FORESTERS' FOREST: UNEARTHING OUR HERITAGE DEVELOPMENT STAGE FOREST OF DEAN GLOUCESTERSHIRE

FORESTERS' FOREST

heritage lottery fund
LOTTERY FUNDED

worcestershire county council

Foresters' Forest: Unearthing our Heritage Development Stage Forest of Dean Gloucestershire

Worcestershire Archaeology
Archive and Archaeology Service
The Hive, Sawmill Walk,
The Butts, Worcester
WR1 3PD

Status:	Version 2 (final)
Date:	30 August 2016
Authors:	Robin Jackson, Andrew Walsh and Jesse Wheeler
Contributors:	Rob Hedge and Liz Pearson
Illustrator:	Carolyn Hunt Laura Templeton and Andrew Walsh
Client:	Forestry Commission
Project reference:	P4588
Report reference:	2369
Oasis id	fieldsec1-260399

Cover photo: © Clive Osborne

Contents

Foresters' Forest: Unearthing our Heritage. Development stage

Forest of Dean, Gloucestershire

Robin Jackson, Andrew Walsh and Jesse Wheeler

With contributions by Rob Hedge and Elizabeth Pearson

Illustrations by Carolyn Hunt, Laura Templeton and Andrew Walsh

Part 1: Project Summary

Background

This Part 1 summary is intended as a brief and accessible outline of the work undertaken on the 'Unearthing our Heritage' element of the *Foresters' Forest* project. The more detailed technical report, with extended background context, finds assessment and structural analysis, is to be found below in Part 2 of this document.

'Unearthing our Heritage' is one of a large group of projects, the development phase of which have been being undertaken as part of the development stage of the *Foresters' Forest*, a Heritage Lottery Funded (HLF) Landscape Partnership Programme for the Forest of Dean. These projects are being developed to create a Stage 2 application to the HLF which is being co-ordinated and managed by the Forestry Commission and it is intended that a Stage Two application will be submitted in November 2016. The Forestry Commission is the lead partner within the Foresters' Forest but the total partnership numbers about 50 projects led by different organisations.

'Unearthing our Heritage' has been led by a team of archaeologists from Worcestershire County Council's Archive and Archaeology Service working with a team of volunteers recruited from the local community. It has encompassed three main components, namely Lidar Validation Survey, Built Heritage and Further Investigation (Yorkley and Tomlin Field School). The completion of these tasks aims to expand our knowledge of what archaeological and other historic features exist within the Forest so that we can build up a greater level of understanding about the heritage of this landscape. Through identifying and mapping what sites, features and structures are present, and recording the conditions these will, in turn, provide basic tools for monitoring site condition and supporting effective long-term management of these heritage assets. All three elements have not only provided training and high levels of involvement for our volunteers but have also included an outreach programme to engage, enthuse and inform the wider community about their heritage.

Lidar Validation Survey

In comparison with the rest of Gloucestershire (and much of England) the historic environment of the Forest of Dean has, until recently, been little-researched and poorly understood, in part at least due to tree cover over the central Forest which make traditional forms of archaeological survey difficult. In the last 10 years Gloucestershire County Council Archaeology Service (GCCAS) have undertaken a survey project (the Forest of Dean Archaeological Survey) to explore the local historic environment, to record archaeological sites and structures, and to improve the management of the archaeological resource. Of particular importance has been the use of a recently developed survey technique known as lidar. This innovative approach allows large areas of the landscape to be rapidly surveyed for surviving earthwork remains and this includes areas masked by trees. The Lidar Validation Survey has built on the results of the Forest of Dean Archaeological Survey, continuing their work and providing a springboard for undertaking further survey, for improving the management of the historic environment in the Forest, and for engaging the community in understanding and looking after this important landscape. The survey has focused on four pilot areas: Birchill, Blackpool Brook Woods, Great Bourts Inclosure and Welshbury Hillfort.

During the Development Stage, the lidar validation survey part of the programme has comprised design of the survey methodology, the undertaking of training sessions for volunteers, provision of office and field based support/feedback and above all the undertaking of the lidar validation survey by the trained volunteers across the four pilot areas. Sessions were also held at the Gloucestershire Archives to support the volunteers in developing research skills, in order to identify historic maps and other documents which may have been relevant to the features they were identifying in areas they were surveying.

Forty two volunteers were trained and a total of 227 feature records submitted across the four pilot areas, with a total of volunteer involvement of 623 hours. The involvement of the volunteer teams has been positive, as has much of the feedback received. Some volunteers identified additional features from historic OS maps and included them within their validation survey, cross referencing the maps to validate the lidar survey. This helped ensure that features were included that were not visible on the lidar survey thus further enhancing the record. The most numerous of features were charcoal platforms, with stone and mineral extraction features such as quarries and mines also being commonplace reflecting the historic industries of the Forest of Dean. Other landscape features recorded included holloways and trackways, banks, mounds, and built structures such as a lime kiln, a wall and watercourse management features. Many of these sites and groups of sites provide potential opportunities for further investigation and research by either professional or non-professional bodies.

Feedback from participants in the lidar validation provides a clear indication that the survey was a popular element of the Foresters Forest project as a whole and that those who did participate are keen to continue their work within the wider extents of the Forest.

Built Heritage

The Forest of Dean contains numerous built heritage features, many of which are valued by members of the community for any number of reasons. The relative importance of those specific features is often unknown and unrecorded, and the people that do value those features may have only limited knowledge of the origins, rationale or story of those features. Built Heritage encouraged members of the public to go out and make a photographic record of the features they know about and value. The aim was to begin to form the basis of a more comprehensive record of the built heritage in the Forest, a record that could serve as a foundation to both the conservation and development of those features and as a basis for subsequent celebrating and telling the story of the Forest.

The Development Stage involved the design and setting up of an online form using Google Forms and Drive to receive photo submissions and gather information of aspects of the photographed sites such as the name of the site and its location, a grid reference and an explanation of why the heritage feature was important to the volunteer submitting the image(s). They were also asked to record anything they knew about the site, what its function was and why they thought it should receive some HLF funds for conservation works. Email or post were also presented as alternative methods of submission.

Submissions came from fifteen different individuals, many of whom made multiple submissions, however in the context of the overall project the number of people involved was low. The project ran for a relatively brief period during winter 2016 and 30 sites were identified with over 100 pictures submitted. Some sites were submitted by more than one person and these were larger and more complex structures than many of the other submissions and their visibility in the landscape or iconic status probably accounted for the multiple submissions. Sites submitted have been classified broadly into industrial, mining and transport categories. Status and condition seemed to be the largest motivator in terms of submission but personal resonance also featured.

The condition of the sites was assessed post-submission, with reference to information provided by the submitters, and assessment of the photographic record provided. This was a rapid survey and should not be taken as a definitive assessment. As a result of this eleven sites were listed as being in good condition, six as poor and eight requiring definite further assessment. Unsurprisingly,

vegetation clearance was often recommended by the volunteers and is seen as intrinsic to maintaining the condition of the structures. Likewise, basic stabilisation of stonework seems to be highly recommended in many structures. Interestingly, no one promotes a 'red velvet rope' approach in preserving these structures but rather a progressive management strategy. Suggestions were made for conversions to historic walks or historic environmental features, and accessibility and visibility for the public to enjoy these sites appear to be key factors.

Evaluation of this part of the 'Unearthing our Heritage' programme, suggests that greater visibility of the project and promotion to a wider demographic would be beneficial since it is ideally placed to be highly accessible to a wide range of people with varied abilities and levels of participation, and can easily act as a springboard for volunteers joining other parts of the project, and gaining knowledge and a new found interest in their heritage. Expanding the platforms of submission of photographs would be one method in which the public can get fully involved and take some ownership of their record. Submission directly to a website or forum where people can view each other's submissions, and add to them with their own photos, research or oral history would make the project much more accessible and would perhaps encourage continued participation.

Further Investigation: The Yorkley and Tomlin Field School

The sites identified to provide the focus for the Field School were a sub-rectangular enclosure located on the edge of the settlement of Yorkley Slade, and the nearby remains of the deserted settlement of Tomlin. The sub-rectangular enclosure at Yorkley shows clearly on lidar mapping and is easily visible as an earthwork bank. It is one of four similar sites identified by lidar including one at Ruardean (SO6316/07) which was investigated in 2011. That investigation demonstrated the Ruardean enclosure to be Roman in date and it was suggested that this and the other sites may represent early Roman fortlets constructed to guard, monitor and oversee iron ore production during the early years of the Roman conquest.

Approximately 500m west of the enclosure lies the deserted settlement of Tomlin. This settlement was not recorded on the Gloucestershire HER but is documented at least as far back as the 18th century. It is present on 19th century Ordnance Survey maps but was believed to be abandoned by the 1920s.

During the course of the Field School, participants were given the opportunity to first learn and then, under supervision, put into practice varying aspects of field archaeology, including excavation, planning, photography, levelling, finds processing, surveying and context recording. The finished field records from the site were intended to be of sufficient quality that a full report could be completed to a professional standard and so used to inform future research.

One fifteen metre long trench was excavated across the bank and ditch of the enclosure at Yorkley and five small test pits where excavated inside it. Pottery recovered from the ditch, a pit or shaft furnace (104) and various soil deposits in the test pits indicate that the enclosure was in use around the 12th to early 14th centuries AD. The quantity of iron smelting slag and furnace material in association with the medieval pottery and possible shaft furnace suggest that metal working was taking place. However the ditch and other test pits only contained relatively small quantities of slag and the main function of the enclosure is still not clear. Except for the possible furnace no evidence of internal structures was identified within the enclosure.

In the context of understanding the function of the subrectangular enclosures the results of the excavation at Yorkley Slade are important. Although the pottery assemblage was much smaller in comparison to the Ruardean example, the finds clearly indicate a medieval origin for the Yorkley enclosure, and despite the physical similarities between the two enclosures they cannot be related. The work also raises further questions about the other two similar enclosures which have not been excavated. Are they Roman and related to the Ruardean enclosure, medieval and related to the Yorkley example, or are they also of another date?

The survey work at Tomlin established that the remains of three buildings as well as various tracks enclosures, and other structures survive, and most of the features visible on the ground can be

related to features recorded on late 19th and early 20th century Ordnance Survey mapping. Documentary research established that the last residents of Tomlin were Hartley James (born 1829, died 1913), a wood cutter who lived at Tomlin for most of his life, his wife Elizabeth (born c.1835) and their niece Hilda Morris, a dressmaker (born c.1892).

Conclusions

Through training and working with a team of volunteers recruited from the local community the development phase of *'Unearthing our Heritage*' has generated a large quantity of baseline information on numerous sites across the Forest of Dean.

A lidar validation survey has examined 227 archaeological sites within four pilot study areas across the Forest and verified the presence of a large number of archaeological sites. Background research has both supported understanding of these sites and facilitated the identification of many new ones. The condition and character of these sites has also been recorded and the information added to a geographic information system (GIS). This new understanding of the rich and diverse character of archaeological sites surviving in the Forest will provide a key tool in developing appropriate management for them and maintaining measures to protect them. The baseline data and mapping will also provide a valuable tool for researchers.

