is thought to have been at least as early as the fifteenth century. A plan of Castle Cary and its bathhouse was included in General William Roy's military survey⁷ and was noted by antiquaries throughout the seventeenth and eighteenth centuries. The Rev. John Horsley wrote that Castle Cary "may be reckoned among the larger forts, so it is one of the best preserved in the whole series,"⁸ while Alexander Gordon describes the site as "another magnificent Fort," and goes on to highlight its stone ramparts and multiple ditch defences⁹. Yet even as these antiquaries discuss the fort's strong preservation in their time, we know that it had long been a convenient source of masonry from at least the fifteenth century: the site was frequently robbed of stone for the construction of nearby buildings, including the towerhouse at Castle Cary just one kilometre to the south¹⁰. The site was again extensively robbed of stone during the 1769–71 construction of the Forth and Clyde Canal, which exposed the fort's bath-house in the south-east corner.

Around 1809, large portions of the fort's ramparts were blasted away with gunpowder in the name of "agricultural improvement." Further damage

⁷ Published posthumously; Roy 1793

⁸ Horsley 1732: 170

⁹ Gordon 1726: 57

¹⁰ Robertson 2015: 77

occurred in 1841, including the loss of the southern section of the bath-house, when the fort was cut across by the Edinburgh to Glasgow railway. The 1841 destruction of parts of the fort was protested by a number of antiquaries, including John Buchanan, who was present and recorded that the removal of 3.5m of soil consisted of an “entire mass of broken stones mingled with fragments of pottery, among which were many pieces of jars, vases and basins – some of a cream colour, and others of a lively red, elegantly ornamented with flowers and figures”¹¹. Much of the evidence that could be available from the property has, thus, been destroyed and we must rely on the records of such antiquaries to augment the information available from more systematic investigations.

The first systematic excavations took place in 1902, by the Society of Antiquaries of Scotland, confirming that the fort featured stone ramparts¹². These excavations also provided an unexpected discovery: the existence of an annexe attached to the east of the fort. This annexe remains unexcavated and offers strong potential evidentiary value, especially as so little excavation has been carried out within the Antonine Wall’s fort annexes. The excavations succeeded in confirming an oblong plan for the fort, as well as the positions of key internal buildings, including the commanding officer’s house (*praetorium*) and headquarters building (*principia*) in the fort’s centre, a granary (*horreum*) to the east, and a latrine in the north-west corner. This excavation was unfortunately hasty and incomplete; following the end of work, the excavation trenches were not back-filled and the exposed remains were not consolidated nor protected, leading to further degradation¹³.

The property has been photographed from the air on numerous occasions, and recorded by surveyors on the ground. Geophysical surveys – including resistivity, ground penetrating radar, and magnetometry – were conducted in 1994 and 2006. The 1994 geophysics revealed double ditches on the fort’s south-west corner and east rampart, as well as a single ditch around the annexe on the east side of the fort. The 2006 survey covered areas west and south-east of the fort, identifying a number of anomalies that may represent a possible civil settlement (*vicus*) outside of the fort’s annexe.

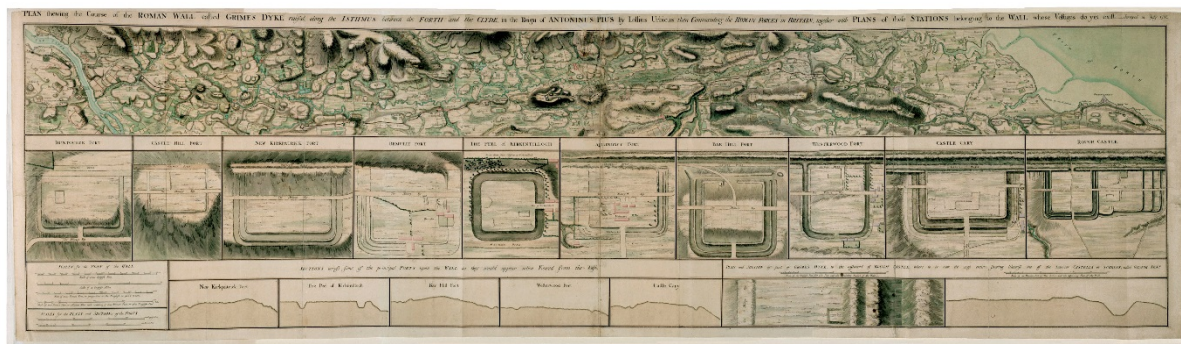
Castlecary is one of the larger forts along the Antonine Wall, one of only two to feature stone ramparts (the other being Balmuildy), and was built

¹¹ Keppie 2012: 116

¹² Christison *et al* 1903

¹³ Rohl 2014: 154–158

before the Antonine Wall reached the site and is therefore argued to be early in the building sequence for the Wall. The fort had an internal area of 1.4ha while the attached annexe measured 1.1ha. The Antonine Wall Rampart, measuring 4.4m at its base, was built up to and away from the fort's 2.4m-wide stone rampart at its north-east and north-west corners. To the north of the fort, the Antonine Wall's Ditch featured a drastic reduction in width: to the east of the fort's north gate, it measured 12m wide, while it was then reduced to only 4.45m wide to the west of the gateway. In 2010, an excavation took place inside the grounds of the nearby school¹⁴; this focused on the stone base of the Antonine Rampart at the north-east corner of the fort, and determined that the frontier's Rampart abuts the rampart of the fort, confirming that the fort was constructed before the Antonine Wall Rampart reached this property¹⁵.



