Historic England

Linear Frontiers

Introductions to Heritage Assets

Summary

Historic England's Introductions to Heritage Assets (IHAs) are accessible, authoritative, illustrated summaries of what we know about specific types of archaeological site, building, landscape or marine asset. Typically they deal with subjects which have previously lacked such a published summary, either because the literature is dauntingly voluminous, or alternatively where little has been written. Most often it is the latter, and many IHAs bring understanding of site or building types which are neglected or little understood.

This IHA provides an introduction to linear frontiers (a linear monument designed to define the territory of one polity against different or potentially hostile polities or groups). There are two major linear frontiers in England, which are among the best-known ancient monuments in Britain. They are Hadrian's Wall, built under the Roman emperor Hadrian from AD 122, and occupied and used for some 300 years, and Offa's Dyke, associated with Offa, King of Mercia (AD 757-796). A list of in-depth sources on the topic is suggested for further reading.

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It is one is of several guidance documents that can be accessed at
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Front cover
Offa's Dyke crossing the Shropshire hills

Introduction

A linear frontier can be defined as a linear monument designed to define the territory of one polity against different or potentially hostile polities or groups. To be able to define them thus presupposes that we know the date, function, and instigators of these monuments.

There are many boundary systems, mostly comprising ditches and banks, often running for long distances, which may have served this function in the past, but which cannot be identified as definite frontiers (see linear boundaries).

There are two major linear frontiers in England, which are among the best-known ancient monuments in Britain. Revealingly, the modern names of both relate to the historic rulers under whom they were built. They are Hadrian's Wall, built under the Roman emperor Hadrian from AD 122, and occupied and used for some 300 years, and Offa's Dyke, associated with Offa, King of Mercia (AD 757-796).

1 Description

Hadrian's Wall

The Roman frontier line between the Tyne and the Solway, between Wallsend and Bowness-on-Solway, is generally known as Hadrian's Wall (Figure 1). Although the best known of the linear elements of the Hadrian's Wall system is the stone Wall itself, the visitor to the frontier today can see far more of the linear earthworks, which formed such an important integral part of the system. As a complex of directly inter related earthworks, well preserved and documented, these components of the World Heritage Site are one of the most significant archaeological resources of their type in Britain.

Initial phase

The original plan for the building of the frontier comprised a linear barrier, the Wall itself, with integral milecastles and turrets. To the north of the wall was a ditch, on the northern side of which was an upcast bank, taking the form either of a glacis or a counterscarp. From Wallsend to the River Irthing, in Wall-mile 48, the Wall was built of stone.

The foundations for the Wall were generally some 3.15 m wide, and were either built directly upon the ground or in a shallow trench. In Wall-miles 7-22 the Wall constructed upon these footings is known as Broad Wall, and above offsets on both faces this Wall averages at 2.85 m in width; a measurement close to 10 Roman feet. It is clear that the broad foundation had been completed prior to a decision to reduce the Wall width to so-called Narrow Wall, at 2.25 m wide (close to 8 Roman feet).

Most of the milecastles and turrets were linked by stretches of Narrow Wall, often built on broad