Alongside the validation survey, an archaeological field school run for the volunteers has enabled more detailed investigation of two selected sites, at Yorkley and at nearby Tomlin. At Yorkley, trench excavation and test pits were targeted on an enclosure thought likely to be of Roman date and possibly military in origin but in the event revealed to be a medieval ironworking site. Although it is documented that ironworking was a significant industry in the medieval forest, this is the first confirmed example of such a site and represents a significant find. Such discoveries demonstrate very clearly both the difficulties and opportunities that investigation of archaeological sites within the Forest presents, not only for training volunteers in archaeological techniques but also in advancing research and understanding. At Tomlin, our field school focussed on surveying the ruins of a deserted settlement lying within the forest. This provided an excellent example of the potential of more recent heritage sites to provide links and resonances for members of the local community, some of whom had family ties to the last recorded residents of the settlement some 100 years ago and others of whom had played in the ruins in their youth. Further evidence for the association and links to the past held by members of the local communities was provided by the third project element which encouraged people to go out into the forest and photograph built heritage sites that held particular importance or resonance for them. The aim of this is to help identify the full range of sites present within the forest and to build a photographic record of the sites as they currently survive.

Alongside the validation and built heritage surveys, and the training school, school visits, open days, lectures, events and use of local and social media outlets enabled engagement of the much wider community in our project, helping foster a better understanding of the rich heritage of the Dean and along with numerous other projects undertaken under the umbrella of the *Foresters' Forest* helping to generate a greater sense of value, place and belonging.

It is evident from the large number of volunteers recruited, the hours contributed and the interest shown that '*Unearthing our Heritage'* has successfully tapped into a great reservoir of enthusiasm for their heritage within the local community as well as visitors to the Forest. In addition, important archaeological information has been collected which will support the development of effectively targeted management strategies to secure the future preservation of numerous and diverse archaeological and historic sites present within the Forest.

The resources developed, volunteers recruited, training provided and understanding gained is a valuable resource which in the event that the delivery stage application for the *Foresters' Forest* is successful will provide a firm foundation for the delivery of *'Unearthing our Heritage'* during the main project phase. As a result it is strongly recommended that the Validation Survey is extended to cover the remainder of the Forest, that further Training Schools are held and that a more focussed approach to Built Heritage are provided within the Delivery Phase.

Part 2: Detailed Report

1 Introduction

'*Unearthing our Heritage*' is one of a group of projects which have been being completed as part of the Development Phase of the *Foresters' Forest*, a Heritage Lottery Fund (HLF) Landscape Partnership Programme for the Forest of Dean (Figure 1). The Forestry Commission is the lead partner within the *Foresters' Forest* but the total partnership numbers about 50 projects led by different organisations.

The Development Phase of the Foresters' Forest started on 12th Jan 2015 and will run until 5th Nov 2016 when the Stage Two application will be submitted. A decision to award or not will be made by HLF in March 2017 and, if successful, the Foresters' Forest will then move into a 5 year delivery phase running from April/May 2017 to 2022.

Following submission of a successful tender for the work in June 2015, *'Unearthing our Heritage'* has been co-ordinated by a team of archaeologists from Worcestershire County Council's Archive and Archaeology Service working alongside volunteers recruited from the local community. The Development Phase of the project has now been completed and this report presents the results of work completed to date and will be submitted as part of the project archive along with other outputs including a project GIS (Geographic Information System). The report will also be provided as an appendix to accompany a Landscape Conservation Action Plan which is a key document to be submitted for the Stage Two application as this will detail all the project works to be completed in the delivery phase.

The need for this project was identified as a result of the fact that in comparison with the rest of Gloucestershire (and much of England) the historic environment of the Forest of Dean has, until recently, been little-researched and poorly understood. This lack of understanding of the full extent and potential of what survives in the Forest has in turn hindered the development of effective management of the rich and diverse heritage that is present. The lack of understanding is in part due to tree cover over the central Forest which makes traditional forms of archaeological survey difficult. In the last 10 years Gloucestershire County Council Archaeology Service (GCCAS) have begun the process of rectifying this situation through a survey project (the Forest of Dean Archaeological Survey) which has explored local historic environment, recorded archaeological sites and structures, and improved the management of the archaeological resource for areas they have been able to cover. The Forest of Dean Archaeological Survey has now been completed and unfortunately GCCAS are not in a position to continue the survey, although much still remains to be undertaken.

The *Foresters' Forest* has provided an opportunity to continue this important work through *'Unearthing our Heritage'* which has built on the results of the GCCAS Forest of Dean Archaeological Survey. The Development Phase work reported here has continued their work and will provide a springboard for undertaking further survey, for improving the management of the historic environment in the Forest, and for engaging the community in understanding and looking after this important landscape.

'*Unearthing our Heritage*' has encompassed three main components, namely Lidar Validation Survey (covering four pilot areas: Birchill, Blackpool Brook Woods, Great Bourts Inclosure and Welshbury Hillfort), Built Heritage and Further Investigation (Yorkley and Tomlin Field School). The completion of these aims to expand our knowledge of what archaeological and other historic features exist within the Forest so that we can build up a greater level of understanding about the heritage of this landscape. Through identifying and mapping what sites, features and structures are present, and recording the conditions these will, in turn, provide basic tools for monitoring site condition and supporting effective long-term management of these heritage assets.

All three elements have not only provided training and high levels of involvement for our volunteers but have also included an outreach programme to engage, enthuse and inform the wider community about their heritage and through working with other project stakeholders building links with other projects within the *Foresters' Forest* programme.

2 The Lidar Validation Survey

2.1 Background

In comparison with the rest of Gloucestershire (and indeed much of the rest of the country), the archaeological heritage of the Forest of Dean has until recent years been little researched and only very poorly understood. The relatively low intensity of modern development and the limited impact of agriculture (especially arable farming) in this heavily wooded landscape have left many traces of its past undisturbed and well-preserved, yet also long-forgotten and largely undiscovered.

The lack of recognition and understanding of the diverse and rich archaeology of the Forest is also in a large part a reflection of the dense tree cover which characterises much of the area, especially in the central Forest. This tree cover has restricted the effectiveness and application of traditional archaeological prospection methods and therefore has always hindered discovery and identification of sites, whilst at the same time also helping in many ways to preserve them. Without discovery and recognition of what is out there and what it is, there can be no understanding and without understanding there can be no effective management and protection of that which survives.

Fortunately, in recent years the development of a new and innovative prospection method, lidar survey, has transformed our knowledge of the sheer quantity of archaeological remains in the Forest. Through high resolution mapping of the ground surface beneath the trees this has revealed over 1700 earthwork sites many of which were previously unmapped and unknown, hidden beneath and amongst the trees. Airborne lidar (or light detection and ranging to give it its full title) uses a laser scanner attached to a plane which is flown over the survey area and measures distance by illuminating the ground with a laser light thereby creating a 3D point cloud model of the landscape. This is currently the most detailed and accurate method of creating digital topographical models, replacing photogrammetry. One major advantage in comparison with photogrammetry and the one that makes this approach so important for the Forest of Dean, is the ability to filter out vegetation from the point cloud model to create high resolution digital surface models where areas covered by vegetation can be visualised, including cultural heritage sites surviving as low earthworks (humps and bumps in the ground).

Lidar mapping has therefore been invaluable in identifying new earthwork sites across the Forest, however, lidar only provides dots on maps not real understanding. In addition 'false' sites can be created and others may be missed due to very dense tree cover or other factors. As a result these dots on the map need to be confirmed (verified) through visits to the mapped locations and then to be transformed by further survey, investigation and research into sites whose character and date is understood wherever possible, whose condition and level of survival is recorded, and whose archaeological significance and role in the development of the Forest landscape is recognised. Only once such baseline understanding is reached and their importance recognised can the stories of these sites be properly told and their survival ensured for future generations through long-term monitoring of their condition and the design and implementation of well-informed protection and management strategies.

The great potential of completing such further investigation of these lidar sites identified within the Forest was first demonstrated by pilot work undertaken by Gloucestershire County Council Archaeology Service (GCCAS) through the Forest of Dean Archaeological Survey, a 10 year scheme that has combined traditional survey techniques with this more recent innovation (Hoyle 2003; 2008a; 2008b; 2011; 2013). This work has shown that these earthworks date from not only the more recent past but back into the more dim and distant past, spanning literally thousands of years of human activity and exploitation of the area; thus covering everything from Bronze Age

stone circles and Roman fortlets, to post-medieval industrial activity remains, all of which provide evocative imprints of past communities and all of which have helped shape the Forest landscape into what it is today.

'Unearthing our Heritage´ has provided a significant means to further progress this invaluable work and through The Lidar Validation Survey has built on the results of the Forest of Dean Archaeological Survey, providing a springboard for undertaking further survey work, for improving the management of the historic environment in the Forest, and for engaging the community further in understanding and looking after this important landscape.

2.2 Aims

Survey: Only a small proportion the 1700 potential archaeological sites identified through the lidar survey were explored by the Forest of Dean Archaeological Survey; however, this information has provided an excellent basis for the development of the *Foresters' Forest* programme of further survey undertaken in partnership within the local community. The aim of the survey was to validate all lidar features in four defined pilot areas and identify other potential archaeological and built heritage features.

Management: The complex historic environment of the Forest of Dean needs to be actively managed in order to ensure its survival. In particular where open habitats are to be made or managed there is an opportunity to encompass both ecological and archaeological management objectives. The project therefore aims to use the lidar data and field validation survey to establish baseline data on the number, location, condition and where possible character of these 1700 sites and any others identified as result of field survey.

Community Engagement: Engaging the local community in discovering and recording the archaeological landscape provides excellent training and learning opportunities. Reaching those parts of the community that may never have engaged actively with their heritage before was of particular importance. In addition, partnerships with established local interest groups and societies enabled their expertise to contribute to the project. Greater awareness of the local heritage will contribute to its future protection and management

2.3 Methods

The lidar validation survey focused on four pilot areas: Birchill, Blackpool Brook Woods, Great Bourts Inclosure and Welshbury Hillfort area (Figure 2). The Welshbury pilot area had also been planned to include Chestnuts Wood although this area was not surveyed during the development stage due to time constraints. The four pilot areas were identified on the basis of access, forestry works and proximity to pre-existing community groups rather than for archaeological reasons, although all four lay within the area of lidar coverage.

The survey methodology was based upon the methodologies employed successfully by two previous surveys undertaken in forested areas working alongside local volunteers, *Grow with Wyre* (GWW) and *South East Woodland Archaeology Forum* (SEWAF), the GWW survey being one that WAAS had led thus enabling their experience of this project to be drawn upon in developing the *Foresters' Forest*.

These previous projects used 1km² survey blocks based on the Ordnance Survey National Grid but due to the rather irregular shaped areas of the *Foresters' Forest* pilot areas, these were divided into 250m (Great Bourts) or 500m (Birchill, Blackpool Brook and Welshbury) blocks based on the OS grid. A survey handbook and pro-forma recording sheets were created based on the SEWAF model (Appendix 1).

Four training sessions were held for prospective volunteers who were identified and recruited by the Forest Voluntary Action Forum (FVAF) following local press articles and social media outputs calling for volunteer assistance on the project. Training sessions were based at Lydbrook Memorial Hall, Dean Heritage Centre and the Forestry Commission offices at Coleford (two sessions) and two were run at weekends and two on weekdays. This was to enable the maximum number of

volunteers to participate. Each session was run over the course of one day and was divided into three main parts;

1. introduction and background to the project,
2. field visit to a pilot area and training on recording features (Plate 1 and 2),
3. summary and questions.

All volunteers were supplied with a copy of the survey handbook which provided guidance on how to locate, verify and further record the earthwork sites identified on the lidar survey as well as others encountered during the fieldwork. Records covered location and extent of each site as well as assessment of their condition and likely character. Health and safety guidance was also provided focussing especially on the risks of hidden mine shafts, the difficult terrain involved and the potential dangers posed by wild boar. Volunteers were also encouraged wherever possible to work in groups of two or more.