SC 934405 © Courtesy of HES. The course of the entire Antonine Wall along with plans and sections of the main forts and fortlets along the Wall. Surveyed in 1755. Titled 'Plan showing the course of the Roman wall called grime's Dyke...together with plans of those stations belonging to the wall'.

2.3 Historical values

The story of this property can be told by the wealth of information provided not only by the archaeological evidence of the fort's plan and the position of its interior buildings, but also by inscriptions, the bath-house, and small finds that reflect the cultural lifestyles of the Roman soldiers that once resided here. The site also has the potential to yield further information on the wider period of Roman activities in central Scotland based on the availability of limited finds belonging to pre-Antonine and post-Antonine periods.

¹⁴ Bailey 2011

¹⁵ Robertson 2015: 78

Julius Agricola, according to Tacitus writing in the mid-second century, had built garrisons (*praesidia*) along the Forth-Clyde line in AD 79/80, in what is known as the Flavian period. Sir George Macdonald was particularly interested in identifying sites that could be attributed to Agricola's activities in the region, and had interpreted pre-fort enclosures underlying the forts at Bar Hill (PIC168) and Croy Hill (PIC171) as examples¹⁶, although they are both now interpreted as more temporary enclosures, probably associated with the design and construction of the Antonine Wall¹⁷. Castlecary – along with Mumrills, Cadder, Balmuirdy and Old Kilpatrick – has yielded a number of small finds from the Flavian period, and these led Macdonald to suggest that Castlecary was also the location of one of Agricola's *praesidia*¹⁸. There is, however, no structural evidence to establish this hypothesis here, nor at any other Antonine Wall fort. While structural evidence for Agricola's occupation has been frustratingly elusive, the small finds from this period include pottery, glass vessels, and short-lived bronze coins from the first century; these may either reflect an earlier Roman presence along the line of the Antonine Wall, or merely be residual materials in circulation which were brought to the frontier during the Antonine period. Either way, we do know that the Romans established at least one Flavian period fort north of the Forth-Clyde line at Camelon north of Rough Castle (PIC175) and Watling Lodge (PIC178 and PIC179)¹⁹ and a fort at Mollins to the south²⁰. The evidence from Castlecary and the context of the finds of possible Flavian date, however, do not currently allow us to fully understand the Roman presence at this property before the construction of the Antonine fort.

Following an influential paper by Gillam in the 1970s²¹, Castlecary was regarded as one of the Antonine Wall's "primary" forts and as part of the frontier's "original plan" before a later decision was made to add additional forts to the line, although this view has recently been challenged²². A key reason for including Castlecary amongst the supposed original forts planned before the frontier was even constructed is that it was defended by stone walls and has been demonstrated through excavation to pre-date the line of the frontier's own Rampart. The only other Antonine Wall fort to feature stone walls is at Balmuirdy, which features wing walls protruding from the fort in anticipation of the Antonine Wall Rampart, but Castlecary does not evidence this feature. All other forts along the Antonine Wall were defended by turf and clay ramparts, which highlight the uniqueness of Castlecary and Balmuirdy. Of these two stone forts, only Castlecary is in

¹⁶ Macdonald 1934: 269–273

¹⁷ Jones 2011: 140–141, 329–330

¹⁸ Macdonald 1934: 466

¹⁹ Robertson 2015: 67

²⁰ Hanson & Maxwell 1980

²¹ Gillam 1976

²² Graafstal et al 2015

HES care. More recent research, however, is now challenging the view of so-called “primary” and “secondary” forts²³, and this may be less significant than previously indicated.

Beyond the structure of the fort itself, the archaeological evidence has begun to tell the story of those who resided at this location. Large quantities of grain were found within the fort’s granary, and small leather shoes were found within a rubbish pit, providing good evidence for the presence of women and children at the fort (as also at Balmuldy and Bar Hill). Other notable finds include eleven inscriptions, nine of which are on stone altars; together, these indicate the presence of soldiers from two Roman legions and three auxiliary units at Castlecary. An altar to the goddess Fortuna (RIB 2146) was recovered from the fort’s bath-house in the 1760s, along with a stone figurine of the same goddess; the altar was dedicated by detachments from both the Second and Sixth Legions. The Sixth Legion is further attested on two other altars from the site: one discovered to the west of the fort records the construction of a temple to Mercury (RIB 2148), while the other is dedicated to the mother goddesses by Gaius Julius Speratus and the Sixth Legion (RIB 2151). In addition to the legionary presence, the fort would have been primarily garrisoned by auxiliary soldiers. The First Cohort of Vardullians – 1000 men from northern Spain – are recorded on an altar to Neptune (RIB 2149), the First Cohort of Tungrians – 1000 men from Belgium – is recorded in a building inscription (RIB 2155), and either the First Cohort of Batavians or Baetasians – both from the Netherlands – are recorded on a partial altar dedicated to an unknown deity. Due to the size of Castlecary, it is unlikely that either the First Cohort of Tungrians or Batavians, which were mixed infantry and cavalry, were present in full strength.

One activity that we are certain would have taken place along the Antonine Wall is hunting. Deer and boar bones have been excavated at various locations along the Wall, along with altars to the God of the wild – Silvanus – which have been found at Bar Hill (PIC168) and Westerwood. More specific to this property is a sculpted slab that depicts a human figure armed with a spear and another human with a bow in a wooded setting that includes two stags.