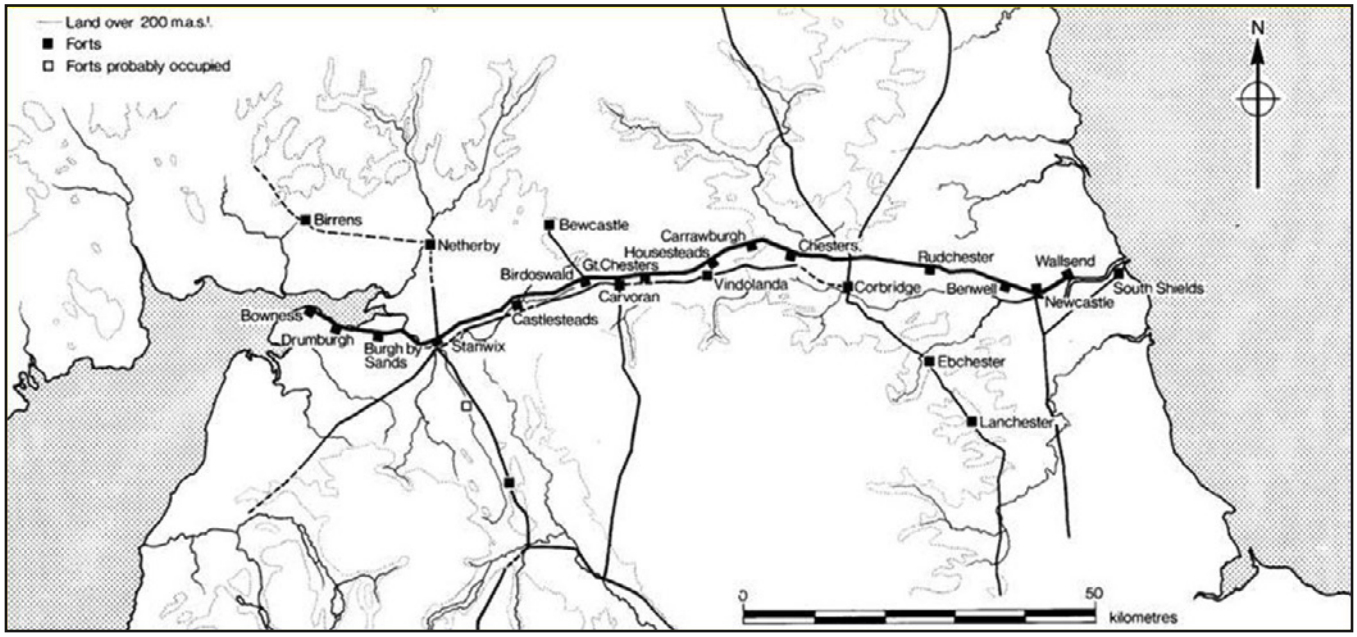

Figure 1
Map of Hadrian's Wall.