Volunteers nominated their preferred pilot area(s) and were grouped into teams on the basis of this preference. Once agreed the teams were largely self-organising, typically sub-dividing into smaller groups which undertook the survey work as and when was suitable for each volunteer/group. Pro-forma day record forms were provided for groups to fill out on each survey visit and four sets of survey equipment were placed at easily accessible locations throughout the Forest (two at the Dean Heritage Centre, one at Lydbrook Community Centre and one at the Forestry Commission offices at the Bank House in Coleford).

An office based support/feedback session was delivered soon after the final training session to establish how volunteers were finding the survey and provide initial support. Two on-site support sessions were also held to provide additional support and feedback as required. The on-site sessions covered four groups of volunteers, although no volunteers from Blackpool Brook or Great Bourts were able to attend on the days of the support visits. Co-ordination of volunteers and supply of information and mapping primarily used emails although maps were also posted out to groups with volunteers also being provided with timesheets to return to WAAS recording time spent on the project.

Two additional training sessions were also held at Gloucestershire Archives. These were intended to allow volunteers to develop research skills, in order to identify historic maps and other documents which may have been relevant to the features they were identifying in areas they were surveying. It was also anticipated this would expand the appeal of the project to those who were not physically able to participate in the lidar validation.

2.4 Results

2.4.1 Volunteer training and feedback

Forty two volunteers attended the one day training sessions. Although the feedback on the day was positive it was clear that a small number of volunteers had signed up with the expectation of undertaking excavation works rather than lidar validation survey. Possibly as a result of this, four volunteers dropped out after the training day, and a further five during the course of the survey.

Fourteen attended the Dean Heritage Centre support session later held on the sixth of February. Additional support and feedback was provided to nine volunteers during the two on-site sessions. These meetings occurred towards the later stages of the survey period and were generally felt to be useful by both the survey volunteers and WAAS staff. Six hundred and twenty three volunteer hours were logged in total across the lidar validation survey.

At the end of the survey feedback forms were sent out to all of the participants within the lidar validation survey (Appendix 2). The number of responses to this questionnaire was low, totalling five responses (9.5%). This may have been in part due to the volume of other feedback questionnaires they had received, from both WAAS and *Foresters' Forest* team, and some confusion over which stages of the project were being referred to, meaning that some responses

regarding the validation survey were included on the *Field School* forms (see below). Despite this, the responses that were received were largely positive and all respondents expressed an interest in returning to the survey in the event of the delivery stage being approved by the HLF. Feedback was as follows:

How would you rate your experience?

Very Good	Good	OK	Poor	Very Poor
80%	20%	0%	0%	0%

Would you be interested in volunteering to get involved in further survey and archaeological investigation in the future?

Yes	No
100%	0%

The respondents cited the social and exploration nature of the validation survey as a positive towards their enjoyment:

> *'Being with like-minded amateurs who I would not have met in any other way'*
>
> *'I enjoyed getting out in the Forest and exploring areas I probably wouldn't have explored otherwise. I enjoyed finding the limekiln and hearing from other group members about how it would have worked.'*

The learning of new skills with both archaeological and local knowledge was also emphasised:

> *'Improved skills in map reading. It has also kick started my research in the history of the people in the area where I live.'*
>
> *'I have gained local knowledge and met lots of interesting people'*
>
> *'Learning how to identify features from experts who opened my eyes to features that I would not have previously recognised.'*
>
> *'A better understanding of how to read the landscape for archaeological features'.*

In terms of improvement, apart from funding and greater pilot areas, as we expected, we did receive a comment that

> *'I think some of the forms could be simplified'*

- which is a comment we have taken on board in recommendations for further work.

It was observed during training and later during consultation that there was some dissatisfaction amongst the volunteers regarding the pilot areas which had been chosen, as they were not targeting particular areas of archaeology, or seemed to be highly repetitive to the volunteers when recording. This is understandable, as two of the areas, Birchill and Great Bourts contained considerably fewer features than Blackpool Brook and Welshbury. However, it was understood by the volunteers that all areas of the Forest would have to be surveyed as part of the proposed delivery stage, and when their own areas were complete, many of them expressed optimism in starting work on new areas. The feedback received has given a clear indication that the validation survey was a popular element of the *Foresters' Forest* project as a whole and that those who did participate are keen to continue their work within the wider extents of the Forest of Dean.

2.4.2 Assessment of volunteer recording

Volunteer validation commenced after the first training session in October 2016 resulting in 227 feature records submitted across the four pilot areas, with a total of volunteer involvement of 623 hours. The records were returned to WAAS' offices, if a little sporadically, all well before the deadline. The involvement of the volunteer teams has been positive, as has much of the feedback received. Some volunteers identified additional features from historic OS maps and included them within their validation survey, cross-referencing the maps to validate the lidar survey. This helped ensure that features were included that were not visible on the survey.

The feature record forms were well used and the quality and quantity of data has been largely of a high standard, suggesting that the methodology is generally proving effective in providing a model to enable a rapid survey to an appropriate and informative level of detail (Appendix 3). Naturally there have been elements which may need to be altered when continuing the project. More space may have to be made for interpretation and discussion of features by rescaling some of the items on the form. Some hesitancy was observed when completing a plan and/or profile of the feature, largely down to drawing to scale, and most people preferred to do a sketch and write in the measurements beside it. As this is largely representational, changing the requirements to a measured sketch might be the best way to make people more comfortable with this element. Location sketches also would be a positive element to add to the record, for quick and easy reference when the lidar maps are not always suitable.

Varied numbering systems were employed between the different areas for numbering the features- some volunteers were starting again at 001 when going to a new grid square, and others were keeping the numbers concurrent throughout their entire pilot area. This will require standardising when a larger area is being covered to ensure that there is a commonality between the records produced and for ease of data entry.

Some groups were very thorough in taking photographs of features whereas others seemed less inclined. Whether this was due to lack of ownership of a camera, or knowledge of how to submit the photos is unclear. It was acknowledged in the training sessions that photographs in woodland would be unlikely to show subtle features. However photographs of large or more obvious features would ideally have been submitted.

The accuracy of location co-ordinates on the feature records could not be fully verified as it is not clear whether they have been produced on site with a handheld GPS device or at home and measured off the map. Clarification of this for future records would be advisable to ensure that features can be mapped correctly. Likewise, one element which was unsuccessful was encouraging the volunteers to mark on their lidar maps the location of the features they recorded. Only one group frequently submitted map scans but no others were received. This may have been down to a lack of confidence in marking accurate locations on the maps or lack of access to a decent scanner. It may also be pertinent to note that following the initial training day there were only a few occasions where volunteers could liaise with WAAS in the field and ask for clarification, and where WAAS staff could check field records so some additional and focussed support might be in order for any subsequent stages.

The submitted day record pro-forma sheets did not accurately represent the days spent recording; few were received, with volunteers prioritising the feature records instead. This is understandable but it has prevented any detailed analysis of time spent per feature and the area they were covering on each visit. It was also noted throughout the four areas that volunteers considered the day records to be timesheets, rather than the Foresters' Forest approved timesheets which were also provided, although this was rectified.

In terms of submitting the records when completed, some volunteers chose to submit the original field copy, whereas others digitised their records and sent them via email later. This has raised concerns about the potential for self-editing and in a number of cases the description had been largely been copied from other features of the same type. However, the effect was also positive and in many cases has resulted in further research on features being undertaken at home which

was then attached to the record to enhance it, including detailed location maps to complement the lidar ones. Self-editing could be combatted by retaining the original field record as well as the digitised versions, which would ensure accuracy but also allow for further research to be added.

A method of recording evidence of submission would be positive if the project were to continue over a longer period of time and a larger area, as often multiple people from the same groups were submitting records in their free time, with the potential for some records to be missed or duplicated.

2.4.3 Lidar Validation Survey outputs

As a result of the GCCAS 2008 lidar survey, over 1700 potential archaeological features were identified across the Forest of Dean survey area (Hoyle 2011). These sites were directly traced from the geo-referenced hillshaded images onto layers which formed part of the Gloucestershire County Council GIS, and digitised as point, multipoints, polygons or lines. Details of all features identified during the GCCAS project were recorded on a database designed both to meet the specific needs of that project, and to provide information in a form compatible with the Gloucestershire HER, and this is the data which forms the basis of the information within the 2008 report. A single unique number was used to identify each database record regardless of the actual number of individual features this represented. This unique number consisted of the alphanumeric reference for the OS 1km grid square followed by an internal feature number for each 1km square beginning at 01. These consisted of two letters, followed by four numbers, followed by a forward slash, followed by the internal 1km number, thus*:* so6311/01, so6311/02, so6311/03 etc. (Hoyle 2008a, 25).

This data was made available to *'Unearthing our Heritage'* and provided the baseline data for the lidar validation survey undertaken by our volunteers. During the Development Phase of the project, two hundred and twenty seven records have been received from our volunteers (Table 1; Figures 3-10). These included validation records for features identified by GCCAS, as well as records for new features identified by the volunteers. A small number of records were provided for features which lay outside a pilot area, and a number of records were provided without any location information. The total features recorded on the GIS will differ from the total number of records received as some records were without sufficient information and others were duplicated copies of previously recorded features, however they have been included in the totals as they still represent time and effort on the part of the volunteer teams, and are inevitable when working over a large area in changing groups.

Pilot area	GCCAS features	New features	Features outside of pilot area	Total located on GIS	Total records received
Birchill	4	14	5	23	23
Blackpool Brook	7	55	7	69	99
Great Bourts	13	20	0	33	41
Welshbury	26	28	0	64	64
Total	50	117	12	189	227

Table 1: Lidar validation survey records received

During this validation survey, features were numbered in a similar manner with each 1km block broken down into four 500m blocks (Birchill, Blackpool Brook, Welshbury) or sixteen 250m blocks (Great Bourts) with an individual feature record number added at the end ie. SO6114-03-001. One km survey blocks are fairly typically for this type of survey (eg Grow with Wyre, SEWAF), but because of the small size of the pre-determined pilot areas they had to be broken down into smaller areas in order to allow multiple groups to work in the same pilot area. Hyphens were used

in separating the numbers so as to provide an easy visual guide to further differentiate these records from the GCCAS ones which used a forward slash.

The archaeology identified by the volunteers has been assessed below according to the feature type found, against the records provided by the GCCAS 2008 survey, and in Welshbury the 2003 validation survey (Hoyle 2003), in terms of identification and distribution within the individual pilot areas.

2.4.4 Assessment by Feature type (Figures 3-10; Table 2)

Feature type	Birchill	Blackpool Brook	Great Bourts	Welshbury	Total
Uncharacterised				8	8
Charcoal Platforms	2	48	1	44	95
Quarries	9	19	10	4	42
Mines	1		1		2
Holloways	1		1		2
Trackways	2	3		1	6
Banks	1	3	11	2	17
Mounds	1	3	6	8	18
Buildings	1	3			4
Watercourses		1	2		3
Iron Working Site				1	1
Total	18	80	32	68	198

Table 2: Quantification of features by type

NB: Some of these features lie outside the pilot area boundaries, see individual discussions for further information

More detailed descriptions of the results by feature type and pilot area follow.

Charcoal Platforms

Charcoal burning platforms are one of the most ubiquitous features found within the Forest of Dean and can be attributed to any time period. Hoyle (2008b, 22) has suggested that it is likely that charcoal platforms are the most common archaeological feature within the woodland of the Forest of Dean and this seems to be supported by the findings of the volunteers, with 95 sites identified across the four pilot areas. Some slight caution should be exercised , however, as they may be over-represented in surveys being one of the most readily identifiable discrete features, and it should also be noted that they were a focus of the training days for *'Unearthing our* Heritage' so volunteers may have been confident about these types of features, but less confident with other features.