Modern understanding of the end of the Roman occupation of the Antonine Wall has shifted due to further excavations along the Wall which challenge the concept that there was a brief gap in the occupation. It is now felt that there was a single period of use but that there was a period of refurbishment and changes that took place to the internal buildings that existed in the forts²⁴. Antoninus Pius’ death in AD 161 was followed by the

²³ Poulter 2009: 117–124; Graafstal *et al* 2015; Hannon *et al* 2017; Symonds 2017: 144–146

²⁴ Hodgson 1995; Hodgson 2009

arrival in Britain of Sextus Calpurnius Agricola, who was sent against the war threat in Britain, and inscriptions from forts in northern England support the latter's presence as stated within the literary sources²⁵. The exact date of the Roman withdrawal from the Antonine Wall is not specifically known, but finds of coins and Samian ware pottery generally date this action to not long after AD 160²⁶. No inscriptions along the Antonine Wall can be dated from after the death of Antoninus, with the exception of a Sixth Legion altar (RIB 2148) found at Castlecary that was dedicated by citizens of Italy and Noricum who were only drafted into British legion after AD 175. The altar is therefore ascribed to the period AD 175-190 at Castlecary. It is possible that after the Roman withdrawal from the Antonine Wall, Castlecary continued to serve as an outpost fort for legionary detachments while the main frontier line had fallen back to Hadrian's Wall²⁷.

Possible – but inconclusive – evidence for an early post-Roman occupation near the site has been found in the form of a possible souterrain located in aerial photographs to the east of the Castlecary fort annexe²⁸. If this is correct, it is possible that the structure was built of stone removed from the Roman fort, and that it was built not long after the Romans abandoned the Antonine Wall in the AD 160s. Even less certain is a possible medieval motte located in the vicinity of the fort; this was recorded by Horsley²⁹, Roy³⁰, and Nimmo³¹ as a “tumulus,” while Maitland³² interpreted it as “the remains of a corn or malt-kiln.” By the early twentieth century, knowledge of the precise location of this structure was lost, and no clear vestiges remain in the expected area, but its likely location is on the Outer Mound in a field just north of the Dundas Cottages, a little more than 200m east of the fort and annexe³³.

2.4 Architectural and artistic values

Castlecary is often regarded as one of the earliest forts because – like the fort at Balmuildy – it was enclosed by stone walls, and has been demonstrated to pre-date the construction of the Antonine Wall's Rampart. While Balmuildy features stone wing walls that appear to be built in anticipation of the eventual Rampart, the fort at Castlecary does not

²⁵ Hanson and Maxwell 1986: 151

²⁶ Robertson 2015: 44

²⁷ Hodgson 2009: 30-31

²⁸ Rohl 2014: 257

²⁹ Horsley 1732: 171

³⁰ Roy 1793: 161

³¹ Nimmo 1777: 41

³² Maitland 1757: 174

³³ Rohl 2014: 286-288

include this feature. The stone ramparts that defended the fort are 2.4m wide with squared corners in the north, presumably an alternative architectural method that may make provision for the 4.4m stone Rampart base³⁴. Double ditches surround the fort in all directions except to the north, where the fort shares the Antonine Wall's own Rampart and Ditch; a third ditch line may have been present on the west of the fort. There were stone towers in the south-west, and, probably, in the south-east corner that has been cut across by the 1841 railway. On the eastern side of the fort was an annexe with an area of about 1.1ha, defended by a ditch and rampart.

On the northern side of the fort, the Antonine Wall's Ditch rapidly decreases in size from a width of 12m to a mere 4.45m to the west of the north gateway. The reason for this reduction remains unclear. Excavations in 2010 confirmed that the fort's east rampart had been built prior to the Antonine Wall Rampart, which was found to abut a pre-existing fort rampart about 10m south of the fort's north-east corner³⁵. Stone buildings located within the fort included a headquarters (*principia*), granary (*horreum*), latrine, and bath-house. The bath-house was located inside of the fort, which was not always typical practice but is also paralleled at Bar Hill (PIC168); both of these internal bath-houses are located next to a fort rampart, probably to minimize the risk of fire. The bath-house contained a series of rooms that ran from north to south with arches and a circular steam room (*laconicum*). Unfortunately, the stonework for the bathhouse had been almost entirely robbed by the time of excavations in 1902, and our information relies heavily on the records left by Roy³⁶.

2.5 Landscape and aesthetic values

A modern road, and the Edinburgh to Glasgow railway line, divide the Property in Care into three parts. It is also bordered by the busy M80 to its east and the B816 to its north. The limited remains that can be viewed at this property are accessed behind a former school within a small cluster of trees. Although access is limited and the railway disrupts the view of the fort, the location is otherwise pleasant. The fort rests on a plateau with a good view of the Denny Gap to the north, with the Red Burn to the west. The best time to visit the remains are during the winter, when vegetation is low. Stonework of the headquarters building, areas of the north gate and other walling can be seen within the trees. It is also possible to locate the east and north sides of the fort, and at times the east rampart³⁷; a light dusting of snow can enhance the visibility of these near-surface remains.

³⁴ Robertson 2015: 78

³⁵ Robertson 2015: 78; Bailey 2011

³⁶ Roy 1793

³⁷ Robertson 2015: 78

2.6 Natural heritage values

The site is comprised of unimproved grassland, and marshy grassland with a small pocket of broadleaf semi-natural woodland, which would potentially be suitable for roosting bats. Kestrel, starling and song thrush have been noted in the local area. One of the most important aspects of Castlecary Fort, along with other sections of the Antonine Wall, is their capacity to act as wildlife and biodiversity corridors for the surrounding areas. Linear features of relatively undisturbed countryside are of great importance.

