THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

Forden Gaer Environs, Powys

ARCHAEOLOGICAL ASSESSMENT AND MANAGEMENT

CPAT Report No 690

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February 2005

Report for Cadw: Welsh Historic Monuments

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cover photo: Forden Gaer from the south. Photo CPAT 90-c-420

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1 INTRODUCTION

1.1 The Roman auxiliary fort at Forden Gaer and the area immediately surrounding it have long been recognised to be of considerable historical and archaeological significance. The earthworks of the fort itself are a prominent local landmark, while the adjacent fields have produced a wealth of cropmark evidence that suggests extensive buried landscapes ranging in date from the Bronze Age to the more recent past.

1.2 The area has already attracted much archaeological interest, notably with excavations on the fort during the 1920s and 1980s, as well as geophysical and topographical surveys and continuing aerial reconnaissance. In recent years attention has been focused on the problems of managing the archaeological resource with the recognition that this is under constant threat, both from natural forces and from the plough. As a result, the present initiative was developed as part of the wider Roman Military project being undertaken by CPAT, itself part of a broader pan-Wales programme with funding from Cadw: Welsh Historic Monuments. The aim of this study is, firstly, to assess the known resource, not only the fort itself but also its immediate environs, an approach being adopted for other Roman military sites in Powys and beyond during the present project; and secondly to identify a series of management options for a nationally important archaeological resource that is under threat.

1.3 The study is based on a re-assessment of existing information, primarily derived from the Regional Historic Environment Record, together with readily available published and unpublished sources. Although the area was visited during the preparation of this report, no new fieldwork was undertaken. Enquiries were made of the National Monuments Record, particularly with regard to the extensive aerial photograph collection, although time did not permit a thorough study of this, nor the collections held by CPAT and the University of Cambridge Air Photo Library.

1.4 The following report is structured to present an overview of the present state of knowledge regarding the fort and its environs, the nature and potential of existing records, the nature of the threats to the archaeological resource, and finally a summary of future research objectives and management proposals.

2 LOCATION, TOPOGRAPHY AND GEOLOGY

2.1 The Roman auxiliary fort at Forden Gaer (PRN 162) occupies a terrace above the eastern bank of the River Severn, centred on SJ 208989. The entire fort and much of the known archaeology within the surrounding area are protected as a Scheduled Ancient Monument (Mg145(POW)), covering an area of around 43ha.

2.2 The study area extends over approximately 2km^2 on the eastern side of the River Severn, from Trehelig Gro in the north to Rhydwhyman in the south, and eastwards as far as the Camlad (fig. 1). The area is generally rather flat, lying at between 75m and 80m above Ordnance Datum, with the exception of a low ridge around The Gaer, which rises to 95m OD. The area to the north-west of The Gaer lies on the floodplain with abundant evidence for former river courses, while the majority of the area lies above general flood levels. The solid geology is Buttington Shale overlies the Cefn formation and Forden Mudstone (Ordnance Survey Geology Sheet 151), with soils generally consisting of fine silts and alluvium of the Conway Association (Rudeforth *et al.* 1984, 114-116).

2.3 The area lies within the Vale of Montgomery, or Bro Trefaldwyn, recognised as an historic landscape in the *Register of Landscapes of Outstanding Historic Interest in Wales* (Cadw 1998, 132-35). Bro Trefaldwyn was also the subject of a detailed historic landscape characterization study, undertaken by CPAT in 1999-2000 (Britnell *et al.* 2000), the present study area occupying part of three distinct historic landscape character areas: Trehelig-gro, comprising the River Severn and its floodplain; Penylan, an undulating landscape of irregular fields; and Fflos, an area of late enclosed commonland along the Camlad.

3 ARCHAEOLOGICAL SUMMARY (fig. 2)

Prehistoric

3.1 Evidence from cropmarks suggests that much of the Severn Valley in eastern Montgomeryshire preserves a buried prehistoric landscape, comprising a range of funerary and ritual monuments, as well as later prehistoric enclosures and field systems, and the area around Forden Gaer is no exception. Flint finds (PRN 81463) suggest activity in the area from the Neolithic and at least four ring ditches (PRNs 5039, 5246, 5630 and 7033) have been identified to date, together with two defended enclosures (PRNs 4257 and 5035) of possible Iron Age date. A large erect stone to the west of the fort, known as the Hoare Stone (PRN 166), may be prehistoric in date and could be associated with an ancient river crossing. A series of cropmarks surrounding two conjoined depressions (PRN 4574) have no obvious interpretation, although a possible henge has been suggested, as well as a Roman gyrus. The proximity of the complex of monuments on the west bank of the Severn at Dyffryn Lane, 2.5km to the north, indicates the potential of the area and reinforces the significance of the valley floor during this period.

Romano-British

3.2 The Roman occupation was centred on the auxiliary fort (PRN 162), probably the *Lavobrinta* of the Ravenna Cosmography, which lies on the line of the Roman road between Caersws and Wroxeter (*Viroconium*) (Jarrett 1969, 86). The siting of the fort was almost certainly influenced by the proximity of an important ford across the Severn, although the main line of communication southwards towards Caersws is likely to have followed the eastern bank of the river (Britnell *et al.* 2000, 22). The possibility of an earlier marching camp (PRN 5038) to the north-east of the fort is suggested by cropmarks which have revealed part of a rectangular enclosure.

3.3 The evidence for the construction and phasing of the fort is largely based on the results from the 1920s excavations by the Powysland Club (Pryce & Pryce, 1927; 1929; 1930) and from cropmarks which have revealed something of the internal layout. A reassessment of the excavations, together with some reinterpretation of the cropmarks, was undertaken by Crew as an undergraduate thesis, a summary later being published (Crew 1980) which provides the most comprehensive account of the fort to date, and from which much of the following description is drawn.

Auxiliary Fort

3.4 The earthworks of the fort survive as a prominent feature, with the ramparts standing around 2m above the surrounding area and measuring approximately 197m north–south by 165m east–west, with gateways only apparent in the north and south defences. There is also a substantial external bank on the southern side and around the south-western corner. Evidence from the 1920s' excavations suggests that there were at least four main phases of development between the late 1st century and the second half of the 4th century.

3.5 The initial phase comprised a timber-built fort of Flavian date, the only visible section of rampart being what is now the outer bank, which would have been defended by a single ditch. Internally, the phase 1 fort appears to have been unusual in having a non-central through road, which now shows clearly as a cropmark. In the early 2nd century the area of the fort was reduced with the construction of new ramparts of unknown form surrounded by a single ditch. In the mid-2nd century the ramparts were again reconstructed, this time in clay and gravel with a timber corduroy and a triple ditch system. Internally, the phase 3 fort followed the conventional pattern with a central *principia*, a central north–south road and perhaps also an east–west road, although there is no evidence for associated gateways. During the 4th century the final phase consisted of substantial changes to the interior and the refurbishment of the existing rampart, surrounded by a single large ditch.