It is difficult to assess the potential and significance of these features due to their ubiquity and also longevity (thus any given platform could be of virtually any date from Roman period onwards), however, one potential avenue for further research can be identified. Identification of groups of platforms associated with nearby iron production sites, has the potential to further inform on the location of other sites of industrial significance (Hoyle et al. 2004). This was not possible during this survey as identification of nearby sites was hampered by bracken and other undergrowth, and

would have required a lot of effort for the volunteers for perceived little gain. However it would be interesting to target some of the higher concentration of charcoal platforms identified and investigate more thoroughly to determine if this correlation is correct and use the more identifiable charcoal platforms to identify likely iron working sites which may be more difficult to identify on the ground.

Birchill

Two charcoal platforms were identified within the Birchill pilot area. Neither of these had been identified during the 2008 survey. They were located at the extreme edges of the pilot area, and none were observed in the central area which is largely formed of distinct areas of mature pine plantation and scrub. The plantation, felling and harvesting may have obscured and damaged any remaining platforms beyond recognition. It is possible that they were not visible (and therefore unrecorded), and it is also worth considering that Birchill is generally level making the identification of these types of feature more difficult than when they can clearly be seen cut out of the hillside.

Blackpool Brook

Forty-six charcoal platforms were identified at Blackpool Brook, five of which were located outside the pilot area, of which two may be the result of location recording errors. Of those recorded in the pilot area, seven had been previously identified by GCCAS as a group of possible bell pits (SO6508/02). In this survey they were all identified with a high level of confidence as charcoal platforms, with four others (not recorded by GCCAS) found in close proximity. It seems likely that this interpretation of charcoal platforms is correct as many of the records described a high concentration of charcoal in and around these features. This highlights the value of validation survey, as it is difficult to interpret lidar data through desk-based study alone. A further 30 platforms were found extending towards the south of the area, gradually becoming less concentrated, towards what is assumed to be later quarrying activity.

Great Bourts

Only one charcoal platform was identified at the Great Bourts Inclosure, and even this was only given a confidence rating of low. It might have been expected that further charcoal platforms would have been present, particularly in the north-western area where grown out coppice stools have been identified. These are indicators of woodland management and are often associated with coppicing for charcoal production. This absence may possibly be due to the amount of ground being covered by one individual for most of the time in this part of the survey and a preference for characterising the previously identified sites over new ones. In addition, the centre of the pilot area is quite heavily damaged by pine plantations which would obscure the features even if they had been present.

Welshbury

The 2008 survey identified a number of charcoal platforms running along the contours of the lower western side of the Welshbury pilot area. These were reflected in the volunteers' findings with sixteen of the twenty-seven platforms recorded being located in this area, although a certain degree of ambiguity caused two of the total to be recorded as uncharacterised features.

Charcoal platforms in Welshbury may generally have been under-recorded as many of the unrecorded platforms, which had previously been identified on the GCCAS survey and were listed on the volunteers mapping as sites to visit, were in areas that would have been traversed when the sites that were validated were being visited. Particularly the southern end of this area was very well recorded with every platform being located, suggesting factors such as bracken and visibility may have inhibited identification, so within this area in particular it would have been beneficial to have had unvisited sites recorded as such. There was also a concentration of platforms located in the centre of the hillfort enclosure some of which were identified in the 2008 survey as charcoal platforms. Since the area was coppiced in the past this is not surprising and would have provided an ideal, largely flat area in which to work.

Extraction- Quarries and Mines

Quarrying for both limestone and sandstone has been an important industry in the Forest of Dean and would have been undertaken from any time since the Romano-British period (Hoyle 2008b, 34). Stage 1 of Hoyle's survey produced a 50% rise in the number of known quarries. This current lidar validation survey identified thirty-eight quarries of which only six had been identified in the 2008 survey (as extraction pits), four in areas identified as being associated with quarrying activities. Three features which were recorded as mines were identified, two of which correlated with features located in the 2008 survey. The GCCAS survey omitted post-medieval quarries which were already recorded either on mapping or the HER. The distinction between quarries and mines without visual aids was largely based on the description and, if provided, measurements of the features to determine whether what was being referred to was likely to be surface or deep extraction, with support from historic maps when available.

Birchill

Within the Birchill area a number of quarries were identified, with a cluster of four concentrated into GCCAS polygon (SO5911/05) which had been interpreted as a quarry in the 2008 survey and which extended east beyond the limits of the pilot area. To the immediate west, another possible quarry was identified and may be an extension of this quarrying area.

A large area was identified by volunteers as a series of banks surrounding a levelled area, just south of the remains of a building and walled enclosure visible on lidar (feature SO5910-01-002). This was identified on the first edition OS map (OS 1878a) as Barnhill coal pit which was disused by the time the area was surveyed by the OS. Further to the east was a feature identified on the 2008 survey as an extractive pit and determined to be a quarry by the volunteers, which is recorded on the first edition OS map as a gravel pit. A gravel pit was also identified (by the volunteers) just east of the walled enclosure around the house and although small, could relate to another backfilled gravel pit also visible on the mapping in the same location. One further feature identified by the volunteers as a potential quarry was located in the southern end of the pilot area which was not identified on the 2008 survey or historic maps.

Mining activity at Birchill is represented by The Barnhill Coal Pit, discussed above, and the Old Prosper Pit which is also recorded on the first edition OS map as being disused. Old Prosper is located within an unusual landscape feature shaped as a quartered circle of trackways dividing the surrounding woodland (recorded as SO5909-01-014) and is also recorded on historic OS mapping (OS 1878a), yet has no trace remaining on lidar. It can only be assumed that they are related, as no name or description for the feature occurs on any available mapping.

Blackpool Brook

Blackpool Brook evidenced the largest concentration of quarries of all the pilot areas and it is likely there were many more that were not recorded. It is clear on the lidar imagery that an L-shaped swathe of quarrying activity covers the majority of the southern end of the pilot area. Of these, the quarries situated on the area known as 'The Copes' in the south-western part of the pilot area are visible on historic mapping (OS 1878b), and at that time were listed as old quarries suggesting that they were already out of use by this date. The distribution of these quarries visible on the lidar suggests that that they were more extensive than is mapped by the OS. This may also be the case with a distinct cluster of five quarries just south of these (grouped as feature SO6507/04/004). The quarries do not appear in the 1878 OS mapping, but are recorded on 1901 OS mapping as old quarries (OS 1901a). These quarries are registered on the HER as Gibralter [*sic*] Mine (Blakeney Hill Stone Mine) under GHER18406, and were therefore not included in the 2008 survey due to being recorded on the HER.

No definitive evidence of mining activity was identified in the Blackpool Brook pilot area.

Great Bourts

Eight quarries and two potential quarries were found in the Great Bourts Inclosure pilot area, four of these corresponded with features identified on the 2008 survey. A concentration of four was found around a series of linear features and a holloway at the extreme south-west of the area. One of these and three others extending up the western edge of the area had been previously identified in the 2008 survey. The remaining three were identified by the volunteers, two of which were internal to an H-shaped series of banks (feature SO6014-10-003), and one was identified to the east of these, near the eastern end of a bank (SO6014-10-005).

Two other quarries, the most easterly of which had been identified in the 2008 survey, were located in the northernmost part of the pilot area, just south of a pixilated area on the lidar (SO6114/02). This area was not surveyed due to concerns over ground cover and steepness. North of this area, beyond the limits of the pilot area, was located the Waterloo coal pit, recorded as disused on historic mapping (OS 1881). It is possible that these 'quarries' and the mine (recorded as SO6014/14 and as a quarry in the 2008 survey) were associated with the coal pit, and could be test pits or air shafts.

Welshbury

Eleven quarries were identified in the walkover survey of Welshbury (Hoyle 2003), and were considered likely to be dated as post-medieval features excavated to provide building stone for nearby houses. In the current survey only four quarry features were identified, one of which was proposed in the 2008 survey to be a charcoal burning platform but when measured was proven to be at least 2m deep. The other three quarries had not been identified in previous surveys and were in the northern part of the pilot area. These ran in a north to south alignment and are assumed to be associated with each other. The central one was recorded as being 4m deep with a characteristic spoon shape and a 2m deep track leading out of it (SO6715/02/031).

No evidence of mining activity was identified in the Welshbury pilot area.

Boundary banks

Boundary banks and other linear earthworks were identified as not being wholly understood within the Forest of Dean during the GCCAS survey. Possible associations can be made with other features in the surrounding vicinity, however these are often tenuous and the date of many of features remains uncertain.

Birchill

A north to south aligned boundary bank was identified in the northern area of Birchill, truncated by two modern roads. This was also identified in the 2008 survey. It is possible that it is associated with a structure to the west (SO5911-03-016), although this relationship cannot be proven.

Blackpool Brook

Three banks were located east of the Blackpool Brook running north to south, along the watercourses alignment. It seems likely that these are related to the brook and its management, and of are uncertain date.

Great Bourts

Eleven features were identified as banks within the Great Bourts pilot area, two of which had been identified in the 2008 survey. An H-shaped group of potentially associated banks (SO6014-10-003 and SO6014-10-009), were recorded in the south-west corner of Great Bourts, enclosing a number of quarries which may also be associated. One of these banks (SO6014-10-003) also has an indeterminate relationship with a third bank (SO6014-10-002) with which it forms a cross shape.

A large potential enclosure can be seen just to the north of these features. The eastern side is defined as a linear earthwork, orientated north-south and also identified in the 2008 survey. At the north end, this appears to join a west to east aligned feature that was partially recorded in the current survey but can also be seen on the lidar extending further west to meet a north-south aligned bank. The latter is visible on the lidar and was recorded by the volunteers in the current survey, although it was not noted by GCCAS in 2008. Two other banks were also identified in this vicinity, one of which was also recorded in the 2008 survey. They could not be associated with any other features.

Another bank was identified at the southern edge of the pilot area, aligned with the A4136 Monmouth to Mitcheldean road which it may be associated with.

In the south-eastern corner of the pilot area three more banks were identified. Of these, two (SO6114-05-010 and SO6114-05-009) may be connected but this relationship was not firmly established. They may also be associated with the mine/quarry that was identified in the eastern part of this pilot area.

Welshbury

Within the Welshbury pilot area, two banks were identified. One is located south of the hillfort and forms part of an associated enclosure system. The system is clearly visible on lidar, but only two sides of one of the enclosures was recorded, so the systems as a whole have been under-recorded and would benefit further investigation. A second field system is visible on lidar to the north-east of the hillfort. Again only one of the boundaries has been recorded, so would also require further investigation to determine its extent and any links with the Scheduled Ancient Monument.

Holloways and Trackways

The distinction between holloways and trackways in this survey is not clear and a broad range of features are included. Photographs were not often taken, so the depth of the features recorded was used as the principal factor in determining if a feature was recorded a holloway. It was determined that features measuring more than 0.5m in depth were holloways, and anything less was a trackway. It is clear that further clarification will be needed in future.

The location of the tracks and holloways in relation to other features was also used as a guide to their potential extent when that was not fully recorded; however under-recording of these features was a common feature across many records so unless the association was obvious, it is likely that potential holloways have been recorded as trackways for the sake of accuracy and expediency.