Geology

The Antonine Wall was created making best advantage of the local geology. Here the bedrock belongs to the Passage Formation of the Clackmannan Group, including coarse sandstones and seatearths, with superficial deposits of Devensian Till³⁸.

2.7 Contemporary/use values

The Antonine Wall is well used by communities along its length as a relatively rare green space amid the urbanisation of Central Scotland. Walkers, trail runners, healthy living groups, and youth groups have all been identified as key 'greenspace' users during consultation events. Since its World Heritage Inscription in 2008, growing awareness of its status has emerged, and a more diverse audience developed. 'World Heritage' tourism has been noted by local tourism providers and a growing schools audience has been observed through social media. Further information on the WHS Management Plan Group and partnership activities and projects is given above at section 2.1 Background.

Wider opportunities for community development, regeneration, and local / national / international networking remain significant

This property has a limited social role, with difficult public access, and is primarily used for grazing. Visitor numbers to the HES managed Antonine Wall sites have been difficult to quantify as the sites are freely accessible and not staffed. Many attract substantial numbers of walkers as well as those setting out to visit the Roman site. Automatic counters have been installed at some sites which gives an idea of footfall. At Rough Castle, which is very near the Falkirk Wheel, over 100,000 were counted, while at Bar Hill 34,000 were counted over the course of a year (2018).

³⁸ British Geological Survey, 2019

3. MAJOR GAPS IN UNDERSTANDING

The Antonine Wall Research Agenda (in draft, 2019) highlights a number of areas where further work on the Wall line could enhance understanding. These include:

- Work on the local landscape and environment before the Wall's construction.
- Geoarchaeological work on the rampart and ditch.
- Study of the building materials and techniques deployed on the Wall.
- Remote sensing in the vicinity to detect additional structures including the Military Way.

For further information on the Research Agenda see:

www.antoninewall.org

The primary gaps in our understanding of Castlecary are:

- Whether or not there was an earlier Flavian period fort at the site.
- Why the fort was built with stone ramparts.
- The full plan of the fort and annexe remain unknown.
- Full understanding of the methods of internal construction techniques, especially for barracks.
- What is the reason for the Antonine Wall Rampart's rapid reduction around the fort's north gate?
- What is the nature and extent of post-Roman activities at/near this property, including the possible souterrain and medieval motte?
- Research is needed to establish a better understanding of visitor number and visitor profile across Antonine Wall sites. This would help in realising the potential of sites, especially those with high-footfall, to engage with a wide variety of community and interest groups who may represent new audiences for HES.

4. ASSOCIATED PROPERTIES

In addition to this property, there are currently 13 further portions of the Antonine Wall in the care of Historic Environment Scotland:

Bar Hill (PIC168); Bearsden Bath-house (PIC169); Croy Hill (PIC171); Dullatur (PIC172); Garnhall Farm (PIC173); Kirkintilloch (PIC174); Kinneil House (PIC152); Rough Castle (PIC175); Seabegs Wood (PIC176); Tollpark (PIC177); Watling Lodge (PIC178) and Watling Lodge West (PIC179).

5. KEYWORDS

Roman frontier; limes; Antonine Wall; Hadrian's Wall; World Heritage Site; railway; souterrain; motte; medieval; Iron Age; Roman fort

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Other Resources

3D digital models of various artefacts found at Antonine Wall sites, can be freely viewed on Historic Environment Scotland's Sketchfab page³⁹. An interactive Antonine Wall mobile app can also be downloaded to aid site visits and interpretation⁴⁰, and the full scheduling description for the site is available at: <http://portal.historicenvironment.scot/designation/SM90009>

³⁹ <https://sketchfab.com/HistoricEnvironmentScotland/collections/antonine-wall>

⁴⁰ Available at: www.antoninewall.org/visiting-the-wall/download-the-app

APPENDICES

APPENDIX I: TIMELINE

c. AD 79–87/88	Archaeological finds indicate that the site was used during the Flavian period.
c. AD 142	<p>Construction of the Antonine Wall is initiated by the Roman Emperor Antoninus Pius (AD 138-161), after a successful campaign in AD 140s by Lollius Urbicus, Governor of Britain.</p> <p>Fort, or nearby Antonine Wall, was built by cohorts VI of an unspecified legion and cohorts I Tungrorum.</p> <p>Fort garrisoned by several detachments of soldiers: vexillations of legiones II Augusta and VI Victorix from Italia and Noricum, cohorts I Fida Vardullorum, commanded by a prefect, Trebius Verus.</p>
c. AD late 150s / early 160s	<p>The Antonine Wall system is abandoned by the Roman military, and the northern frontier returns to the line of Hadrian's Wall.</p> <p>A possible souterrain is constructed to the east of the fort annexe, possibly using stone from the fort.</p> <p>Medieval period: a possible motte is constructed atop the Outer Mound a little distance to the east of the fort.</p>
1769–71	The site is used as a stone quarry during the construction of the Forth and Clyde Canal.
1809	Large portions of the fort's ramparts are blasted away with gunpowder in the name of "agricultural improvement."
1841	The Roman fort is cut by the Edinburgh-Glasgow Railway.
1961	The property is taken into State care (Guardianship).
1981	The site is first Scheduled.
2003	The Scottish Executive announces that the Antonine Wall (including this property) would be nominated as a UNESCO World Heritage Site.