Vicus and extra-mural activity

3.6 Evidence from cropmarks and excavations in 1987 (Blockley 1990) has confirmed the existence of a *vicus* (PRN 4872), as well as other extra-mural structures assumed to be contemporary with the fort, although the extent of this occupation remains uncertain. To the south of the fort occupation had extended at least as far as the present river bank by the mid to late 2nd century, although this ceased after the early 3rd century.

3.7 To the north-east of the fort a complex of cropmarks includes a large rectangular double-ditched enclosure (PRN 163) which was also investigated in 1987. Measuring around 60m × 50m internally and surrounded by V-shaped ditches this may be the site of a *temenos*, or temple enclosure. Closer to the fort a complicated series of cropmarks (PRN 4574) surrounds two conjoined depressions, each around 50m across, the base of which appears to consist of compacted gravel, possibly indicating an exercise area or *gyrus* (Crew 1980, 740).

3.8 The Roman road (PRN 32857) leading east-north-east from the fort still survives in places as a low earthwork, but is more readily identified as a distinct soil or cropmark, with flanking ditches identified in places.

Farmsteads and field systems

3.9 To the north-west of the fort further cropmarks (PRN 164), partly confirmed by geophysical survey during 1971-2, indicate the presence of a number of enclosures (PRNs 6322-4 and 32856) and boundary ditches which suggest a farmstead with associated field system. Cropmarks to the north-east of the fort (PRN 5037) indicate a more extensive field system, possibly associated with a defended enclosure of likely Iron Age date. A series of cropmarks close to the River Severn (PRNs 4256 and 32838) have been interpreted as possible enclosures and field systems, although it now seems likely that they are at least partly reflecting a palimpsest of palaeochannels.

Early Medieval

3.10 By the time of the Domesday book was compiled for William I in 1086 there was already a settlement in the vicinity of the Roman fort named *Horseforde*, literally a 'horse ford', indicating the significance of the river crossing, although the Anglo-Saxon placename associated with the fort was *Tornebury*, implying that the area was covered in scrub vegetation (Britnell *et al.* 2000, 22).

3.11 To the north-west of the fort, overlying one of the earlier cropmark enclosures, is a post-Roman aisled hall (PRN 4086), initially identified from cropmarks and later confirmed through trial excavation (Blockley 1989). The form of construction and size of the hall are comparable with later Saxon royal palace sites of the 9th to 11th centuries, as at Cheddar.

3.12 Further to the north-west a possible square barrow (PRN 33071) has been identified as from cropmark evidence, suggesting a ditched feature *c.* 12m across.

Medieval

3.13 During the medieval period the ford became the meeting ground of Welsh princes and English kings and it was here that the Treaty of Montgomery between Llewelyn ap Gruffudd and Henry III was concluded in 1267, conferring the status of Prince of Wales upon Llewellyn. By the 13th century the fort (PRN 176) had become known in Welsh as Rhydwhiman (from *rhyd chwima*, meaning swift ford) and in English as the ford of Montgomery (*vadum aquae de Mungumery*) (Britnell *et al.* 2000, 22; 31).

3.14 In the early 1070s a new earth and timber castle was built to the east of the ford by the Norman earl, Roger of Montgomery. The site, which was excavated between 1960 and 1992 (Barker and Higham 1982; 2000) is now known as Hen Domen, but was originally called *Muntgumeri* after Roger's home in Normandy (Britnell *et al.* 2000, 26).

3.15 Although direct evidence is scarce, the area may have divided into strips within open fields. This is suggested by the field pattern depicted on an estate map of 1783, particularly in the area to the north and west of Gaer Farm, although the rather tortuous route of the road to the north-east of the fort may also have fossilized elements of an earlier field system.

Post-medieval

3.16 The remnants of a medieval field system may well have persisted until relatively recently as both the 1783 estate map and the tithe survey both suggest areas of former strip fields fossilised in the field patterns and boundaries at that time. This is particularly true of the area to the west of The Gaer farm. Until at least the 1840s the road from Forden to Caerhowell followed a rather tortuous route leading through the Roman fort. This was later replaced by the present turnpike road, following a relatively straight course further to the east.

4 ARCHAEOLOGICAL ARCHIVE (fig. 3)

4.1 The area around Forden Gaer, and in particular the fort itself, has been the subject of a number of excavations between the 1920s and 1980s, each of which has contributed further to our understanding of the archaeology. Fortunately, the results from each of the excavations have been published to a greater or lesser degree, enabling easy access to the evidence. From the research undertaken by Crew (1980) it is, however, clear that the earlier excavation reports may not have been entirely accurate in their interpretation and location of the excavation trenches, and he has demonstrated the worth of examining the original site archives.

1920s excavations

4.2 A series of trial excavations were undertaken on the fort between 1927 and 1929 under the direction of F N Pryce and T Davies Pryce, the results being published as a series of interim reports in *Archaeologia Cambrensis* (Pryce and Pryce 1927; 1929; 1930). Four long trenches were excavated, investigating the interior of the fort as well as its defences. In the interior the trenches were sometimes expanded to investigate certain features in more detail, with the addition of a number of small trial trenches.

4.3 Although the excavators' interpretation were questioned by Crew, the 1920s excavations represent the only significant investigation of the fort itself and current theories on the dating and phasing of the fort are largely based on their evidence. The location of the site archive is not recorded in the Regional HER, but may be revealed through further investigation.

1975 excavations

4.4 A small area was investigated by J. Connell next to the river, to the south of the fort. *Vicus* occupation was identified dating to the 2nd and 3rd centuries, comprising a clay-floored building with timber and stone walling. A note was published in *Archaeology in Wales* (Connell 1975), and it is assumed that the site archive remains with the excavator.

1987 excavations

4.5 A series of trial excavations were undertaken by CPAT in 1987, published by Blockley (1989) in *Montgomeryshire Collections*. To the south of the fort an area of 4 × 2m was excavated against the edge of the river cliff, close to the area investigated by Connell in 1975. Further evidence for buildings within the *vicus* was identified, together with part of the road leading south from the fort. In the fort itself a small section of the 1920s excavation was reopened across the south-eastern defences, the purpose of which was to determine the affect of ploughing, the results not surprisingly indicating that the overall height of the rampart had been reduced by 0.5m, including 0.25m of the upper rampart deposits. Elsewhere, two trenches were excavated to investigate cropmarks, one confirming the aisled hall north-west of the fort and the other across a double-ditched rectangular enclosure to the north-east which is suggestive of a *temenos*, or temple enclosure. The site archive has been deposited with the Historic Environment Record, CPAT, while the finds were deposited with the Powysland Museum in Welshpool.

Topographical survey

4.6 The fort has been depicted on a succession of cartographic sources from the 1783 estate map, through various editions of the Ordnance Survey to the present day. A detailed survey was undertaken by Pryce and Pryce in the late 1920s, their site archive containing a large-scale plan locating the various trenches. This was subsequently checked by a plane table survey in 1974, adding further detail of the outer bank (Crew 1980, 731).