Birchill

Only one possible holloway was identified in the Birchill pilot area and this was located outside of the pilot area lying to the north-east. It was identified in association with a series of holloways/ braided trackways which extend west into the pilot area, only one of which was recorded by this survey. This may represent a more deeply eroded trackway, rather than a holloway. This holloway and the surrounding network were not identified on the 2008 survey during which holloways only tended to be recorded where associations could be suggested with other features (eg scowles, undated surface extraction pits, undated enclosures) or where they appeared to be earlier than post-medieval features. A pair of trackways was identified to the east of the Birchill survey area, orientated north-west to south-east. These were recorded in the 2008 survey as holloways and by the volunteers as trackways. However the location of these features given by the volunteers does not exactly align with the 2008 holloways, and it seems likely that this is actually a network of braided trackways that have not been fully recorded.

Blackpool Brook

A pair of trackways were identified within the Blackpool Brook area. These were orientated east to west, running downslope to the west (within the SO6508/03 polygon identified by the 2008 survey).

The northern feature is clearly visible on lidar, whilst the southern feature is a lot less distinct, and may be one of a network of holloways/or braided trackways. One further trackway was also identified outside of the pilot area to the south-east which was not recorded by the 2008 survey; however, its presence at such a distance from the pilot area may suggest an anomaly in recording of the grid location. This will therefore need checking again.

Great Bourts

In the south-western corner of the Great Bourts Inclosure an H-shaped network of banks with an associated holloway was identified, with an internal group of quarries. The holloway is visible on lidar, approaching from the west at the limit of the pilot area, and terminating at a junction with a bank formation (SO6014-10-003) and the southern end of a further linear earthwork (SO6014/11) which had been identified on the 2008 survey but was not identified in the current one. It seems likely that the holloway is associated with the nearby (internal?) quarries, or at least the most westerly one, however its relationship with the bank is less clear. No trackways were recorded.

Welshbury

No holloways were recorded at Welshbury. A single trackway was recorded at the southern limit of the pilot area, orientated south-east to north-west, with a forked shape at the south-east end. It seems likely that this feature was recorded as far as it was clearly defined, but it is likely that it continues to the south-east, as although not visible on the ground it can be seen extending on the lidar survey. It is possible that this was once a part of a network of braided trackways in this area.

Mounds

The definition of mounds within this survey, when not previously identified as such by the 2008 survey, depended largely on the volunteer interpretation and sketch, and photos when provided. Unfortunately the density of undergrowth often obscures scale and definition of these features. The mounds identified cannot be dated or characterised unless in proximity to other features, and often these associations are unclear or guessed at. As such, they largely remained undated and of uncertain function.

Birchill

Within Birchill one mound feature was recorded, which correlated with a mound (SO5911/11) identified in the 2008 survey.

Blackpool Brook

Three mounds were identified in the Blackpool Brook pilot area. Two of these were situated either side of a linear earthwork (SO6507/02) which itself was identified in the 2008 survey, but not validated. Both of the mounds were recorded as piles of stone, and although interpreted as mounds could potentially be collapsed structures. The third mound in this pilot area was identified further north, amongst a series of charcoal platforms.

Great Bourts

Within the Great Bourts pilot area, an alignment of six mound features was identified near the south-eastern boundary. Four of these had also been recorded by the 2008 survey which identified them as possible spoil heaps or mining sites; however, evidence for such associated activities within the immediate vicinity was not recorded by the volunteers.

Welshbury

A linear arrangement of six mound features was identified along the north-east limit of the Welshbury pilot area. A single feature had been identified in the 2008 survey in the same area as one of a group of charcoal platforms. A further single mound feature was also identified at the north-east edge of the hillfort platform.

Buildings and Walls

Built structures, whole or partial, were recorded in both the Birchill and Blackpool Brook pilot areas. Birchill contained a building in the northern area, west of a linear feature recorded in 2008 (as SO5911-06) and interpreted a boundary by the current survey (SO5911-06-004). This built structure (SO5911-03-016) was recorded as demolished and having a partially visible access track running to the north where the B4226 now exists. This structure is not recorded on available historic mapping or on the 2008 survey.

In Blackpool Brook, a 30m wall was recorded orientated east to west towards the edge of the Blackpool Brook. Two structures were also identified in the south of this pilot area on the western bank. One was identified as a lime kiln, which is visible on historic mapping (OS 1878b) and is registered on the HER as being post-medieval in date. This feature was also submitted as a Built Heritage site (see Section 3). There is also a structure just to the north which is also visible on the same historic map and assumed to be associated with the kiln.

Watercourses and other related features

Dam

A bank, interpreted as a dam (SO6508-03-011), was recorded in the Blackpool Brook pilot area. It was located on the western edge of the pilot area. This had also been identified during the 2008 survey (feature SO6507/01) and is already recorded as a dam and culvert on the HER (GHER15194). The records whilst not providing a new site add to the record as they provide an assessment of the condition of the feature (rated fair) which is valuable.

Drainage Culvert

Two drainage related features were identified in the Great Bourts Inclosure pilot area (SO6014-03-005 to the west and SO6114-05-002 to the south-east). Both are situated on the lower slopes of the area and are assumed to be 19-20th century in date - each runs under a nearby track. One of these (SO6014-03-005) may be related to water diversion and management around residential properties located downslope. The other (SO6114-05-002) appears to have used an existing hollow in its construction which may have been an archaeological feature but is now obscured.

Iron Working Site (SO6715/02/037)

One possible iron working site was identified during the survey. This lay on the north-east side of the Welshbury pilot area, just outside the area surveyed in 2003. It consisted of two roughly circular levelled areas with a drop of approximately 4m between them. Iron slag and Roman pottery were both present as surface finds. This was the most easterly feature as the current survey was not extended to the full eastern border of the pilot area. To the immediate west was a bank or possible lynchet (recorded as SO6715/02/36).

2.4.5 Rapid Assessment of Features by Condition

Volunteers were asked to complete an assessment of the condition of the features they identified within the validation survey (Table 3). This was to improve the management of the archaeological resource and to further inform potential conservation works. The classifications were divided into good, fair, eroded and damaged, and the volunteers asked to circle the most appropriate box. An additional field allowed for further comments to be added regarding condition as observed.

The main reasons for deterioration of condition identified were damage from boar and the effects of forest vegetation. Forestry activities were also cited, as well as damage from bikes and other forest users.

Feature	Good	Fair	Eroded	Damaged
Quarry	11	25		
Trackway	2			4
Charcoal Platform	12	46	5	18
Banks and Boundaries	3	6	4	
Holloway	2			
Mound	5	4	4	
Mine	1			1
Wall		1		
Watercourse	1			
Uncharacterised		1		

Table 3: Rapid assessment of features by condition

NB: only 155 features had condition recorded (out of a possible 227)

2.5 Evaluation of results

2.5.1 Overview

The survey has been a considerable success in verifying the presence of the features that had been mapped as points and polygons from the lidar data. The survey has also provided important new information on the condition and extents of these sites and helped to develop and refine interpretation of many sites. New sites not identified through the lidar data were also recorded, thus adding to the baseline data and numbers of sites present.

These results therefore considerably enhance the numbers of known and verified sites across the four pilot areas and although some areas of uncertainty remain and further questions have arisen, the data is now much more capable of supporting the development of further understanding, research and management initiatives.

There was mixed success in locating the features that had been mapped from the lidar survey. Point locations of features presumed to be charcoal burning platforms, quarries, mine entrances and other comparatively small-scale features were consistently recorded by the volunteer teams and most were identified on the ground and thus appear in the validation survey data. In contrast linear features and feature groups that had been mapped by GCCAS using polygons were less consistently identified/verified by the volunteer teams. This may reflect a lack of confidence in identifying such features (especially linear ones) and this suggests that the training provided was not entirely clear or sufficiently reinforced through follow up sessions. Training sessions had focussed on point features such as charcoal platforms, as they were more numerous and easier to cover. Furthermore availability of team members at any one time to go out together to tackle these features may have been a factor as tracing a linear feature through difficult terrain and/or refining understanding of a set of features is not so readily achieved as verifying a single platform or other point data feature.

It is perhaps notable that at Great Bourts Inclosure, which was largely completed by only one individual, the largest number of linear features were recorded and all to a very high standard of accuracy. This indicates that personal skillsets may also have been a factor and highlights that there may have been some weaknesses in the training delivered for identification and recording of linear features. The Welshbury and Birchill teams were the only ones to characterise areas (one

area at Welshbury and two in Birchill) and both these teams left other areas unvisited or unrecorded suggesting perhaps unsurprisingly that time factors may have influenced either the level of coverage or detail achieved. There were also inevitable issues given the landscape and land use in the pilot areas where the dense ground cover of bracken that remained following a mild winter adversely affected visibility and access. This almost certainly will have resulted in features remaining unverified and thus having no record.

A lack of understanding of why the areas/polygons had been recorded by GCCAS and what the purpose of their characterisation was may also have adversely affected the records made by the volunteer teams. With both the polygons and linear/line features (which were frequently only recorded as points rather than mapped end to end), a lack of confidence about the process involved in mapping these more complex features (and groups of features) in the first instance, or lack of clarity during training and in follow-up support, may have been a factor in the under recording that has been observed. In respect of the training, timescales necessitated a focus on smaller features which may have diverted attention and understanding away from more complex features. It may also be the case that the reasons for features being mapped as polygons representing a group of features or points representing a linear feature may not have been made entirely clear. Therefore providing clearer training and a re-iteration that the project involves validation of all known points as well as the discovery of new features may be beneficial for further stages of survey.

Lastly, eight features were identified by the Welshbury team as natural ancient tree throws, five of which were consecutive in the record. This may indicate a lack of confidence in identification and as a result, where features have been identified as natural by volunteers, especially in the case when they have been previously identified by GCCAS, they have been listed as uncharacterised to ensure that a definitive answer has not been given, and to possibly encourage a revisit to later determine if this is indeed the case.

2.5.2 Qualitative Assessment of Lidar Validation Survey

To quantify the success of the lidar validation survey and the identification of new features, the Blackpool Brook pilot area was chosen to assess the accuracy of the volunteer records against the existing records. The basis of selection was that this was felt to be most usefully representative. Birchill and Great Bourts had comparatively limited numbers of features identified on the GCCAS lidar mapping and correspondingly quantities of new features identified by the volunteers were low. In contrast, Welshbury had already been subject to a walkover survey in 2003 and this was highly detailed and had influenced the GCCAS mapping and the validation pilot undertaken in 2010. Welshbury was therefore considered to be unrepresentative of the potential impact the *'Unearthing our Heritage'* lidar validation survey would have on the remainder of the Forest if the project successfully moves through to a Delivery Stage.

The volunteers at Blackpool Brook provided records using the pro-forma sheets, as well as a tracking spreadsheet. In most cases these records were of a high quality and confidence in the majority of their interpretations can be considered high, although some errors did result in a small number of records being omitted from the survey, largely due to a lack of key information.

Of the 99 feature records submitted, 54 validated individual features visible on the lidar data. Of these only 23 had been mapped by the desk-based GCCAS lidar survey of 2008. This almost certainly reflects that the GCCAS survey regularly mapped groups of features within a polygon and thus under a single 'site' reference whilst during the field validation survey they have largely been individually recorded. As a result the benefits of the validation survey can clearly be demonstrated as they refine and expand on the GCCAS records which by necessity often simplified what was visible on the lidar mapping but can be separated out in the field as part of a validation survey.

Further research was also undertaken on some features by the volunteers, resulting in six being identified on historic mapping (OS 1884 and 1901b). These features were all related to quarrying or were built structures (eg a lime kiln).