2008 The Antonine Wall is inscribed as part of the “Frontiers of the Roman Empire” UNESCO World Heritage Site, joining Hadrian’s Wall and the Upper German-Raetian *Limes*.

APPENDIX 2: SUMMARY OF ARCHAEOLOGICAL INVESTIGATIONS

- | | |
|------|---|
| 1769 | The bath-house, exposed during the construction of the Forth and Clyde Canal, was drawn by General William Roy. |
| 1902 | Excavations by D. Christison established the plan of the fort, but only partially recovered the layout of the fort. A fortified annexe was attached to the east side of the fort, but was not excavated. The Military Way ran through this and along the main east-west road of the fort. Another main Roman road leads south from the fort. This forms part of main Roman road heading to the south. |
| 1934 | The line of Wall and Military Way was surveyed here by Sir George Macdonald. |
| 1957 | The line of Wall and Military Way was surveyed here by the Ordnance Survey. |
| 1980 | The line of Wall and Military Way was surveyed here by the Ordnance Survey. |
| 1982 | Excavations near house called Castra revealed the north face of Antonine Wall Ditch. |
| 1994 | Geophysical survey by Bradford University revealed double ditches defending the south, west and east sides of the fort, while the annexe was shown to have a single ditch. |
| 2006 | Geophysical survey by Glasgow University of 3ha to the southeast and west of the fort revealed a range of anomalies, possibly including features of the fort’s Roman period <i>vicus</i> , but also features of more recent date. |
| 2011 | Geophysical survey was carried out by Edinburgh Archaeological Field Society in advance of excavations by the Falkirk Local History Society within the garden of the Old Schoolhouse. The excavations revealed the Rampart, Berm, |

Ditch, and Outer Mound, but no evidence of defensive pits on the Berm.

- 2012 Metal detecting about 200m south of the fort uncovered a copper-alloy lion-headed mount and an enamelled pendant from a cavalry harness; both objects were claimed as Treasure Trove and allocated to Falkirk Museum.
- 2010 Aerial LiDAR captured at 0.5-m resolution covering the World Heritage Site, as part of the “Hidden Landscape of a Roman Frontier” collaborative research project run and jointly funded by Canterbury Christ Church University (CCCU) and Historic Environment Scotland (HES).

APPENDIX 3: OUTSTANDING UNIVERSAL VALUE

The Justification for Inscription of the Antonine Wall World Heritage Site against OUV criteria⁴¹.

Criterion (ii): *exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design.*

The extant remains of the fortified German *Limes*, Hadrian’s Wall and Antonine Wall constitute significant elements of the Roman Frontiers present in Europe. With their forts, fortlets, walls, ditches, linked infrastructure and civilian architecture they exhibit an important interchange of human and cultural values at the apogee of the Roman Empire, through the development of Roman military architecture, extending the technical knowledge of construction and management to the very edges of the Empire. They reflect the imposition of a complex frontier system on the existing societies of the north-western part of the Roman Empire, introducing for the first time military installations and related civilian settlements, linked through an extensive supporting network. The frontiers did not constitute an impregnable barrier, but controlled and allowed the movement of peoples: not only the military units, but also civilians and merchants. Hence, they triggered the exchange of cultural values through movement of soldiers and civilians from different nations. This entailed profound changes and developments in the respective regions in terms of settlement patterns, architecture and landscape design

⁴¹ A fuller exposition of the OUV of the site can be found on the UNESCO website: <https://whc.unesco.org/>

and spatial organization. The frontiers still today form a conspicuous part of the landscape.

Criterion (iii): *bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.*

As parts of the Roman Empire's general system of defence the German *Limes*, Hadrian's Wall and the Antonine Wall have an extraordinarily high cultural value. They bear an exceptional testimony to the maximum extension of the power of the Roman Empire through the consolidation of its north-western frontiers and thus constitute a physical manifestation of Roman imperial policy. They illustrate the Roman Empire's ambition to dominate the world in order to establish its law and way of life there in a long-term perspective. They witness Roman colonization in the respective territories, the spread of Roman culture and its different traditions – military, engineering, architecture, religion management and politics – and the large number of human settlements associated with the defences which contribute to an understanding of how soldiers and their families lived in this part of the Roman Empire.

Criterion (iv): *be an outstanding example of a type of building or architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history*

The fortified German *Limes*, Hadrian's Wall and the Antonine Wall are outstanding examples of Roman military architecture and building techniques and of their technological development, perfected by engineers over the course of several generations. They demonstrate the variety and sophistication of the Romans' responses to the specific topography and climate as well as to the political, military and social circumstances in the north-western part of the Empire which spread all around Europe and thereby shaped much of the subsequent development in this part of the world.

Integrity

The inscribed components convey the extraordinary complexity and coherence of the Frontiers of the Roman Empire in northwestern Europe. Although some parts have been affected by land use change and natural processes, the integrity of the property is demonstrated through its visible remains and buried archaeological features. Their state of survival has been researched in many areas. Several areas of the frontier have been built over, but where significant archaeological remains have been proven to exist they have been included in the property.

Currently, about one-third of the linear barrier is visible; about one third lies in open countryside but is not visible above ground, though its existence has frequently been tested through excavation; about one-third lies in urban areas, though again its survival has been tested through excavation in many areas. About 2 km of the total length of the Antonine Wall have been totally destroyed, though to this sum should be added minor cuttings for roads and railways.