4.7 As part of the programme of work by CPAT in the late 1980s a detailed topographical survey was undertaken of the fort, comprising a gridded survey with spot heights taken at 2m intervals. The results were used to produce both an earthwork survey and a contour survey (fig. 4), but perhaps more interestingly it provides a significant resource for future

interpretation. The archive includes a set of computer files containing the spot heights within each grid which could be manipulated and entered into surface modelling software to create a digital terrain model of the fort.

Geophysical survey (fig. 3)

4.8 Two phases of geophysical survey were undertaken by the Geophysics Section of the Ancient Monuments Laboratory in 1971, by Clarke, and in 1972 by Haddon-Reece. These concentrated on the area around the north-west corner of the fort, the complex of enclosures north of the fort and the double-ditched rectangular enclosure to the north-east (Crew 1980, 731-2). The results, which have not been published, appear to have confirmed many of the features identified as cropmarks, as well as identifying a number of new anomalies.

4.9 A further two areas of geophysical survey were undertaken more recently by S Moore as part of an undergraduate dissertation at the University of Bradford (Moore 2004). The objective was an investigation of the Roman road and palaeochannels to the south of the fort, using both magnetometer and resistance survey. The results identified a palimpsest of palaeochannels on the south-west side of the river, while on the northern side the survey tentatively identified the line of the Roman road. It failed, however, to reveal any features related to the *vicus*.

Artefacts

4.10 Although the area surrounding Forden Gaer clearly has a long and diverse history of occupation and activity it is somewhat surprising that there are no recorded finds from anywhere outside the fort, with the exception of small quantities of material from the 1975 and 1987 excavations. Given the intensive agricultural regime over much of this area it would not be unreasonable to expect a wealth of material within the ploughsoil.

Aerial photography

4.11 The Severn Valley south of Welshpool has long been recognised as an area rich in cropmark archaeology and indeed much of what is known of the area around Forden Gaer has been revealed as a result of continuing aerial reconnaissance. Cropmarks were first recorded in this area by J K St Joseph, and the Cambridge Air Photo Library has over 40 prints which were examined by Crew (1980) and used as a basis for plotting the known cropmarks at that time. Further photography was undertaken by Professor G D B Jones, although the results were never synthesised, and his unsorted archive resides in the NMR. In more recent years a wealth of aerial photography has been assembled in the collections held by CPAT, which has around 400 black and white prints and colour slides, and the National Monuments Record (NMR), RCAHMW, which has around 30 black and white prints and colour slides. The above are all oblique, low-level aerial photographs, specifically taken to record both earthworks and cropmarks. There are also collections of high-level vertical photography dating from the 1940s to the present day, held variously by the NMR, the National Assembly, Powys County Council and the Countryside Council for Wales. While these may not be ideal for identifying archaeological sites, they can provide a valuable resource for examining river movements and changes in agricultural practice.

4.12 A programme of aerial photographic interpretation and plotting was undertaken by CPAT during the 1990s, based largely on existing in-house black and white photography. The results are depicted in fig. 2, but it is clear, however, that this is an incomplete record, even for the known cropmarks and does not, for example, include some sites identified by Crew from the Cambridge photography. It is also worth noting that for the area around the fort the accuracy of the plotting has been limited by a lack of control points on most of the photographs.

5 EROSION AND LANDUSE

5.1 The loss of buried archaeological deposits in area surrounding Forden Gaer as a result of river erosion and agricultural practices has been recognised as a significant problem for at least the last 30 years.

Fluvio-geomorphology

5.2 In the historical era the River Severn has had a very active channel in the area around Forden Gaer, and further north as far as Buttington. The relatively broad floodplain and soft alluvial deposits are associated with a meandering river channel which is constantly on the move. This is perhaps most clearly illustrated by examining the area of Trehelig Gro, to the north of Forden Gaer, where changes in the river over the past 150 years have left a series of abandoned meanders.

5.3 In the area closest to the fort the general trend in river movement has been a steady progression of the channel to the east and north, with the large meander south of the fort gradually eroding the apex of the bend and depositing river gravels and silts on the inner, western side. This is clear from aerial photographs which show a series of former river courses, or palaeochannels on the western bank, observations which have been reinforced by the results from recent geophysical survey (Moore 2004).

5.4 By comparing the 1st edition Ordnance Survey 1:2,500 map of 1886 with the most recent Ordnance Survey mapping it is evident that up to 12m of bank have been lost over a period of around 100 years (fig. 5). In 1975 it was recognised that the river was actively eroding buried Roman deposits, including the Roman road south from the fort, and small-scale excavations undertaken then (Connell 1975) and in 1987 (Blockley 1989) clearly demonstrated the continuing loss of material. Indeed, it would appear that much of the area excavated in 1987 on the edge of the river cliff (figs 6-7) has now been lost to river erosion. In more recent years some attempt has been made to protect the bank further upstream by the deposition of large boulders, which appears to have deflected the main force of the river to some extent. The long-term impact of this measure on bank erosion around the Roman road is not certain.

5.5 The field visit undertaken during the preparation of this study identified the Roman road, visible in the upper part of the exposed river bank as a band of compacted river gravels c. 0.12m thick and perhaps 6.5m wide (fig. 8). Despite a number of periods of high river level during the winter of 2004-05 no serious active erosion was identified at this point, although several metres to the north the bank is actively eroding (fig. 9). Although no obvious archaeological deposits were immediately visible, a close inspection was not possible and it must be presumed that this area, along the western side of the road, is also very likely to contain buried remains relating to the *vicus*.

Agriculture

5.6 The threat to buried archaeological deposits by agriculture, principally through continued ploughing, is not a new phenomenon and the very fact that much of the archaeology in the environs of Forden Gaer is only known from cropmark evidence is testimony to centuries of degradation by the plough.

5.7 The impact of continued ploughing on cropmark sites in the area is largely unknown. Evidence is only available from the 1987 trial excavations undertaken within the *vicus*, to the south of the fort, and on the site of the possible temenos and the Dark Age aisled hall. The results suggests that in general the ploughsoil is between 0.25 and 0.3m deep, although the depth of regular ploughing is unknown.

5.8 Although it may be argued that for cropmarks sites much of the damage has already been done, for upstanding earthworks such as the fort this is far from the case. The reopening in 1987 of one of the 1927 excavation trenches across the defences enabled a direct comparison to be made between the stratigraphy recorded in the excavated sections. The results clearly demonstrated that over a period of sixty years the overall height of the rampart had been lowered by 0.5m as a result of ploughing, and that about 0.25m of the upper levels of the rampart had been lost (Blockley 1989, 25). The

agricultural regime, and the frequency of ploughing, is not known for the earlier part of this period, although it is likely that the present regime is more intensive in nature.

5.9 Within the fort the affects of regular ploughing are also quite clear with the internal roads regularly showing as distinct soil marks where the plough has disturbed buried deposits, bringing stone to the surface (figs 10-11). Whilst it is the roads which are the most obvious features, one must also presume that the occupation layers alongside and between the roads are also being disturbed, a situation which may be further elucidated by fieldwalking.

5.10 The present agricultural regime for the fort involves an irregular rotation of cereals, maize and pasture, such that ploughing can occur twice annually. Other areas, including those with known cropmarks, are also ploughed on a regular basis. At the time of the field visit in January 2005 all of the fields around the fort were under pasture, although the fort itself is due to be ploughed and sown with maize in April 2005.