Some of the features for which records were submitted were located outside of the pilot area (six charcoal platforms, a trackway and a hollow). The majority of these lay to the north-east of the pilot area but none were very far from the boundary and may represent the difficulty of orientation for inexperienced surveyors under a forest canopy. Three of these charcoal platforms formed part of a group of features identified by the 2008 GCCAS survey (SO6508/02) and most of these lay in the pilot area. One, recorded as a polygon (SO6508/02), encompassed a group of nine features identified as probable bell pits; of these seven were located by the volunteers and re-interpreted as charcoal platforms. Again, the benefits of undertaking field validation survey are clearly demonstrated by such refinement of the original desk-based survey data and interpretation.

Within the Blackpool Brook pilot area, three linear features and six full or partial polygon features had been previously identified in the GCCAS survey. Elements of three of these polygons were identified by the volunteers but the remaining three were not recorded. All of the linears were recorded. Throughout all of the pilot areas the verification of linear and polygon features has been observed to be intermittent as discussed earlier.

A total of 69 features were identified and confirmed within the pilot area, including charcoal platforms, banks, mounds, quarries, a wall, a dam and two built structures.

- Twelve features identified within polygon SO6508/01 within pilot area limits - Eleven charcoal platforms and one wall which was assumed to be associated with the stream bank
- A dam construction (SO6508-03-11) was identified as the polygon SO6507/01and corresponded with the SMR15194 record
- Trackway (SO6508-04-019) was identified within polygon SO6508/03 along with seven charcoal platforms
- Two charcoal platforms and two quarries were identified within polygon SO6608/02, within the pilot area limits
- Linear SO6507/02 was not identified but around it was found three charcoal platforms, a quarry and two mounds.
- Polygons SO6607/01 and SO6608/01 were not individually identified. Both of these partially within the extreme south-eastern limits of pilot area where no other features were identified either.
- A previously unidentified alignment of five quarries (represented by polygon SO6507-04-004) was found in the extreme south-west of the pilot area near to two buildings, and also not previously identified by GCCAS. They were interpreted as a labourer's residence and a lime kiln.

2.6 Discussion

The lidar validation survey resulted in 227 individual records being returned, with the validation of 50 GCCAS identified features, and over 122 new features added to the archaeological record of the Forest of Dean. In terms of time spent by the volunteers on the survey, 623 hours were recorded in total over the span of the project; however it is likely that some hours were not represented within the final record as there appeared to be some confusion over the repeated recording of time spent on both day record sheets and personal timesheets. Very few day records were returned and it is suspected that they were considered onerous and not much used. If this is the case then potentially removing them from the paperwork, and replacing them with a field on the feature records for date and individuals present at recording, may result in a greater level of information if it is later required.

In terms of the onsite recording process, it became apparent that some volunteers were less confident or inclined to use certain recording fields than others. Partly this may be due to the language being used not being accessible, and/or people not wanting to fill something in wrongly, so omitting it altogether. Particularly this was noted with the scale drawing part of the record, which

although it gave options for different scales, was often not filled in or a sketch was done. Since scale can be very difficult to ascertain within the forest cover, and since the sketches were largely representative of the feature, using a different form of language such as asking for a measured sketch, might have made people more comfortable with the concept of producing what was an archaeological drawing. Likewise, reinforcing the value of drawing features in relation to others in the immediate vicinity would in fact benefit the record as it would encourage volunteers to take a wider view of the archaeology and landscape around them, not just as isolated features.

A key element to this project, beyond the verification (identification) and characterisation of the features GCCAS had mapped from the lidar data in 2008, was an assessment of the condition of the features that were found, to further inform about the rate of deterioration of the sites and support provision of advice on possible future management options and/or conservation works. On the record sheets four options were provided (good, fair, eroded and damaged) to indicate condition of features being recorded, and a space for reasons for the damage was provided beneath. It could be suggested that these are too vague and subjective, as all of the features which will be identified will be damaged to some extent, simply by time, and the presence of the vegetation and forest around them. Potentially a scale of damage observed, and a series of check boxes with a range of commonly observed reasons for damage with an option to add newly observed ones, would mitigate this and provide a simpler and more accurate method of recording condition, which in turn would address the lack of recording of this element (only 115 of 227 records had condition listed).

Throughout the pilot phase receiving records from volunteers was often slow and a large number of records were only received at the end of the survey. Applying regular deadlines for receiving completed records would have allowed greater monitoring of the quality of records submitted, and would have given more opportunity for identifying where some groups or individuals could have benefitted from additional support or training. Likewise, a form of evidence for the submission of records could have mitigated some of the duplications and omissions in the numbering systems, and ensured that records that may have been filled in onsite, and maybe in a notebook, were later transferred to the pro forma archive and submitted. There was some concern about self-editing records when they are being digitised, so requesting the primary field archive as well would mitigate this and retain what is standard practice on most archaeological projects.

Development of the handbook to be more specific to the archaeological features of the Forest of Dean, using the results that have been acquired so far, will be an important element in ensuring that in the future volunteers are provided with information that is better targeted to their needs when out in the field, and can hopefully limit the uncertainty around identified features. Likewise, providing a forum setting for volunteers from different pilot areas to compare results, identifications and to ask for advice and support would be highly valuable as it could provide further training and development within the volunteer body themselves; a self-sustaining option that would require little management from outside bodies such as WAAS, unless specifically requested.

Further support sessions and a greater level of contact with WAAS throughout the project would have benefitted individuals who had fallen 'in a rut' with their recording, such as was observed in a number of cases where descriptions and interpretations were being repeated. It would also benefit volunteers who needed refresher sessions for skills such as map reading and grid reference plotting. They would also provide consultation for individuals who had found features they were uncertain of, or for those who did not understand the GCCAS lidar mapping in certain areas. This could have further encouraged the identification and recording of areas (polygons) and linears identified by GCCAS which were often only partially recorded but not to their full extent, or were not recorded at all by the volunteers. Future training should also emphasise the importance of clearly recording situations where a visit has been made to a location that has been mapped from the lidar but nothing was present (negative evidence) or whatever may have been present was obscured (conditions rendered survey ineffective). As a result of the latter it has often not been possible to determine from the records whether certain features were simply not visible during a visit or had even been visited, which negated the effectiveness of the validation (or otherwise) of certain

GCCAS features within each of the pilot areas. More generally therefore it is recognised that some refinement of the training and better targeted support and networking mechanisms need to be employed in any subsequent work.

3 Built Heritage

3.1 Background

Numerous built heritage features are located in the Forest of Dean, many of which are valued by members of the community for a wide variety of reasons. The relative importance of those specific features is often unknown and unrecorded, and the people that do value those features may have only limited knowledge of the origins, rationale or story of those features. As a result, a need was identified within *'Unearthing our Heritage*' to encourage members of the public to go out and make a photographic record of the features they know about and value. This could form the basis of a more comprehensive record of the Built Heritage surviving in the Forest in turn serving as a foundation for the conservation and recognition of those features as valued assets for local communities and visitors, and as a basis for celebrating and telling this part of the story of the Forest.

3.2 Aims

The aim of Built Heritage is to compile a comprehensive record of heritage features, which can be used to identify important sites that need remedial action to prevent collapse or total loss of structure. The intended photographic record should also be useful to allow repeat visits on a regular (eg 5 or 10-year) cycle to monitor condition. This will encourage people in the community to take an interest in their heritage and sites they specifically know and care about which may otherwise be overlooked by the responsible land managers.

3.3 Methods

During the Development Phase, a simple guidance document was devised and an online submission form was set up using Google Forms and Drive to receive photo submissions, requesting the following information:

- general personal information of the submitter such as name, address and email address,
- the date on which the photographs were taken,
- the name of the wood or nearest village to the site,
- the name you know the site by,
- grid reference for the sites location. A link to gridreferencefinder.com was provided to make this easy to obtain.

A space was allocated for text requesting that the submitter explain why the heritage feature is important to them, anything they know it may have been used for, and why they thought it should receive some HLF funds for conservation works. It was then possible to submit up to five photos at any one time. Email or post options were also provided as alternative methods of submission.

3.4 Overview

Submissions came from fifteen different individuals, many of whom made multiple submissions. It appeared that once involved in the project then people were willing to continue submitting, including adding further photos and details to previous submissions. However, in the context of the overall project the number of people involved was low and from a narrow demographic, the majority already being involved in other elements of the *Foresters' Forest* or being individuals involved in the project on a professional level. This may have introduced some bias into the range and character of submissions made.

There were suggestions that the online form was not a particularly easy or user friendly means of submitting photographs and information for many people. The four individuals who did use the

form, for the most part submitted multiple entries (twelve in total), and therefore seemed comfortable with the process enough to continue its use. Issues were experienced with the online form in that some submitters were not familiar with a 'captcha' verification form, which was initially required for the submission of the photos. This was then later removed in response to comments from users. Seventeen submissions were also sent via email, and two were received by post.

The difference in data quality between those using the pre-constructed online form and those who sent their submissions directly via email or post was very varied. When submissions were sent directly, frequently the accompanying information to go with the photo was limited or not included at all, and with the postal entries often return addresses were not supplied to request further information. Since the aims of the project were to inform on, and potentially ensure conservation of these structures, the lack of supporting information submitted with the photographs weakened the potential for identifying personal and community significance for sites involved and that this element of the project was aiming to document.

3.5 Results

The Built Heritage project ran from early February to the end of March 2016, and overall 30 unique sites were identified with over 100 pictures submitted. Some sites were submitted two or more times, including Trafalgar Colliery, Soudley Packhorse Bridge, Moseley Tunnel, Lydney's Upper Forge and the Lime Kilns at Pitching Green. These are larger and more complex structures than many of the other submissions and their visibility in the landscape or iconic status probably accounted for the multiple submissions.

Table 4 provides details of each submission with Figure 11 showing their distribution and Plates 3 and 4 and Appendix 4 two example submissions.

Sites submitted have been classified broadly into industrial, mining and transport categories. This was to create a method by which to differentiate sites from each other and determine which aspects of the Built Heritage were held to be most significant by those submitting the photographs and information. Transport links such as tramroads and bridges were the most commonly identified, with fifteen submissions. Industrial and mining sites received eight and four submissions respectively.

Submitters were asked why they considered their sites suitable for submission. There was some ambiguity with this as many did not justify their submission with reasons beyond the fact that they were a historical feature, which may have been in part due to a lack of understanding of why the images and information were being requested in the first place. However, for the purposes of classification, these were broadly divided into the status or historical significance of the site, the condition of the site, the personal resonance with the individual, and in one case, the environmental significance (Moseley Tunnel fernery). Each site has been recorded within the project according to the perceptions of the individual submitter with no editing having been undertaken post submission, thus ensuring an accurate reflection of the perceptions and understanding of those who became involved. Status and condition appeared to be the largest motivator in terms of submission, with eleven and eight submissions respectively, with personal resonance only providing three records each.

The condition of the sites was assessed post-submission, with reference to information provided by the submitters, and assessment of the photographic record provided. This was a rapid survey and should not be taken as a definitive assessment - when there has been uncertainty, this has been listed as 'assessment required', but ideally assessment should be completed for all records and sites identified. As a result of this work, eleven sites were listed as being in good condition, six as poor and eight requiring definite further assessment.