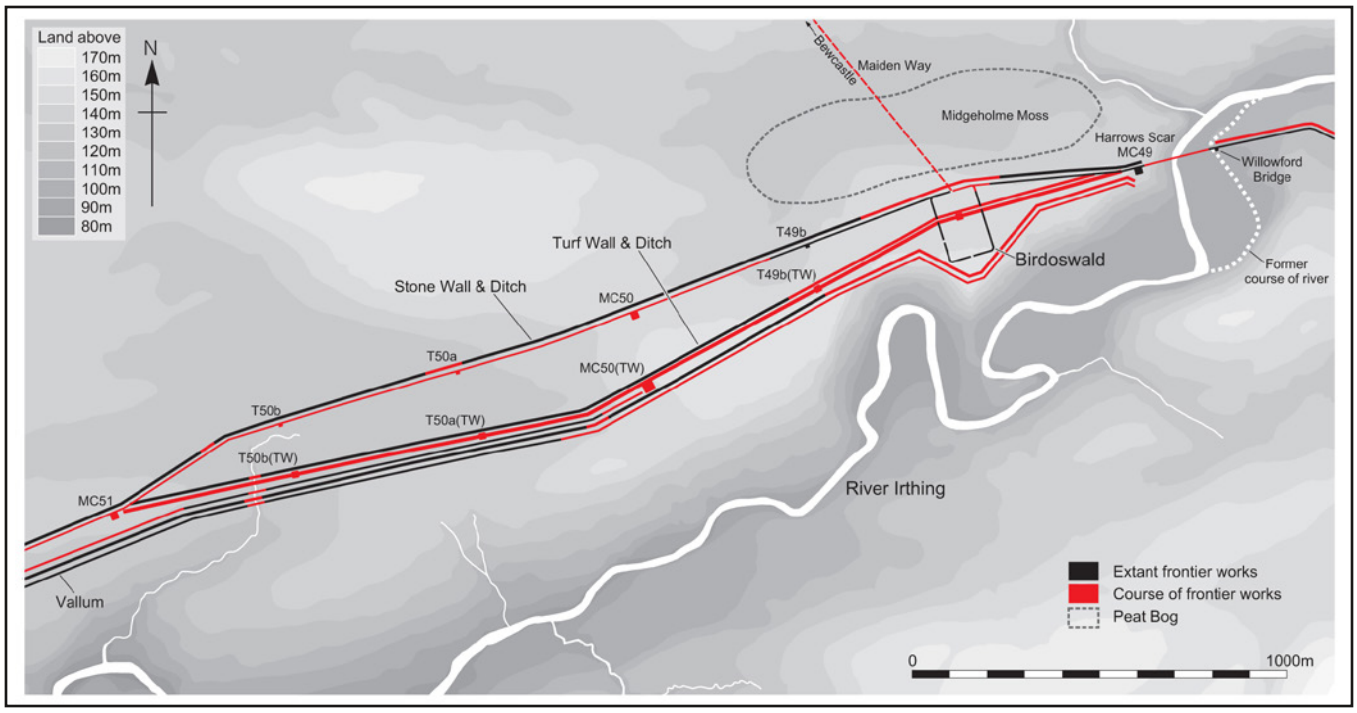

Figure 2
Map of the Birdoswald sector of Hadrian's Wall. Here the stone replacement of the Turf Wall follows a different alignment, so for almost 2km the stone and Turf Walls, their ditches, milecastles and turrets, together with the Vallum can be seen on the ground. The fort of Birdoswald and the bridge at Willowford make this area the most complete group of Wall structures on the line.

foundations, and this left offsets, or 'points of reduction' at the points where wing-walls and foundations met Narrow Wall curtain. These offsets were all on the southern side of the Wall, allowing a continual face to be seen from the north side. The Turf Wall, which ran from the river Irthing to the Solway, is described below, but its replacement in stone measured in the order of 2.75 m (close to 9 Roman feet) (Figure 2). This has been termed Intermediate gauge (intermediate, that is, between the Broad Wall and the Narrow Wall).

Factors such as the height of milecastle gate arches and the angle of rise of steps within milecastles have allowed the height of the Wall to be estimated at around 4.4 m or 15 Roman feet. It is very likely that there was originally a Wall-walk for patrolling, as is suggested by the presence of foot-bridges carrying the Wall over the rivers North Tyne and Irthing. A Wall-walk suggests a parapet on the north side at least.

The Turf Wall extended from the Irthing to Bowness on Solway. The reason for the contrasting construction materials of the curtain to east and west of the Irthing remains obscure.

The Turf Wall (Figures 3 and 4) was constructed on a flat base, either of several layers of turf or of cobbles as at Burgh-by-Sands. The base of the Wall was normally some 6 m wide. The height of the Turf Wall has been estimated at some 12 ft. The Wall was constructed using whatever materials were to hand. Where turf was available for building it was clearly stripped from the areas to the north and south of the Wall. The stone replacement of the Turf Wall was mostly upon the same line, though the Stone Wall diverges from the Turf Wall line between Milecastles 49 and 51.

Figure 3
Section through the Turf Wall at Appletree.

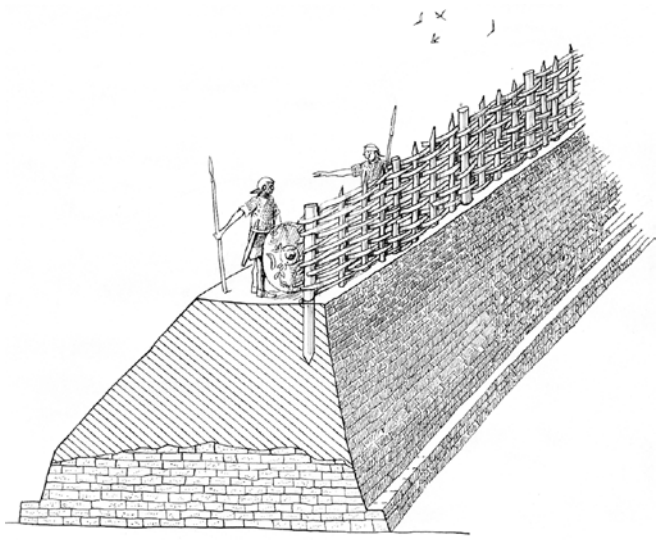

Figure 4
Reconstruction of the Turf Wall with possible hurdle breastwork.