5.11 The field visit also identified a further management issue for the fort, related to the winter grazing of cattle. It was evident that circular stock feeders were being placed within and around the fort (fig. 12), inside the scheduled area, leading to minor erosion by stock, but more significantly by vehicles. A number of tracks were visible across the north-western part of the defences and an area around the Hoare Stone in particular had been badly churned by vehicles and cattle (fig. 13).

Metal detecting

5.12 During recent discussions with the owners of Forden Gaer it was revealed that a significant number of metal detector users have sought permission to investigate the fort and surrounding fields, but have always been denied access, although some have turned their attention to the roadside verges. Clearly there is a potential threat from this type of activity and it is to be hoped that the owners will continue to deny access, both to scheduled and unscheduled fields.

6 MANAGEMENT PROPOSALS

6.1 It has been noted that much of the area around the fort, as well as the fort itself, is already protected as a Scheduled Ancient Monument, affording statutory protection to both the visible earthworks and the buried deposits alike. The pressures on the archaeology of this area are, however, such that damage to the archaeological resource as a whole is a continuous and continuing problem, whether it is scheduled or unscheduled.

6.2 As we have seen, the nature of the threat takes two forms: natural erosion through the effects of the river and agricultural erosion. The former is smaller in its scale, immediately terminal when it does occur, but is unlikely to affect more than a small area of the *vicus* at least in the foreseeable future. The latter is more widespread, but gradual, though in the end it will cumulatively be almost as drastic.

River erosion

6.3 The continuing erosion of a scheduled portion of the vicus, on the north-east side of the meander to south of the fort, has already been demonstrated. Although it is possible to protect the bank through some form of armouring, in practice this is may not to be a viable option. Apart from any cost implications, the interference with the flow patterns of the river can have unpredictable knock-on effects elsewhere downstream, and would probably cause considerable concerns at the Environment Agency.

6.4 We are therefore left with the inevitable conclusion that further archaeological deposits will be lost to river erosion alongside the Roman road south of the fort. The excavations in 1987 demonstrated that there is considerable archaeological potential in this area and since protection is not feasible, it is recommended that consideration be given to a programme of full excavation over an admittedly limited area to ensure its preservation by record.

Agriculture

6.5 The threats posed by cultivation and perhaps some other farming practices are such that no successful solution is likely to be achieved without a fundamental shift in the current farming regime. In the short term, through monitoring and agreement, the scheduled monument status of the fort should be sufficient to ensure that stock feeders and vehicles are kept outside the scheduled area, particularly in the winter, or in periods of excessively wet weather. Comparable damage is less likely in the other scheduled areas beyond the fort.

6.6 The long-term problems relating to ploughing and intensive crop rotations are inevitably more difficult to resolve, although a number of options should be explored, and these are outlined below.

6.7 Plough damage is a particular problem within the area of the fort and ultimately this can only be resolved through a fundamental change of land use from arable to permanent pasture. Less intensive ploughing, with longer periods of pasture within a rotation, would clearly benefit the site, but would simply slow down the process, and further damage would be inevitable.

6.8 The area of the fort represents a significant part of the landholding centred on The Gaer which practices mixed farming. One anticipates, therefore, that it would be unlikely that the present owners would voluntarily agree to a change to permanent pasture. Consequently, consideration should be given to developing a robust management agreement which the owners could accede to. Alternatively, the eventual purchase of the site might prove to be the only way of ensuring the permanent preservation of the site in the future.

6.9 The wealth of cropmark sites in the area demonstrates the fragile nature of much of the archaeological resource surrounding Forden Gaer. The 1987 excavations demonstrated a general depth of ploughsoil of between 0.25 and 0.3m, although there is no evidence at present to determine the average depth of current ploughing. It is clear, however, that

buried deposits are potentially at risk and the depth of ploughing should be monitored, with a view to prohibiting deeper ploughing.

Management options summary

- Management agreement
- Invocation of the scheduled status of the fort to prevent further surface damage
- Agreement to restrict deeper ploughing
- Change from arable rotation to permanent pasture
- Purchase of the fort
- Small-scale excavation to ensure preservation by record of area threatened by river erosion
- Undertake further evaluation with a view to enlarging the scheduled area and determining the vulnerability of buried deposits

7 FUTURE RESEARCH

7.1 There is considerable potential for further archaeological investigations which could not only improve our understanding of the area's archaeology, but also assist in its management. It is already clear from existing evidence that consideration should be given to extending the present scheduled area to encompass fully the known cropmark sites that surround the fort, and further investigation may well lead to recommendations for additional revisions. The nature of the archaeology around Forden Gaer is such that a variety of techniques could be employed.

Topographical survey

7.2 The detailed survey of the fort undertaken in 1987 has already been discussed, as has its potential for creating a digital terrain model. This would not only provide an accurate model of the fort, but could also act as a control for long-term monitoring purposes should a repeat survey be conducted.

7.3 The fields to the east of the fort contain a number of rather enigmatic earthworks which could be further elucidated through topographical survey, particularly if undertaken in conjunction with geophysical survey. This is particularly true of the two adjacent hollows in the more northerly field on the east side of the modern road, where cropmarks appear to show encircling banks and ditches which have led to a possible interpretation as a *gyrus*.

Geophysical survey

7.4 Geophysical survey has considerable potential for greatly improving our understanding of the buried remains of both the fort and its *vicus*. Within the fort a detailed survey, accurately located, could resolve a number of questions relating to the layout and phasing of the internal roads and buildings. To the south of the fort, although *vicus* activity is known to extend as far south as the river, its westward and eastward extents remain unknown. Survey in this area could also accurately locate the main Roman road and also provide details of the layout of the *vicus*, within which side roads are suggested by the 1987 excavation results.

7.5 Survey of the more enigmatic cropmark sites, particularly in conjunction with a topographical survey as noted above, could greatly assist their interpretation and thus provide an aid to management.

Digital mapping

7.6 The use of digital mapping, particularly through the medium of Geographical Information Systems (GIS), can enable the comparison and analysis of a wide range of data. A systematic programme of aerial photographic plotting, examining all readily available sources, is likely to result in considerable improvements to the existing information, both in the identification of new sites and the refinement of detail and accuracy. To date, although detailed plotting has been undertaken by Crew and by CPAT, neither has examined the full range of available photography and more recent views are, of course, also now available.

7.7 Digital mapping could also be applied to historic cartography, mapping changes in field patterns, roads and the River Severn. In particular, comparison between cropmarks and known post-medieval features could assist in the interpretation of the former.

Field walking

7.8 The lack of recorded finds from the fields around Forden Gaer has already been noted, as has the potential impact of continued ploughing on the archaeological resource. To date, no programme of field walking has been undertaken anywhere in this area, despite the obvious potential. In particular, it may prove worthwhile undertaken field walking in areas where cropmarks are poor or absent since their distribution suggests that the lack

of evidence may be due to unreceptive crops and soils rather than an absence of archaeological features.