Unsurprisingly, vegetation clearance is often recommended for the built heritage features identified by the submitters and this is seen as essential to maintaining the condition of the structures. Likewise, basic stabilisation of stonework was recommended for many structures. There is potential here for the development of new and specific skill sets within the community volunteers in

supporting managing and maintenance of some of these sites and thereby more closely integrating the local community, the *Foresters' Forest* project and the Forestry Commission in developing policies and approaches for managing these sites in the future. Interestingly, no one promoted a 'red velvet rope' approach in preserving these structures but rather a progressive management strategy. Suggestions were made for conversions to historic walks or historic environmental features, and ensuring accessibility and visibility for the public to enjoy these sites has been noted as a key factor in helping secure their future survival

3.6 Discussion

It was unfortunate that the level of submission within the project was only limited. This was almost certainly a reflection of the relatively short timescale that was set aside for submission of photographs, and also relatively limited advertising of the scheme. Better results may be achieved with a longer running scheme over different times of the year, so people feel more incentivised to go out into the Forest and photograph their heritage throughout the seasons.

In terms of promotion, it was largely unclear to the volunteers what the submitted photographs were to be used for and what the project focus was. Better focus and clearer expression of the project aims would probably have led to stronger expression of the less tangible aspects of value and personal significance of the sites, since many of the photographs submitted were done so for perceived historical significance rather than personal resonance.

A large proportion of the sites identified were related to the transport networks established to service the industrial and mineral extraction and processing companies with the transport related features being better preserved. It seems that the mining and other industrial sites were either converted to other uses or have been more comprehensively 'reclaimed' by the forest upon abandonment. In contrast transport links appear to have continued in use beyond the end of their primary function, or, where abandoned, have survived more visibly in the landscape or even been converted into walks or cycle paths that maintain their visibility and function as routeways.

It is felt overall that a higher profile through wider promotion and better defined focus and objectives would benefit any extension of this element of *'Unearthing our Heritage'*. It is ideally placed to be highly accessible to a wide range of people with varied abilities and levels of participation, and can easily act as a springboard for volunteers joining other parts of the project, and gaining knowledge and a new found interest in their heritage. Expanding the platforms of submission of photographs would be one method in which the public could become more involved and take greater ownership of this aspect of their heritage. Submission directly to a website or forum where people could view each other's submissions, and contribute with their images, research or oral history would make the project much more accessible and would perhaps encourage wider participation.

.

Site Name	Classification	Reason for submission	Condition	Recognised status
Reform Bridge, Acorn Patch	Industrial	Status	Good	HER ref no: 13795
Old warehouse, Lydney Pill	Transport	Status	Poor	Visible on 1880 OS map
Upper Forge, Lydney (Plate 3)	Industrial	Status	Poor	HER ref no: 5660
Iron Bridge tunnels, Drybrook	Transport	Status	Good	Assumed to be part of HER ref no: 20806- Former Mitcheldean and FOD Junction Railway
Blue Rock Trail, Drybrook	Transport	Personal resonance	Good	Assumed to be part of HER ref no: 5704 (Blue Rock Tunnel)
Pillowell Viaduct	Transport	Status	Unknown	HER ref no: 5702
Soudley Packhorse Bridge	Transport	Condition	Assessment required	Not found
Moseley Tunnel	Transport	Environmental	Unknown	Assumed to be part of HER ref no: 5702- Severn and Wye Valley railway (disused)
Cast Iron Marker Plate, Ellwood	Transport	Status	Assessment required	One of 9- Others Grade II listed
Cast Iron Marker Plate, Blakeney	Transport	Status	Assessment required	One of 9- Others Grade II listed
New Mills, Bay Head, Lydney	Industrial	Personal resonance	Assessment required	HER ref no: 20969/20970
Littledean Hill, Cinderford	Unknown	Unknown	Unknown	N/A
Iron Mine, Plump Hill	Mining	Status	Good	Possibly related to HER ref no's: 27464 and 27465 (Post-med ironstone workings)
Lined Stream Bed, Soudley to Ruspidge	Transport	Condition	Assessment required	Not found
Two Bridges, Cinderford	Transport	Status	Good	Not found
Welshbury Slag and Pot	Unknown	Unknown	Unknown	N/A
Lydney Chimney	Industrial	Condition	Poor	HER ref no:21584

Cheny Bottom Scowle Aqueduct (Plate 4)	Industrial	Condition	Poor	Assumed to be part of HER ref no: 5629
Trafalgar Colliery	Mining	Status	Assessment required	HER ref no: 9989
Coleford-Monmouth Tramroad	Transport	Condition	Poor	HER ref no: 20425
Oakwood Tramroad	Transport	Personal resonance	Assessment required	HER ref no: 15249
Blackpool Bridge	Transport	Unknown	Good	HER ref no: 5700
Howbeech	Transport	Unknown	Good	HER ref no: 15584 (Stone lined stream)
Lime Kilns, Pitching Green	Industrial	Unknown	Good	HER ref no: 12024
Swanpool Bridge, Swanpool Wood	Transport	Unknown	Good	HER ref no: 9942
Flour Mill Colliery	Mining	Status	Good	HER ref no's: 36235, 36236, 36237, 36238
Remnants of Stone Cutting Plant at Parkend	Industrial	Condition	Poor	HER ref no: 5829
Findall Iron Mine Air Shaft	Mining	Condition	Good	HER ref no: 9932
Edge Hills Lime Kilns	Industrial	Condition	Assessment required	HER ref no: 16221

Table 4: Sites submitted for Built Heritage

4 Yorkley and Tomlin Archaeology Field School

4.1 Background

The sites identified to provide the focus for the *Field School* were a sub-rectangular enclosure located on the edge of the settlement of Yorkley Slade (Figure 2; SO6407/01; GHER 43385), and the nearby remains of the deserted settlement of Tomlin (not recorded on the Gloucestershire HER or as a lidar feature). The sites were identified in consultation with the Forestry Commission and Jon Hoyle (Gloucestershire County Council Archaeology Service).

The sub-rectangular enclosure at Yorkley shows clearly on lidar mapping and is readily visible as an earthwork bank. Most of the enclosure lies in an area of grassland located between the settlement at Yorkley Slade and mixed woodland, with only the north-eastern side lying under trees. It is one of four morphologically comparable sites identified by lidar and walkover survey (Hoyle 2011, 26-27) including one at Ruardean (SO6316/07) which was investigated in 2011. That investigation demonstrated the Ruardean enclosure to be Roman in date and it was postulated that this and the other sites may represent early Roman fortlets constructed with the explicit function of guarding, monitoring or overseeing iron ore production during the early years of the Roman conquest (Hoyle 2013, section 2).

Within the wider landscape of the Yorkley enclosure are a number of other sites including a deserted settlement at Tomlin, located in plantation woodland *c*.500m west of the enclosure. This settlement was not recorded on the Gloucestershire HER but is documented at least as far back as the 18th century. It is present on 19th century Ordnance Survey maps but was believed to be abandoned by the 1920s.

The two sites had the advantage of being 'inclusive' in respect of the existing community volunteer group, as they were not located in one of the four pilot areas that the volunteer teams had been investigating during the lidar validation survey so would not promote the work of any one group or area.

4.2 Aims and objectives

The general aim of the Field School was to provide training for community volunteers in archaeological techniques and an opportunity to then practice those skills. It would also provide an ideal opportunity to promote the work of the project to the wider community, highlighting the value of *'Unearthing our Heritage*' and supporting the development of proposals for the main delivery stage of the *Foresters' Forest*. The work would also enable a greater understanding of the potential Roman enclosure at Yorkley and the deserted settlement at Tomlin to be achieved.

The Field School was designed with two primary aims and objectives:

- To provide further training and engagement opportunities for the community volunteers who have supported delivery of the lidar validation survey, thus extending the skill set of this group of volunteers and providing them with an opportunity to practice those skills; specifically excavation and recording (written, drawn and photographic) of archaeological deposits, finds and environmental processing, and survey.
- To engage with the wider community of the area, thus raising public understanding and awareness of the great potential and wealth of archaeological and heritage features surviving within the Forest.

The specific archaeological aims and objectives for the *Yorkley Enclosure* were:

- To determine the status/date of the enclosure
- To identify whether the bank contains any structural features or information to support understanding of the construction, use and abandonment of the enclosure?

- To identify and record the form of the ditches, and determine whether their infilling sequence has the potential to reveal anything about the origins, use and abandonment of the enclosure?
- To determine whether the bank or ditch contain or seal any datable or environmentally significant material?
- To determine whether the infill of the ditch provides any information on the environmental history of the enclosure or its immediate surroundings?
- To establish whether there any visible features in the immediate vicinity which may relate to this feature?
- To examine the internal area of the enclosure to determine whether internal structures are present and as far as possible to determine their character and function.
- To examine to what extent has the survival of these features been compromised by the long-term woodland cover on the site and inform the development of appropriate management practices which best support the long-term preservation of the site?

The specific archaeological aims and objectives for the settlement at *Tomlin* were:

- To produce a baseline record (survey, drawn, written and photographic) of the extent and character of the above ground remains of the settlement (earthworks and upstanding building/structural remains) and compare these with details shown on historic maps;
- To use the record achieved to begin to develop a better understanding of the form and character of the settlement and associated working;
- To collect surface finds which may support understanding of the date of the settlement (specifically the date of abandonment);
- To examine to what extent has the survival of these features been compromised by the long-term woodland cover on the site and inform the development of appropriate management practices which best support the long-term preservation of the site?
- To generate interest in the settlement and encourage researchers to investigate documentary records which may further understanding of the settlement, its inhabitants and history.

4.3 Methods

4.3.1 Fieldwork strategy

A scoping visit was undertaken on 1st April 2016 and a detailed proposal for the Field School was prepared by Worcestershire Archaeology (WA 2016). The field school was undertaken over eight days between Friday 13th and Monday 23rd May 2016, with backfilling taking place on Tuesday 24th May. The works conformed to guidelines issued by the *Chartered Institute for Archaeologists* (CIfA 2014).

Geophysical (magnetometer) survey was considered for use during the Field School but was not considered to be appropriate for this project due to the potential for magnetic disturbance caused by overhead power lines crossing the Yorkley enclosure site, difficult terrain at Tomlin, and the likely presence of buried magnetic material (iron work and slag). It was also anticipated that the types of features expected to be present in the internal part of the enclosure site were not likely to be detected by resistance survey, given the nature of the underlying geology.

Yorkley enclosure (Figures 12-14)

One trench, measuring approximately 15m by 1.75m, was excavated across the bank and ditch of the enclosure feature. Five test pits, measuring 1m by 1m were excavated in the internal part of the

enclosure. Test pit 1 was extended by 0.5m due to the presence of an archaeological feature. Due to a land ownership issue the test pits were concentrated in the eastern part of the enclosure.

All excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard Worcestershire Archaeology practice (WA 2012) by volunteers and Worcestershire Archaeology staff. On completion of excavation, the trench and test pits were reinstated by replacing the excavated material.

Tomlin (Figure 15)

A small amount of documentary research was undertaken in advance of the *Field School*. This included assessment of historic Ordnance Survey maps (OS 1878b, 1901a and 1920), the Victoria County History (Baggs and Jurica 1996), checking online databases of local and national archives, and other local websites. During the Field School a number of volunteers who had access to Ancestry.com identified the census returns for Tomlin, as well as a number of other documents including birth, marriage, death and will documents.

Due to forestry activities taking place during the Field School access to Tomlin for archaeological works was only possible during the weekend days. The presence of Japanese Knotweed on the site also meant it was not possible to undertake any excavations or test pitting. Archaeological activity here was limited to an initial rapid walkover survey, followed by a photographic survey and comparison of the surviving remains with the first edition OS map. Due to the access difficulties and time constraints the latter survey only covered the eastern half of the settlement area.

4.3.2 Structural analysis and artefact and environmental methodology

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources. A list of contexts is presented in Appendix 5 and an inventory of the archive information in Appendix 6.