A major part of the first plan for Hadrian's Wall was the provision of milecastles and turrets (Figures 5 and 6). It is generally assumed that there were eighty milecastles, designed to be located at intervals of one Roman mile (1,480m). There is some considerable variation in the precise spacing, often introduced in order to take account of topographical features, and consequently several milecastles remain imprecisely located.

Figure 5
The Stone Wall and milecastle 38 (Cawfields) from the west.

Figure 6
Stone Wall turret 7d (Denton Burn).

Between each pair of milecastles were two evenly spaced turrets. For convenience of reference, the structures are numbered from the east. Milecastles are numbered 0-80, and turrets (T) are referred to by the letters (a) and (b) after the number of the milecastle to their immediate east.

The milecastles were small defended enclosures, of the type sometimes referred to as fortlets. They were integral with the curtain wall, which invariably acts as the north wall of these structures. They conform to a generally recognised overall plan. The main feature common to all is a pair of single-portal gates in the centre of the north and south walls, connected by a central roadway. They were generally some 18-23 m long and 15-18 m wide, although there is considerable variety in size and shape. Some were built with their long axis parallel to the curtain wall while in the majority the long axis runs north-south. The external south-east and south-west corners are always rounded in the same way as fort corners.

The form of milecastle gateways varies, and four types are recognised. The most variable factor of the milecastles appears to be the plan of the interior buildings, where the number and dimensions of buildings vary substantially from one installation to another. All of the milecastles to the east of the River Irthing (up to and including Mc 48) were constructed in stone, but those on the west side of the Irthing (Mcs 49-80) were built initially with turf or earthen ramparts and timber gate-towers. The Turf Wall milecastles were rebuilt in stone, at the same time as the stone curtain wall replaced the Turf Wall.

The turrets were constructed integrally with the curtain wall on the Stone Wall end. They were free standing towers in the Turf Wall sector, and the Turf Wall was butted up against their sides. When the Turf Wall was replaced in stone, the stone curtain wall again abutted the free-standing towers. The turrets were nominally some 5.8 m square in plan and were accessed by doorway at ground level. They would have had a storey above the top of the wall, upper storeys being reached by stairs, for which evidence has been found. Whether there was access from the turrets to a Wall-walk, and the nature of the roofing of the turrets are points of debate.

Lying to the north of the curtain wall(s), the Wall ditch (Figure 7) is a consistent feature from coast to coast except in the Solway marshes and where the Wall mounts the crags of the central sector. Even in the latter area the ditch tends to reappear in the gaps between hills. The early Turf Wall was equipped with a ditch, so in the area where its stone replacement diverges from the original line there are in effect two Wall ditches. There are wide variations in profile, dimensions, and completeness, and this is often due to the varied character of the geological material through which the ditch was cut, though it seems to have been cut with edges as steep as it was possible to create.

Figure 7
The Wall ditch and counterscarp at Black Carts. The mounds north of the counters carp are the product of stone quarrying.

In general the ditch is some 8.75 m wide and 2.80 m deep. On the north side of the Wall ditch lies a bank of upcast, which seems primarily to derive from the first excavation of the ditch and possibly, though by no means certainly, by subsequent cleaning out of the feature. The bank varies enormously in size and shape throughout the length of the frontier; in some places it is a broad, even, low bank (glacis), elsewhere a high, crested, narrow earthwork (counterscarp).