Aerial photography

7.9 Continued aerial reconnaissance has significant potential for improving the definition of recorded features and revealing new sites, limited as ever by weather, crop and soil conditions. Crop and soil marks around Forden Gaer are, however, a regular feature, with the Roman roads in particular showing as soil marks after every ploughing. Good photography under the right conditions can prove invaluable and for the area south of the fort in particular the use of slightly a higher altitude would include sufficient control points to enable more accurate plotting.

Excavation

7.10 While each of the above techniques have a valuable role to play in the identification and interpretation of archaeological sites, it is arguably only through essentially non-destructive trial excavation that their significance, dating, condition and potential can be appreciated more fully. With regard to the future management of sites in particular, trial excavation can identify the depth at which sensitive deposits lie and their likely vulnerability to ploughing.

8 ACKNOWLEDGMENTS

8.1 The writer would like to thank the following for their assistance during the project: Bob Silvester, Bill Britnell and Ian Bapty, CPAT; Medwyn Parry, National Monuments Record, Aberystwyth; Mr and Mrs Gethin, The Gaer.

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Appendix 1

Gazetteer of sites

PRN 162 Forden Gaer, Roman fort NGR: SO20809890

Type 1: Fort Period 1: Roman

Roman fort situated on the east bank of the Severn, enclosing an area of 7.6 acres, large enough to accommodate a garrison of cavalry. Possibly the site of Lavobrinta of the Ravenna Cosmography. Occupation from mid-Flavian times and continued (not continuously) until second half of 4th century with a final phase of refurbishment of ramparts and relaying of major roads. Internal buildings probably of stone, no evidence for stone walls on rampart. Outer bank extends around east and south . Part of the western ditch is thought by Simpson to belong to an earlier larger fort (Simpson, G 1962) but Jarrett (1969) and Pryce & Davies Pryce (the excavators) believe it is a contemporary flood bank.

PRN 176 Rhydwhyman Ford NGR: SO20809846

Type 1: Ford Period 1: Medieval

Ford. Meeting place of Llewelyn and Henry II in 1267. Probably lies on side of Roman ford. No physical evidence of ford now apparent.

PRN 4086 Forden Gaer, ailsed hall NGR: SO20739909

Type 1: House ? Period 1: Dark Age ?

Double alignment of post pits c10m apart and 45m long with 10 to 13 pits visible in each line. Trail excavations by CPAT in 1987 indicated that this is probably a Dark Age hall (Blockley 1990)

PRN 4258 Rhydwhyman Enclosure NGR: SO21119849

Type 1: Enclosure Period 1: Roman ?

Rectangular enclosure about 30 metres north-west/south-east by 25 metres. Cut on west by linear ditch (probably old field boundary). No surface indications (OS 1982). AP evidence not wholly convincing.

PRN 4574 Forden Gaer fort, possible henge NGR: SO21039908

Type 1: Henge ? Period 1: Prehistoric

Two adjacent shallow hollows surrounded by cropmarks. Base of compacted gravel with thin turf veneer. Sinuous linear earthwork runs south. Definitely not a natural feature, air photos suggest at least a partial encircling bank with flanking ditches (ploughed out). Various interpretations have been proposed, a prehistoric henge, a Roman gyrus or exercise area, or an amphitheatre. It could conceivably be an intentionally constructed ritual pond or two features superimposed.

PRN 4872 Forden Gaer fort, vicus NGR: SO20759861

Type 1: Vicus Period 1: Roman

Roman occupation site (vicus) c150m south of fort (PRN 162). Stone footings with clay floor with pit 1m diameter by 1.5m deep recorded by excavation of 1975 (Connell 1975). 1987 Site I excavation examined a stretch of metalled road and adjacent features. Suggested undeveloped vicus, expanding in later half of 2nd century and reducing again after early 3rd century (Blockley 1990).

PRN 5036 Forden Gaer, ring ditch NGR: SO21299941

Type 1: Enclosure ? Period 1: Roman ?

Circular ditch some 30m diameter. Abutting (or truncated by) SW linear of enclosure PRN 5035. Possibly related to PRN 5035 though possibly disturbed ring ditch.

Appendix 1

Gazetteer of sites

PRN 5037 Forden Gaer, Thornbury cropmark I NGR: SO21269931
Type 1: Field system ? Period 1: Roman ?
Possible ditch running for 88m and then turning at right angles and running for a further 81m.

PRN 5038 Forden Gaer, Thornbury marching camp NGR: SO21209912
Type 1: Marching camp ? Period 1: Roman
Possible large enclosure or Roman marching camp c94m by 147m.

PRN 5040 Forden Gaer, cropmark NGR: SO20969882
Type 1: Marching camp ? Period 1: Roman
Apparent ditch turning through right angles (CPAT AP 1980) possibly resulting from drainage (as only appears on CPAT AP 1980) though could well be part of a marching camp. Situated in area of former marsh (OS 1964).

PRN 17617 Forden Gaer, Roman fort coin finds NGR: SO20809890
Type 1: Findspot Period 1: Roman
Valentinianic-Theodosian coins found in fort (Davies, J L 1983, 90).

PRN 163 Forden Gaer, Thornbury enclosure III NGR: SO2140099328
Type 1: Defended enclosure ? Period 1: Roman ?
Double ditched rectangular enclosure 82m by 70m with rounded corners and poss entrances to NE and SW. Excavations in 1987 revealed two substantial ditches, outer 3.8m wide x 2m deep and the inner 3.8m wide and 2.4m deep (Blockley 1990). Possible temenos.

PRN 164 Gaer Farm enclosure complex (multiple) NGR: SO2071999175
Type 1: Multiple site Period 1: Roman ?
Enclosure complex comprising three basic elements (PRNs 6322-6324) plus connecting linears. Situated c180m north-west of Forden Gaer (PRN 162). No surface indications (OS 1982). See also PRN 4086.

PRN 173 Forden Gaer, enclosure IV NGR: SO2115199226
Type 1: Enclosure Period 1: Roman ?
Enclosure 20m square with possible entrance in NW corner. Shape and proximity of PRN 162 suggest a Roman origin.

PRN 2502 Gaer Mill enclosure NGR: SJ2116600238
Type 1: Enclosure Period 1: Roman ?
Possible sub-rectangular enclosure with rounded corners, presumed W side not visible, ditches c 3m wide, enclosure c43m by 50m. On terrace above Camlad close to its confluence with Severn. No surface traces and some of enclosure may have been lost through erosion.

Appendix 1

Gazetteer of sites

PRN 4256 Forden Gaer, Thornbury enclosure complex NGR: SO2021499765
Type 1: Enclosure complex Period 1: Roman ?

Multi-ditched 'enclosure' and numerous smaller ones offset from, or possibly underlying, NE-SW linear ditch. Complex cropmarks to N may represent field system. Whole may in part be natural feature. No surface indications.

PRN 4257 Rhydwhyman cropmark NGR: SO2110098600
Type 1: Enclosure ? Period 1: Iron Age ?