Authenticity

The inscribed component parts have a high level of authenticity, with each having been verified through extensive study and research. The materials and substance of underground archaeological remains are well-preserved, as are upstanding and visible remains. The form and design of each representative part of the frontier and its associated structures are clear and comprehensible. Later development overlying parts of the frontier are treated as vertical buffer zones.

The remains of the Antonine Wall exist in a generally good condition and visible sections sometimes have significant heights and depths. Conservation and consolidation measures that have been carried out in the interest of better understanding and protection fit in with the setting of the property and do not diminish its authenticity.

Protection and management requirements

At the time of inscription on the World Heritage List, the World Heritage Committee adopts a Statement of Outstanding Universal Value (SOUV) which will be the key reference for the future effective protection and management of the property. The FREWHS as a whole is collectively managed. At the international level, the States Parties have established an integrated management system consisting of three closely cooperating and interacting bodies: the Inter-Governmental Committee (IGC) to oversee and coordinate the overall management at an international level; the Management group which assembles those directly responsible for the site management of the property and provides the primary mechanism for sharing best practice; The Bratislava Group, an international advisory body with expert members from States Parties with inscribed or potential parts of the Frontiers of the Roman Empire World Heritage property.

The Antonine Wall is protected by designation under the Ancient Monuments and Archaeological Areas Act 1979, and through the legislation that guide planning and development in Scotland - the Town and Country Planning (Scotland) Act 1997, the Planning etc. (Scotland) Act 2006 and the Planning (Listed Building and Conservation Areas) (Scotland) Act 1997. It is covered by national policy for the historic environment set out in the

Scottish Historic Environment Policy and Scottish Planning Policy. Policies to protect, promote, conserve and enhance the property are included in local authority development plans and strategies, supported by Supplementary Guidance. Most of the Antonine Wall is in private ownership, but some sections are in the care of local authorities and Historic Environment Scotland.

APPENDIX 4: OVERVIEW AND INTRODUCTION TO THE ANTONINE WALL

The Antonine Wall is the remains of the Roman Empire's northwest frontier in the mid-second century. Stretching across central Scotland from the Firth of Forth to the Clyde, the Wall was constructed, in functional operation, and then abandoned all within a period of about twenty years between the early AD 140s to early 160s. The Antonine Wall was one component within a vast and varied system of linear frontiers established by Rome during the second century AD, and other examples are known from across Europe, the Near East, and North Africa. The most famous of these Roman frontiers is Hadrian's Wall in the north of present-day England, which preceded the Antonine Wall and served as a model for key components of its design. In 2008 the Antonine Wall was inscribed as a UNESCO World Heritage Site, joining Roman frontiers in England (Hadrian's Wall) and Germany (the Upper German-Raetian *Limes*) as the latest addition to the "Frontiers of the Roman Empire" serial trans-national World Heritage Site.

The Antonine Wall is about 41 miles (66km) long and features a range of linear features that are present along most of this length, which is punctuated by several types of installations of various purposes; the Wall was previously reported to have a length of 60km, but this has been amended by recent three-dimensional distance measurements based on analysis of recent LiDAR survey⁴². Although common perceptions of the term "wall" often revolve around an enclosing structure or rampart – generally of timber, stone, or brick – the term "Antonine Wall" is used by scholars and heritage managers to refer to this full collection of inter-related features. Beyond the installations, the linear features of Rampart and Ditch are typically (and would have been in the Roman period) the most topographically visible elements of the frontier.

Linear Features

Note on nomenclature: The key linear features include the Rampart, Ditch, Berm, Outer Mound, and Military Way; these features are all presented in this document with an initial capital letter in order to avoid confusion

⁴² Hannon forthcoming

between the main frontier's Rampart and Ditch and those ramparts and ditches that surround the Wall's installations.

The Rampart was a turf or earth/clay superstructure set atop a kerbed stone base, averaging 4.3–4.8m wide, and rising in a sloped fashion to a height of probably at least 3m. The best-preserved Rampart remains lie just west of Rough Castle fort (PIC175), where it survives to a height of only about 1.5–1.8m. Because the Rampart does not survive to its full height anywhere, we remain uncertain of how it was finished on top, but it was probably squared flat and may (although there is no direct evidence) have featured stakes set into the top or a wooden duckboard walk with a timber palisade. The Rampart's superstructure differs to either side of Watling Lodge (PIC178 and PIC179), with stacked turves used from here westward and packed earth or clay revetted by clay or turf "cheeks" to the east.

The Berm represents the space between the Rampart and Ditch, and is relatively flat or gently slopes toward the Ditch to the north. The Berm is typically between 6–9m in width, but can vary widely, exceeding 30m at Croy Hill (PIC171); at some locations – usually in the eastern half of the frontier – series of pitted obstacles have been identified on the Berm, matching similar features also known from Hadrian's Wall.

The Ditch is a monumental earthwork dug to the north of the Berm, with a V-shaped profile and banks cut at an angle of about 30 degrees, with evidence at some locations for large stones placed to strengthen its edges. Ditch size varies widely across three key sectors: generally between 6.1–10.7m wide to the east of Falkirk, an average of 12m wide and 4m deep between Falkirk and Bar Hill, and generally between 6.1–7.6m wide to the west of Bar Hill (PIC168); across its full length, the Ditch's width ranges from a narrow 4.27m to as wide as 20.73m, although subsequent erosion must account for some of the wider widths, and it should be noted that the Ditch was not cut at all in a short section on Croy Hill (PIC171).