The berm separating the Wall from the ditch was generally about 6 m (20 ft) wide in the Stone Wall sector and 1.9 - 2.4 m (6 – 8 ft) for the Turf Wall. Additional obstacles placed on the berm from Wallsend to Throckley, a distance of 12 miles, take the form of regularly spaced pits, which seem to have been emplacements for forked branches creating a defensive entanglement.

The Forts and Vallum

Part way through the construction of Hadrian's Wall, it was decided to locate garrison forts on the line. These were auxiliary forts of a type designed to accommodate single, whole auxiliary units. Fifteen of these forts were eventually provided. Some forts straddled the wall and projected to the north, with three principal gates north of the barrier. In other forts the north wall of the fort was also the line of the curtain wall. During the occupation of the Wall, extramural settlements of considerable size grew up outside the walls of the forts.

The earthworks known as the Vallum (Figure 8) were added to the frontier complex some years later than the construction of the curtain wall, and the decision to build it was either contemporary with, or later than the decision to add the garrison forts to the Wall.

Figure 8
Section through the rock cut Vallum ditch at Black Carts. The ditch runs across the picture from left to right.

The Vallum runs from western Newcastle to Bowness on Solway. The essential element of the Vallum is a ditch, nominally 6 m wide and 3 m deep, with a flat bottom. Recent excavations have shown that the depth and profile of the Vallum ditch vary, though the width seems to be reasonably constant. The ditch is flanked by two mounds, each set back some 10 m from the ditch edges. The mounds are 6 m in width, and are usually of earth, sometimes faced with turf cheeks.

At each fort a causeway of un-dug earth was left and revetted on each side with stone. The causeways were surmounted by free-standing stone gates which were closed from the fort side. Unlike the Wall ditch, the Vallum ditch was continuous, attesting to its perceived importance in the system. Gravel or stone metalling has been identified in different places on both berms of the Vallum, but this is patchy and probably does not imply a road or track along the Vallum as once thought.

A further element in the anatomy of the Vallum is the so-called marginal mound which occupies part of the south berm on the south lip of the ditch. Although this has generally been attributed to the deposition of material cleared from the bottom of the ditch, recent work indicates that it might have been a primary feature, at least in some places.

The distance of the Vallum from the Wall varies. In general there was a preference for the earthwork to run close to the rear of the Wall where topography allowed, and in these areas the Vallum is forced to deviate to skirt the southern side of the forts. In the central sector, however, the Wall runs along the top of the crags of the Great Whin Sill while the Vallum, laid out in long straight stretches, lies in the valley below to the south. Similarly the Wall follows the line of high ground along the rivers Eden and Solway, while the Vallum, again in economical long, straight, alignments, follows the nearest practicable line.

Gaps visible in the mounds together with crossings over the ditch are all, other than at forts, probably secondary, and are thought to date to the abandonment of Hadrian's Wall during the Antonine move into Scotland and the occupation of the Antonine Wall. In general it seems that the Antonine slighting of the Vallum consisted of a regular provision of some 35 crossings every mile, and the clear traces of these breaks to be seen today show that the Vallum was never restored to its former condition and purpose.

The last of the linear elements of the complex is the road known as the Military Way. This is a secondary feature of the frontier. Link roads from the Military Way connect it to some turrets and milecastles. The road can be clearly seen in the central sector. It is usually about 6m wide and is cambered to a height of some 150mm. In addition, recent excavations have identified a narrow track immediately behind the Wall in several locations.

Offa's Dyke

Offa's Dyke is a continuous earthwork running from Treuddyn, south of Mold, in North Wales, to the Herefordshire Plain north of Kington on the River Arrow at the south end, a distance of 103 km (Figure 9). It is one of a number of systems of dykes that lie in the Welsh border area, which have been thought to form part of a single system extending from the Dee Estuary to the Bristol Channel. Recent research has led to the conclusion that the continuous stretch is the Dyke of Offa, recorded in documentary sources.