Sub-rectangular enclosure c42m by 33m with an entrance on the SE side. much of the Eastern side of the enclosure is not visible.

PRN 5035 Forden Gaer, Thornbury enclosure I NGR: SO2132399437
Type 1: Defended enclosure ? Period 1: Iron Age ?

Flattened oval single ditched enclosure some 70m NE-SW by 50m wide with entrance in SW. Several Possible pits are situated in N half of enclosure.

PRN 6322 Forden Gaer, enclosure I NGR: SO2077099194
Type 1: Enclosure Period 1: Roman ?

Sub-rectangular enclosure with one ditch, c80m NW-SE by 50m wide. Entrances on NE and SW sides.

PRN 6323 Forden Gaer, enclosure II NGR: SO2067299206
Type 1: Enclosure Period 1: Roman ?

Sub-triangular shaped enclosure c 30m by 29m with an entrance on the east side.

PRN 6324 Forden Gaer, enclosure III NGR: SO2069399151
Type 1: Enclosure Period 1: Roman ?

Single ditched square enclosure c 21m across.

PRN 33071 Forden Gaer, Thornbury Square Barrow NGR: SO20379943
Type 1: Square barrow ? Period 1: Dark Age ?

Square ditched enclosure or square barrow, 12m across with central pit and gaps on NNE and SSW sides.

PRN 32819 Gaer Mill cropmark NGR: SJ2119000134
Type 1: Field system Period 1: Unknown

Parrallel linear cropmarks c260m long. Possible remains of field system or routeway.

PRN 32836 Forden Gaer, Thornbury, field boundary NGR: SO2032299377
Type 1: Field system ? Period 1: Unknown

Meandering feature running N to SE for some 230m with a gap at its centre, a poss field boundary?

Appendix 1

Gazetteer of sites

PRN 32838 Forden Gaer, Thornbury linear cropmarks NGR: SO2025799901

Type 1: Field system Period 1: Roman

Complex of linear cropmarks adjoining enclosure PRN 4256. Possibly associated field system.

PRN 32856 Forden Gaer, Thornbury enclosure IV NGR: SO2071399126

Type 1: Enclosure Period 1: Roman

Irregular enclosure apparently attached to enclosure PRN 6324. 33m E-W, 37m N-S. Gap on S side.

PRN 32857 Forden Gaer fort, road NGR: SO2115999181

Type 1: Road Period 1: Roman

Road running from NE to SW towards N part of Forden Gaer visible as a parchmark with flanking ditches visible in places. It appears to underlie the major phase of the fort.

PRN 81463 Forden Gaer lithic finds NGR: SO20809890

Type 1: Find Period 1: Neolithic

A flint leaf-shaped arrowhead from topsoil at Forden Gaer excavations 1929, also flint petit tranchet derivative arrowhead, flint transverse arrowhead and flint thumb scraper (see Figgis 1999, 28)

PRN 5246 Forden Gaer, Thornbury Ring Ditch II NGR: SO21239952

Type 1: Ring ditch Period 1: Bronze Age

Ring ditch some 25m dia. Field is ploughed flat and no sign of an earthwork.

PRN 5630 Forden Gaer, Thornbury Ring Ditch III NGR: SO21299937

Type 1: Ring ditch Period 1: Bronze Age

Faint semi-circular cropmark some 30m dia. No sign of an earthwork.

PRN 7033 Rhydwhyman Ring Ditch NGR: SO21059855

Type 1: Ring ditch Period 1: Bronze Age

Cropmarks of possible ring ditch some 15 metres across.

PRN 5039 Forden Gaer, Thornbury Ring Ditch I NGR: SO21079902

Type 1: Ring ditch Period 1: Bronze Age

Ring ditch some 20m diameter. Slightly irregular with a possible gap on N.

PRN 166 Forden Gaer fort, stone I NGR: SO20669886

Type 1: Standing stone ? Period 1: Bronze Age

Conglomerate stone known as the Hoare Stone. Detached flake on N side, still set. Overall dimensions 2.0m E/W by 1.0m by 2.0m high. Appearance of S side suggests that the stone may be resting on the ground rather than set into it to any great extent.