Immediately north of the Ditch lies the Outer Mound, occasionally called the "Upcast Mound" on the assumption that it is formed from material cast up from the digging of the Ditch. The Outer Mound is typically a low mound spread and partially leveled to a width of about 18–20m; this frequently serves to heighten the north face of the Ditch, and on north-facing slopes the Outer Mound was narrowed to further accentuate the Ditch.

The final linear feature is the Military Way, which was a Roman road located to the south of the Rampart, offering lateral communication and movement along the frontier; this was generally about 5–5.5m wide with a distinct camber and flanking ditches. The Military Way was typically situated between 36–46m south of the Rampart and was usually connected to each fort's *via principalis*, with evidence at several sites (e.g. Rough Castle, PIC175; Croy Hill, PIC171) for an additional bypass road that provided

movement without the need to enter the fort. At river crossings, the Military Way was provided with bridges, as confirmed at the river Kelvin near Balmuildy.

Installations

Installations can be grouped into five key types: forts, fortlets, expansions, minor enclosures, and possible watchtowers. Forts are the primary and largest installation type, with 17 forts currently known, ranging in size from 0.12–2.6ha. Although there is no set interval between forts, they are generally located about 3.5km apart, and it has long been assumed by many scholars that there may have been as many as 19 or 20 forts in total; given the long gaps between the forts at Carriden and Inveravon and those at Rough Castle (PIC175) and Castlecary (PIC170), it has been suggested that additional forts may have been located at Kinneil and Seabegs (near PIC176), but these sites have only provided evidence of fortlets rather than forts. The forts themselves were – like the Rampart – primarily constructed of turf and/or clay, with stone or timber internal buildings, and all but one (Bar Hill, PIC168; and possibly Carriden, if the Rampart did not reach that far east) were physically attached to the Rampart. Whilst the majority of forts were defended by turf or clay ramparts, those at Castlecary (PIC170) and Balmuildy featured stone defences. Most forts have also been found to include an additional fortified space, traditionally called an “annexe”. The precise purpose and nature of these annexes remains uncertain, but they are likely to have been later additions and not part of the original plan; in some cases the annexe is significantly larger in area than the fort itself.

Fortlets were smaller enclosures attached to the rear (i.e. south side) of the Rampart, and were first formally identified during excavations at Duntocher in 1949; the fortlet at Watling Lodge (between PIC178 and PIC179) had been initially described in the 1720s but was only recognised as a fortlet after the discovery at Duntocher. Similar in design and construction to the Antonine Wall forts, they measure about 21m x 18m and were constructed with turf ramparts on stone bases, with small timber barrack-blocks to house the soldiers stationed within them. All known Antonine Wall fortlets had a south and north gate, the latter opening through the Rampart. These northern gateways are problematic, as only the fortlet at Watling Lodge (between PIC178 and PIC179) has provided clear evidence for a causeway across the Ditch. Although tentative traces of a possible causeway that was later removed were identified at Kinneil fortlet, it appears that most Antonine Wall fortlets either did not provide access to the north of the frontier or that a decision was made during the frontier’s short functional lifespan to eliminate these original access points; this latter view may be further supported by tentative evidence at Kinneil and Seabegs Wood (PIC176) that the north gateways of these fortlets may have been narrowed or removed. Fortlets are known from across the

Roman Empire, with others on Hadrian's Wall known as "milecastles" because of their regular spacing at approximately one Roman mile intervals. Searches in the 1970s for fortlets on the Antonine Wall succeeded in identifying some examples at Kinneil, Seabegs Wood (PIC176), Croy Hill (PIC171), Summerston, and Cleddans. If a model of a regular series of fortlets at about one Roman mile intervals is proposed, a total of 41 fortlets would be expected; to date, only nine have been definitively identified, and investigations at proposed additional fortlet locations have either provided negative or inconclusive results.

Expansions are represented by roughly square southern extensions of the Antonine Wall Rampart, constructed of turf on a cobble stone base and about 5.2m square. Six examples are currently known, all occurring in pairs located close together; two pairs are located to either side of Rough Castle fort (PIC175), called (to the east of Rough Castle) Tentfield East/West and (to the west of Rough Castle) Bonnyside East/West, whilst a third pair is located on the western slope of Croy Hill (PIC171). The functions of these installations are uncertain, but one interpretation is that they served as signalling platforms, with some evidence of burnt material recorded at Bonnyside East. This type of installation is unknown on other Roman frontiers, and may have been a unique innovation for the Antonine Wall, serving a similar function to towers or "turrets" known from Hadrian's Wall and the Antonine frontier in Germany.

Minor Enclosures are known at three locations along the frontier, all in the vicinity of the fortlet at Wilderness Plantation, and each identified via aerial photography. They are sub-rectangular and ditched, attached to the rear of the frontier's Rampart. Only one (Wilderness West) has been excavated, revealing that it is later than the Rampart, and had an internal area of about 5.5m square; no entrance or internal surfaces or structures were identified. Although these appear to have been designed as permanent features, their precise function remains uncertain.

Watchtowers may have existed along the Antonine Wall, as they are known from other Roman frontiers, but no definitive evidence for this type of installation has been uncovered. The minor enclosures near Wilderness Plantation do not appear to feature structural evidence for towers, and other possible watchtowers suggested at Garnhall (PIC173) and Callendar Park require more substantiation before they can be accepted as definitively representing this type of installation.