An earthwork known as Wat's Dyke (which lies entirely within Wales) runs southward for 38.6 miles from Basingwerk on the Dee southwards. This shares features with Offa's Dyke as now understood, but runs parallel to it at its southern end. Although possibly with a similar function to Offa's Dyke it cannot be viewed as part of the same system. The ditch averages 7 m wide and 2 m deep, though it is sometimes more substantial – up to 9 m wide and 3.5 m deep. The mound, situated on the east side of the ditch, was created using the material excavated from the ditch and varies in size and shape according to the nature

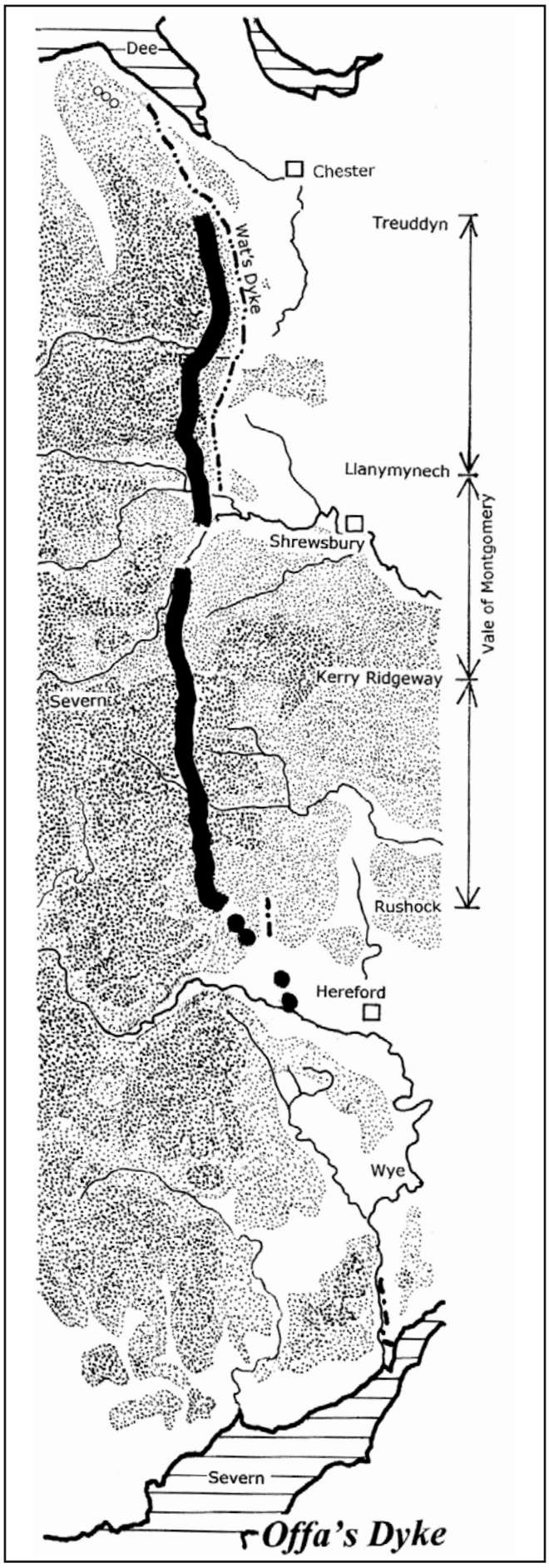

Figure 9
The course of Offa's Dyke.

of this material. The ditch is generally dug on the western flank of hills, slightly below the crest, so that the mound adds to the hill crest, appearing thus to be a more formidable barrier than it would if built on the flat. This causes problems with drainage, which might have been alleviated by the provision of timber culverts, though none of these have been found. The openings and gaps in the dyke are recent, and many have been cut to facilitate drainage. There is no evidence whatever for original gaps, gates or causeways, though these have been sought. Similarly no evidence has been found for a breastwork on the bank or for associated watchtowers, forts, or any garrison place.