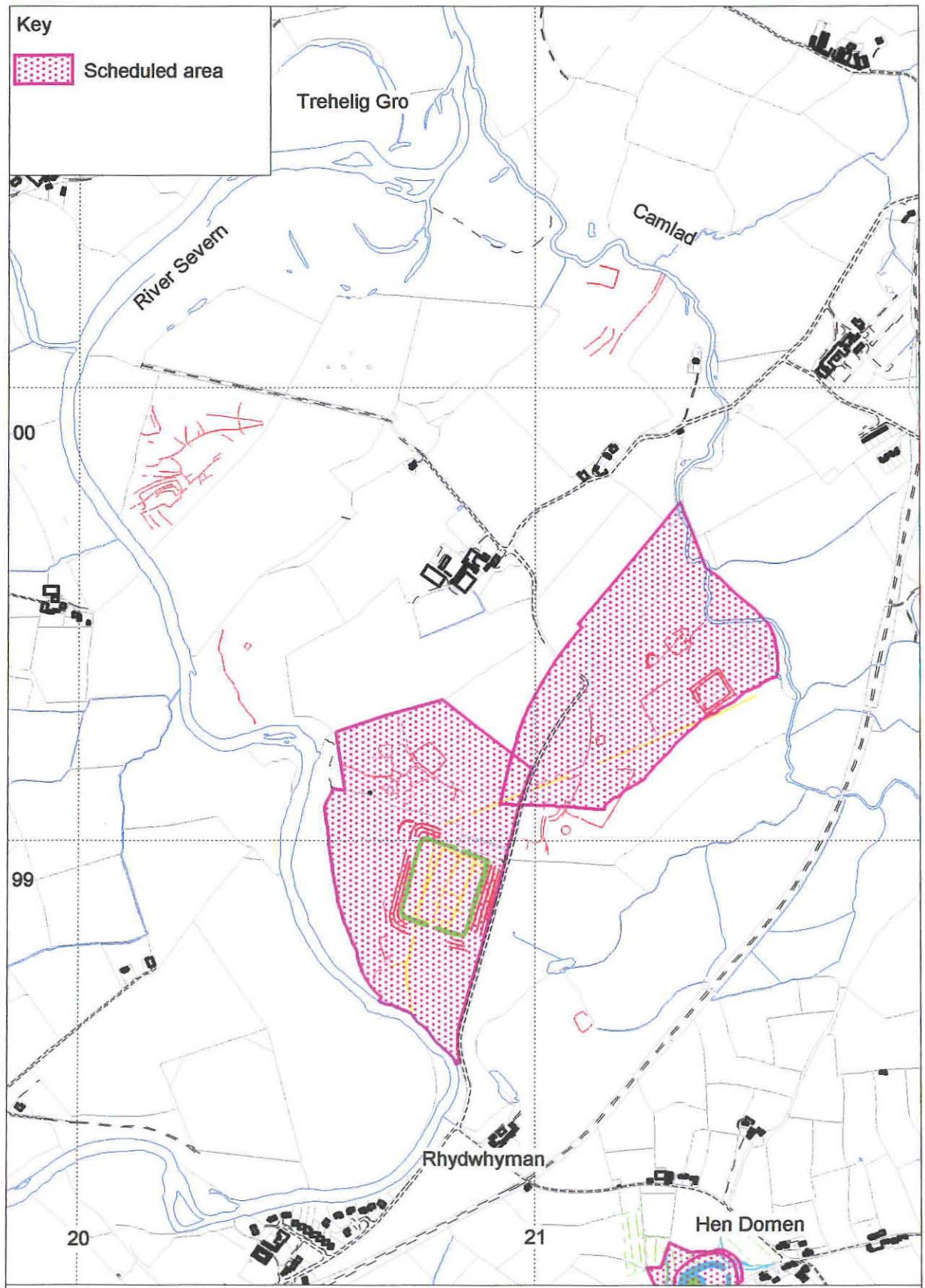

Fig. 1 Forden Gaer environs, showing Scheduled areas and cropmarks

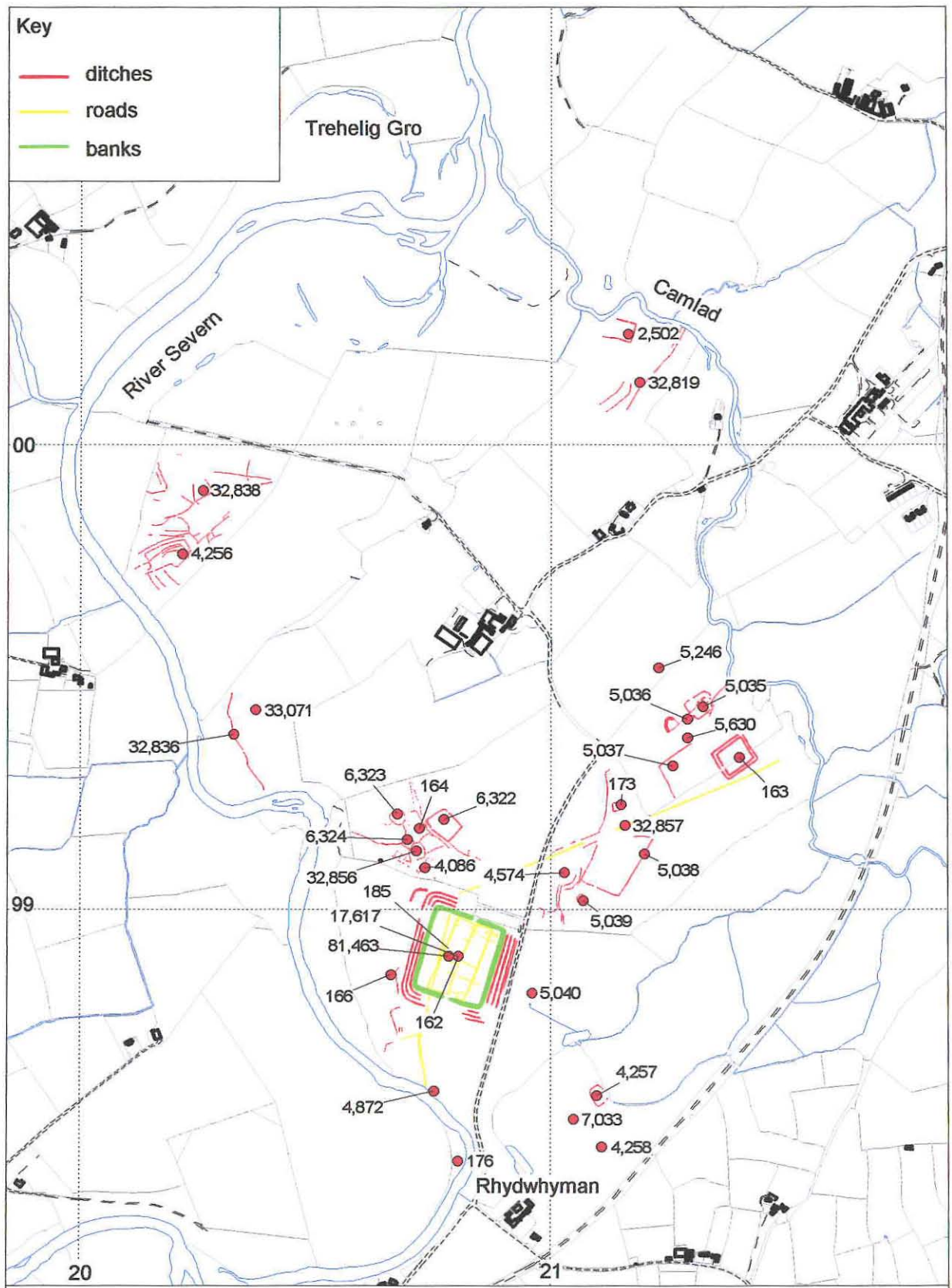

Fig. 2 Forden Gaer environs, showing cropmarks plotted by CPAT and PRNs

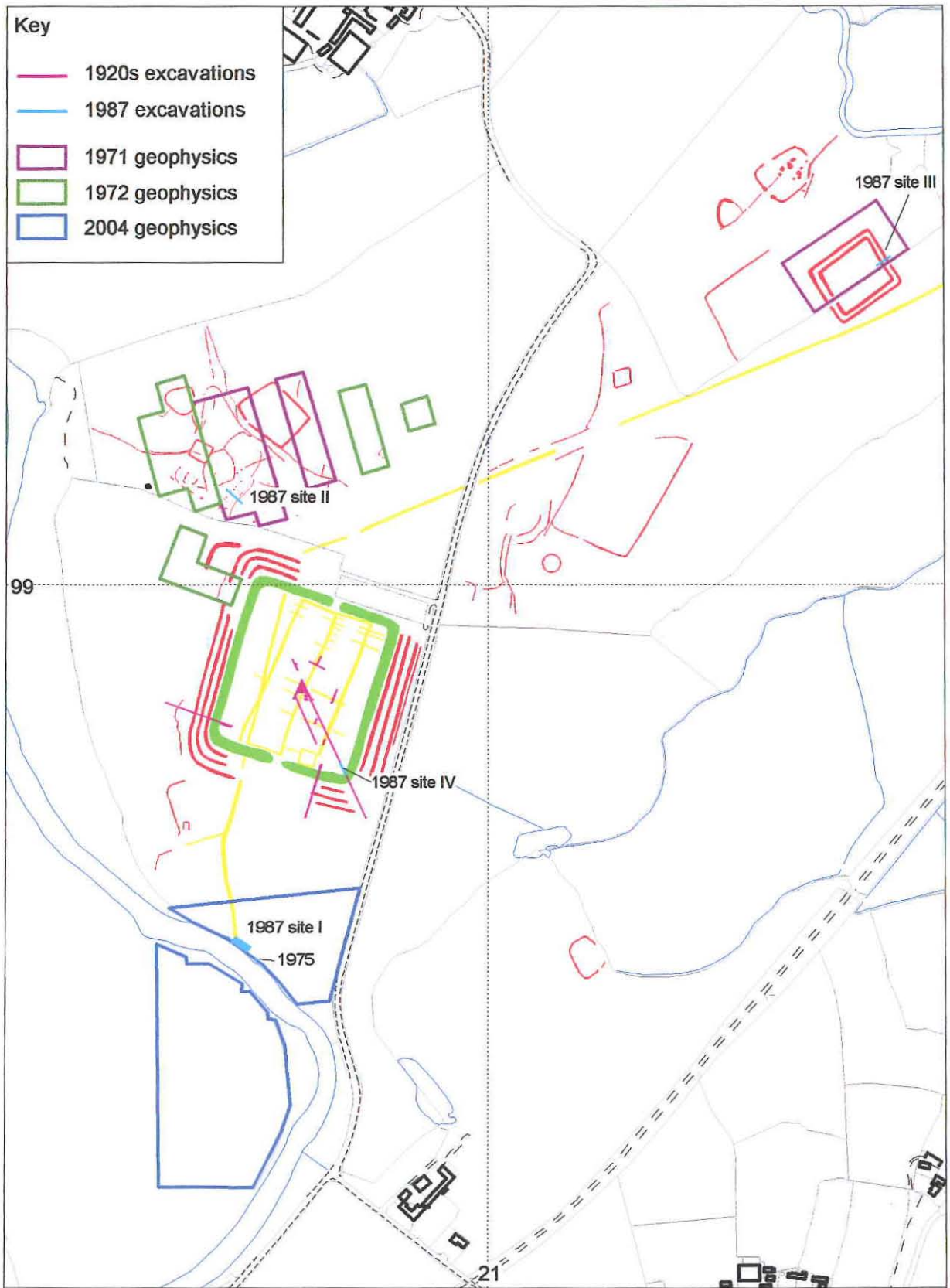

Fig. 3 Forden Gaer environs, showing excavations and geophysical surveys

Fig. 4 1987 contour survey of Forden Gaer, contours at 0.2m intervals

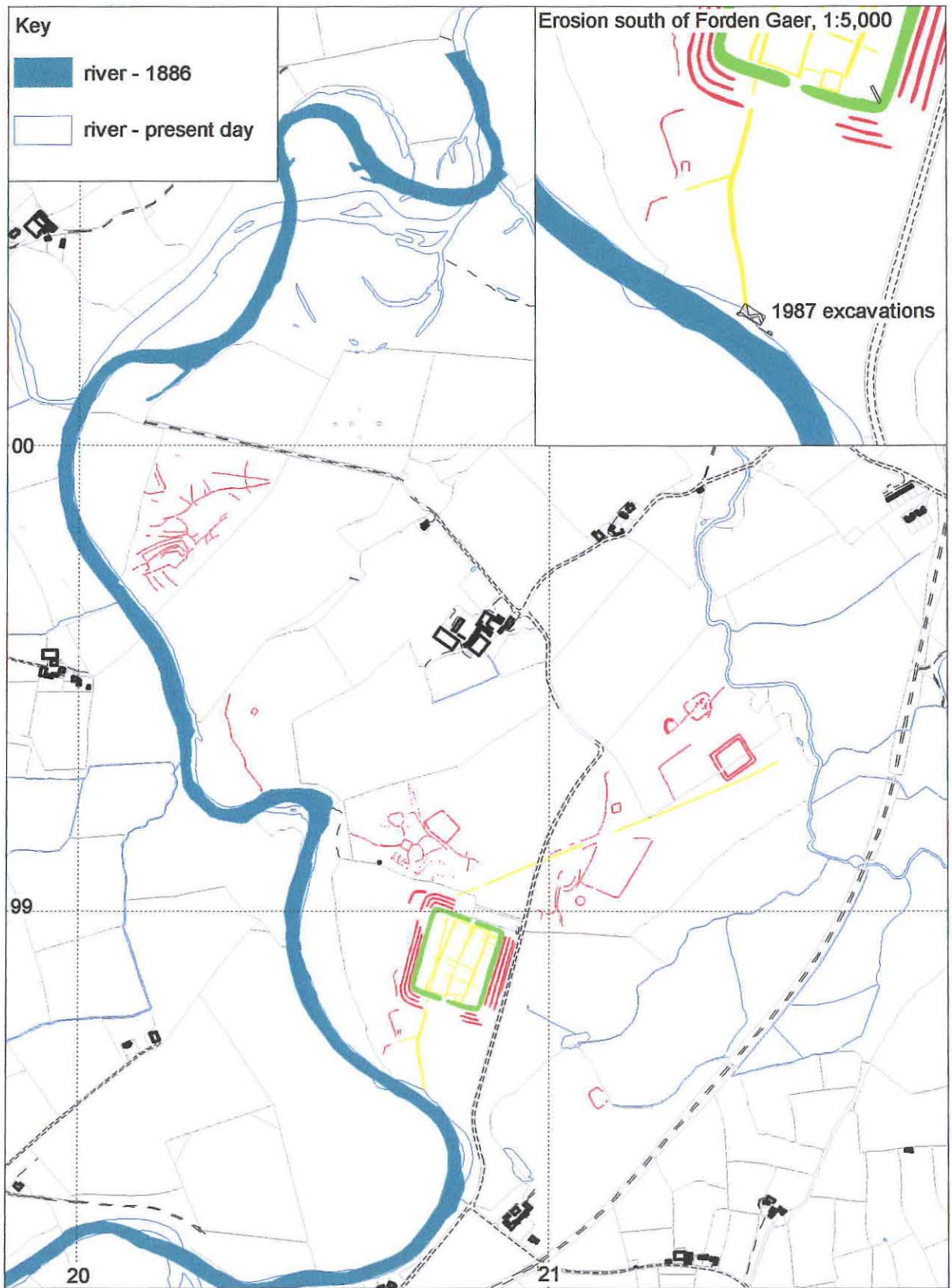

Fig. 5 River movement from 1886 to the present day

Fig. 6 Aerial view of the 1987 excavations (Site I). Photo CPAT 87-c-258.

Fig. 7 1987 excavations (Site I), showing Roman road and river erosion. Photo CPAT cs87-20-28.

Fig. 8 River erosion south of the fort. The Roman road can be identified in the exposed section of the river bank in the foreground. Photo CPAT 1836.43

Fig. 9 River erosion south of the fort. Actively eroding section of the river bank north-west of the Roman road. Photo CPAT 1836.53

Fig. 10 Aerial view of Forden Gaer in September 2003 showing crop and soil marks. The northern part of the fort has been ploughed, while the southern area is under maize. Photo CPAT 03-c-695.

Fig. 11 Aerial view of Forden Gaer in September 2003 showing crop and soil marks. The northern part of the fort has been ploughed, while the southern area is under maize. Photo CPAT 03-c-700.

Fig. 12 Surface disturbance from stock feeders within the fort, January 2005. Photo CPAT 1836. 50.

Fig. 13 Surface disturbance from vehicles and stock feeders adjacent to the Hoare Stone, January 2005. Photo CPAT 1836. 46.