When all of these features are taken into account, the Antonine Wall was one of the biggest ever engineering projects to be undertaken within central Scotland, and the digging of the Ditch particularly altered the local topography, with continuing implications for later periods. Currently, about one-third of the linear barrier is visible; about one third lies in open countryside but is not visible above ground, though its existence has

frequently been tested through excavation; about one-third lies in urban areas, though again its survival has been tested through excavation in many areas. Only about 2 km of the total length of the Antonine Wall have been totally destroyed, though to this sum should be added minor cuttings for roads and railways.

The Antonine Wall provides significant evidence for the activities of the Roman military during the mid-second century AD. Structural remains provide evidence for the advanced degree of complexity in Roman frontier planning and construction, with the most complicated array of interlinked elements known from any Roman frontier. The short functional lifespan of the Wall – only about 20 years in total, a generation – makes this frontier particularly valuable as a dated horizon that is relatively unencumbered by the wide range of significant alterations that complicate the functional histories of longer-lived frontiers elsewhere in the Empire. Artefacts inform us about production and procurement and daily life and society on this particular edge of the Empire, offering crucial comparative collections to assemblages from both the Empire's other frontier zones and areas that were closer to the Empire's cultural and political centre. Inscriptions also add a very valuable dimension that allows for the identification of specific military units, and, in some cases, even named individuals. The most important set of inscriptions are the Distance Slabs: at least 19 sculpted and inscribed sandstone blocks that record the work of building the frontier (perhaps the Rampart itself) by different legions, and which have been identified at various locations along the Wall.

The Antonine Wall's Abandonment and Later History

Around the late AD 150s / early 160s the Antonine Wall was abandoned by the Roman army, who moved south to the line of Hadrian's Wall and its outpost forts. Evidence from some sites, notably Old Kilpatrick and Bar Hill (PIC168), indicate that the frontier's installations were deliberately demolished and ritually decommissioned in advance of the redeployment south. Although the Roman army would return to the area during the early third century campaigns of Septimius Severus, there is no evidence that the Antonine Wall was brought back into functional operation or reoccupied by Roman forces.

Active research and fieldwork on the Antonine Wall has, not surprisingly, focused almost entirely on its Roman period construction, functional operation, and abandonment. There is, therefore, significantly less detailed knowledge of the Wall's post-Roman history. A possible souterrain at Shirva, in the Wall's central sector midway between the forts of Auchendavy and Bar Hill (PIC168), may represent the earliest post-Roman settlement activity on the former Roman frontier and could have been in operation from very soon after the Roman withdrawal until as late as the AD 220s. Although the Antonine Wall had ceased to function as a frontier

of the Roman Empire, it would continue to play a role in subsequent settlement and other activities in the region.

It appears likely that the Forth-Clyde isthmus served as an effective border in the early medieval period, separating the Anglo-Saxons and Picts in the east, while to the west the successive British kingdoms of Alt Clut and Strathclyde straddled the line of the former Roman frontier. Whether or not the Antonine Wall was itself utilised or recognised as a geopolitical or cultural barrier in this context, its continued visibility would have served to underscore the transitional nature of the isthmus in this period. Timber structures located along the Wall in the area of Falkirk – a ninth-century hall possibly associated with the Thanes of Callendar at Callendar Park and another large structure east of the fort at Mumrills – may represent examples of early medieval reuse of the Wall’s line as a regional power centre⁴³.

Castles or mottes were also constructed on the line of the Wall in the Norman and later medieval period at Inveravon, Watling Lodge (PIC178 and PIC179), Seabegs (near PIC176), Kirkintilloch, and Cadder, each using some aspect of the Roman frontier as part of its own defences. These are part of a wider regional collection of medieval period fortified sites and may not necessarily reflect a conscious decision to reuse former Roman military sites. They do, however, reflect these particular locations’ continued relevance and significance as powerful places within a medieval landscape and this later reuse does not detract from the sites’ association with the Roman frontier, but adds further depth to their accumulated meanings and significances within the present. It is in this period when the Wall is first recorded (by John of Fordun) as bearing the name “Grymisdyke,” later modified to “Graham’s Dyke,” and still reflected within modern street names in the eastern half of the Wall’s line.

In the late seventeenth century the Wall began to attract serious antiquarian attention and was visited and discussed in some depth through the eighteenth century by antiquaries such as Sir Robert Sibbald, Alexander Gordon, and the Rev. John Horsley, amongst others. These antiquaries provided valuable early documentation of the Wall and its remains before the extensive industrialisation and development of the Wall’s corridor from the late eighteenth century onward. Such works included the controversial dismantling of Arthur’s O’on by Michael Bruce of Stenhouse in 1743, using the masonry from the possible Roman temple in the construction of a dam on the Carron⁴⁴. Numerous other areas of the Wall also fell prey to quarrying and agricultural “improvements”, and the wider Antonine Wall corridor played an important role in the Industrial Revolution, with the formation of the Carron Iron Works, construction of

⁴³ For further discussion, see: Maldonado 2015

⁴⁴ See <https://canmore.org.uk/site/46950/arthurs-oon-stenhouse>

the canals, steam engine experiments by James Watt at Kinneil, increased mining and factory production, and the building of the railways. The Forth-Clyde Canal was particularly important, criss-crossing the former Roman frontier multiple times and running parallel to it for long stretches; while the construction of the canal extensively damaged large portions of the Wall, it also revealed significant information and provided the context for later antiquarian activities and the transition to formalised archaeological societies and – by the 1890s – more scientific exploration.