Function

Only one sentence of classical literature, in *The Augustan Histories*, describes Hadrian's Wall and its function. It states that 'Hadrian was the first to build a Wall, eighty miles long, to separate the Romans from the barbarians'. There are two basic ideas about function. The first is that, with its gates every mile at the milecastles, the complex was intended to allow crossing from one side to the other under control, including ensuring the payment of Roman taxes by those entering the province. The second idea stresses a military purpose, quoting the very large garrison on the Wall and the obstacles on the berm.

It seems likely that the first plan was indeed to construct a controlled border with crossings, while the decision to place the forts on the line put the frontier into a more aggressive military posture. The Vallum further restricted access to the crossings after the forts had been built.

The description of Offa's Dyke written in the 890s by the monk-chronicler Asser recalls the reference to Hadrian's Wall: 'Offa…… had a great dyke built between Wales and Mercia from sea to sea.' As we have seen, the Dyke does not actually link the Dee estuary and the Bristol Channel, so some poetic licence appears to have been used in this description. It is now considered that the Dyke marked the political boundary between Offa's kingdom of Mercia and the Welsh kingdom of Powys.

2 Chronology

Work on Hadrian's Wall is generally agreed to have commenced in AD 122, and to have continued to the 130s. During the reign of Antoninus Pius (AD 138-161) the frontier line was moved to the Antonine Wall, in modern Scotland, and in the 160s Hadrian's Wall was reoccupied, to remain the frontier until the early 5th century. During this time the milecastles, turrets and fort settlements were occupied, and there is evidence at a number of sites, particularly at Birdoswald, for continued occupation into the early post Roman period.

Offa's Dyke was constructed during the reign of that monarch, AD 757-796.

3 Development of the Asset Type

Hadrian's Wall has been the subject of study for 400 years, and the development of the monument is well understood in general outline. The fact that the system was not built in a single operation, and the phasing of Wall, forts and Vallum is well understood (see above) through excavations undertaken in the 1930s.

More recently, geophysical survey has revealed the extent of the extra-mural settlements, which have proved to be very much larger than previously thought. Despite the amount of work undertaken on the frontier complex, every excavation springs new surprises and throws up new questions to be asked of the monument.

Offa's Dyke has been the subject of major campaigns of excavation by Sir Cyril Fox in 1925-1930, and again by the Offa's Dyke Project under David Hill during the 1970s-1990s. The latter work has clarified which earthwork should be considered the work of Offa, and has confirmed the lack of gateways, or fortifications and the general form of the monument. A reappraisal, based on close examination and fieldwork over the past decade has been undertaken by Ian Bapty and Keith Ray of the Herefordshire Archaeology Unit.

4 Further Reading

The sheer quantity of literature on Hadrian's Wall can be daunting. The most up-to date survey of the Wall, incorporating a complete bibliography is David Breeze's 14th edition of *J. Collingwood Bruce's Handbook to the Roman Wall*, (2009).

Brian Dobson and David Breeze, *Hadrian's Wall* (2000) is still the standard textbook on the subject of the northern frontier of Roman Britain

A conference on *Understanding Hadrian's Wall* was held in 2006, covering many aspects of the frontier. The papers have been published: P. Bidwell (ed.), *Understanding Hadrian's Wall* (2008).

A further volume examining current questions is the publication which arose from the process of creating a Research Framework for the World Heritage Site: M. Symonds and D. Mason (eds.), *Frontiers of Knowledge* (2009).

Offa's Dyke is less well served. The major work on the 1920s work is by Cyril Fox, *Offa's Dyke: a Field Survey of the Western Frontier Works of Mercia in the Seventh and Eighth Centuries AD* (1955).

The conclusions of the recent work of the Hadrian's Wall Survey is summarised by David Hill and Margaret Worthington, *Offa's Dyke: History and Guide*, (2003). I. Bapty and K. Ray, *Offa's Dyke: Landscape and Hegemony in Eighth Century Britain* (2014).

5 Where to Get Advice

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6 Acknowledgments

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Figure 4: © Judith Dobie

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