Artefact assessment methodology by Rob Hedge

The artefact recovery policy conformed to standard Worcestershire Archaeology practice (WA 2012; appendix 2).

Method of analysis

All hand-retrieved finds were examined. They were identified, quantified and dated to period. A terminus post quem date was produced for each stratified context. The date was used for determining the broad date of phases defined for the site. All information was recorded on a Microsoft Access database.

Processing, sorting and quantification of the material was undertaken by project volunteers, work experience students and trainee archaeologists, under the supervision of a finds archaeologist.

The pottery and ceramic building material was examined under x20 magnification and referenced as appropriate by fabric type and form according to relevant fabric reference series.

Discard policy

No finds will be discarded without prior agreement from the receiving museum, in this case the Dean Heritage Centre. Decisions on retention and discard will be undertaken in consultation with the Dean Heritage Centre and the landowner, the Forestry Commission.

Environmental sample processing and analysis by Liz Pearson

Sampling policy

Samples were taken according to standard Worcestershire Archaeology practice (WA 2014). A total of two samples (each of up to 40 litres) were taken from the site.

Processing and analysis

The samples were processed by flotation using a Siraf tank. The flots were collected on a 300mm sieve and the residue retained on a 1mm mesh. This allows for the recovery of items such as small animal bones, molluscs and seeds.

The residues were scanned by eye and the abundance of each category of environmental remains estimated. A magnet was also used to test for the presence of hammerscale. The flots were scanned using a low power MEIJI stereo light microscope and plant remains identified using modern reference collections maintained by Worcestershire Archaeology, and a seed identification manual (Cappers *et al* 2012). Nomenclature for the plant remains follows Stace (2010).

Charcoal was examined under a low power MEIJI stereo light microscope in order to determine the presence of oak and non-oak charcoal. Identifications, where possible using the low power microscope, were carried out using reference texts (Hather 2000).

Discard policy

Remaining sample material and scanned residues will be discarded after a period of six months following submission of this report unless there is a specific request to retain them.

4.4 Results

4.4.1 Volunteer training, feedback and outreach

Volunteers

Nineteen volunteers signed up to participate in the Field School although one of these was unable to attend. One additional volunteer signed up during a visit to the site, giving a total of nineteen volunteers. The volunteers were all from the Forest of Dean or from the immediate vicinity (eg Chepstow), with the exception of one member of WAAS staff who volunteered for one day. Eleven of the volunteers had previously participated in the lidar validation survey. The volunteers' previous excavation experience ranged from a former professional archaeologist and five members of Dean Archaeology Group, to a number of volunteers for whom this was their first excavation.

Feedback was mostly positive and eight volunteers signed up for additional excavation days and/or for backfilling the excavation trench. A total of 548.25 hours (171 unskilled and 377.25 skilled) were undertaken by the volunteers during the Field School.

At the end of the Field School questionnaires were sent out to each volunteer and nine feedback forms were returned (47% sample; Appendix 7). All rated the Field School as either Very Good or Good:

Was the Field School:

Very Good 89%	Good 11%	OK 0%	Poor 0%	Very Poor 0%

For every questionnaire respondent the experience of the Field School proved to be enjoyable:

'Thank you to the team…they were very patient, helpful and great fun'

'All the team were great, and a good laugh'

All but one of the respondents directly indicated they had learned something new:

'[Gained] experience of archaeological techniques and a little more knowledge of our local history'

'Learning how to record, photograph, process finds and do more than just dig'

When asked what they most enjoyed, some respondents also stressed the social and community benefits of the project:

'I met people from all walks of life'

'…meeting other people'

Some improvements to the Field School were suggested including:

'I would have like to see examples of pots that we might find before we started digging'

'provide examples of typical [drawn] sections'

Two respondents also indicated that they would like the Field School to have run for longer:

'longer timescale of three weekends instead of two'

'more of it and longer!'

The legacy benefits of the project were further highlighted when up to eight people joined Dean Archaeology Group following the Field School *(*Phil Riches pers comm).

Schools, public open day and other outreach

Approximately 83 pupils in Years 3-6 (KS2) from Yorkley Primary School and 54 KS2 pupils from Lydbrook Primary School visited the Field School. Each class was given a guided tour of the site to learn about the enclosure site and the excavations, and shown the finds, some of which they were able to handle. They were also shown and handled various artefacts from the WAAS teaching collection to learn about other types of archaeological finds and historical periods (eg prehistoric, Roman).

A school visit to Yorkley Primary School was also undertaken. Children from Reception and Years 1/2 (KS1) were shown and handled finds from the WAAS teaching collection, and learned about what types of activities people were doing in the Forest in the past (eg building fortifications, making iron).

A formal open day was held on Saturday 21st May and despite poor weather conditions approximately 50 people attended. Visitors were given a tour of the enclosure site and learned about the excavations, the lidar survey and the wider Foresters' Forest programme.

Throughout the Field School local residents, walkers and other passers-by frequently stopped to enquire about the purpose of the excavations and approximately 20 people visited regularly to get updates on progress. At least two visitors expressed disappointment that they had not heard about the Field School sooner and been able to actively participate.

4.4.2 Archaeological results

Excavation trench (Figs 12-14)

Pre-bank deposits (Plate 5)

The earliest deposit identified under the bank was a light orangey brown silty sand (1010). Although it was fairly sterile and yielded no finds it appears to be a buried subsoil. This deposit was not fully excavated, although at the northern end of the trench a possible natural deposit was exposed below the deposit. Above layer (1010) and sealed by the bank was a buried turf or topsoil layer (1008). It consisted of a light to mid-brown silty sand with rare charcoal flecks, which measured up to 0.22m in depth. Smelting slag was recovered from this deposit.

The bank (Plate 5)

The bank was formed of deposits (1002), (1004) and (1005/1009). Bank deposit (1002) was formed of a light orange brown silty sand with rare charcoal, consistent with initial upcast topsoil, subsoil and natural from the excavation of the enclosure ditch (1016). It measured 0.56m in depth and 3.35m in width and yielded two pieces of smelting slag. Bank deposit (1004) lay above (1002) and was formed of a sterile light pink-brown silty sand with frequent large pieces of sandstone. No finds were recovered from this deposit. This deposit appears to represent upcast natural deposits from the excavation of the basal portion of ditch (1016).

Contexts (1005/1009) were formed of a mottled orangey mid brown sandy silt with rare charcoal flecks, on the northern side of the bank above deposit (1004). This deposit continued to the north into the enclosure at least as far as the edge of the trench and may be a result of slumping or dumping of material on the inside of the bank or a subsoil/occupation horizon. Smelting slag was recovered from this deposit.

The ditch (Plate 6)

The ditch (1016), cut the undisturbed sandstone brash bedrock (1017). It measured approximately 1.0m in depth and 4.3m in width and was filled by eight contexts. Its sides sloped at an angle of approximately 45º towards a flat base c1.3m wide. The earliest fill of the ditch (1015) was a mid-brownish grey sandy silty which yielded eight sherds of medieval pottery, as well as slag and fired clay. It measured up to 0.18m in depth and is interpreted as the primary silting in the base of the ditch. Above this deposit was mid brownish orange silty clay (1014) and a mid brownish orange sandy loam (1011). Both these deposits were located on the northern side of the bank and appeared to be a result of slumping or weathering of material on this side of ditch. The relationship between slumping (1011), the bank (1002), and the sealed deposits under the bank (1008) and (1010) was unclear, possibly as a result of the slumping.

Above the slumping deposits was a fill (1013), which was formed of a mid orangey brown silty clay up to 0.52m in depth and 2.2m in width. It contained two sherds of medieval pottery, as well as tile, slag and a piece of furnace, and appeared to have been formed by silting. This deposit was sealed by (1007/1012) which were formed of a mid orangey brown sandy silt, and only distinguishable by a larger quantity of stone in the latter deposit. Fill (1007) contained modern pottery, tile and glass. Fill (1006) a dark brown slightly clayey silt which measured 0.1m in depth, and also yielded modern pottery and glass. The final fill of the ditch was a mid brownish black loamy clay (1003) which measured up to 0.24m in depth and yielded modern pottery, glass as well as a quantify of slag and furnace material.

Both the bank and the ditch were sealed by a thin topsoil turf layer which measured up to 0.14m in depth.

Test Pit 1 (Figs 12-14; Plate 7)

The earliest deposit identified was a friable mid brownish yellow clayey sand (106) which was located 0.33m below ground level. This deposit was not excavated and yielded no finds, but occasional charcoal flecks were visible and may be a buried subsoil. It was cut by a pit like feature (104) which was partially exposed in the north-eastern corner of the test pit. The test pit was extended by 0.5m although the full extent of the feature was still not revealed. The pit measured approximately 0.35m in depth and contained medieval pottery, slag and furnace base (103) in the base of the feature. Parts of the pit also appeared to be roughly lined with irregular ridges of compacted clay deposit (105), which also contained medieval pottery. The upper fill of the pit was filled with a brownish yellow clayey sand (102) which also yielded medieval pottery, slag and furnace material. Although only partially excavated in within the extents of the test pit, pit (104) appears reminiscent of shaft furnaces identified at Ariconium in Herefordshire (Jackson 2012, 189-190).

Test Pits 2 – 5 (Figs 12-13)

Test Pits 2 to 5 contained a generally similar sequence of deposits. The earliest deposits that were identified were typically mid brownish yellow clayey sands or orangey brown clayey sands. Although these deposits were moderately sterile with only occasional charcoal flecks visible they do not appear to have been natural in origin and, like deposit (106), may be evidence of a buried subsoil, which predates the medieval features. Finds including medieval pottery, slag and furnace material were recovered from these test pits but no finds were related to features.

In Test Pit 3 a possible stakehole (304) was identified (Plate 8). It measured up to 0.25m in width and 0.16m in depth and was filled by a mid orangey brow silty clay. No finds were recovered from this deposit and a sample taken from the feature provided little further information.

Tomlin (Figure 15)

The Victoria County History records that 'there were at least three cottages in the early 1770s but only a single abandoned house in 1958' (Baggs and Jurica 1996). Historic OS mapping (OS 1878b and 1901a) illustrate three roofed buildings in use at Tomlin, surrounded by a series of enclosure boundaries and a number of tracks and paths. Two of the enclosures are illustrated as orchards and a well is also recorded to the north of the settlement. Beyond this, the entire settlement is recorded as surrounded by woodland. The Lloyd George Survey of Land Values (1910) records two plots at Tomlin both owned and occupied by Hartley James; a house and garden with a gross value of £9 and land measuring just over one and half acres valued at £2 14s (Glos 1909 Survey, a and b). The 1920 OS map illustrated all three buildings as unroofed, indicating the settlement was abandoned between 1910 and 1920.

Initial site survey of Tomlin revealed that the three buildings illustrated on the historic mapping survive as a series of very overgrown walls. The settlement appears to have been constructed on two roughly rectangular shaped terraces, located on the side of an east facing slope. The topography means that features such as walls and small banks are not easily identifiable on the lidar survey. The western building (S1) is situated on the upper terrace, while the southern (S2) and eastern (S3) buildings are located on the lower terrace. Buildings S1 and S2 have been built into the hillside. Building S1 was not surveyed in detail but building S2 measures approximately 8m by 2.5m with the rear walls surviving to approximately 0.8m in height, with the front walls only visible as low banks, *c*. 0.2m in height (Plate 9).

Building S3 appears better preserved with walls surviving up to 0.5m in height (Plates 10-12). Various divisions within this building are also visible and these largely seem to reflect the internal walls recorded by historic mapping. The remains of a small walled structure, possibly an animal pen or store, is visible to the immediate west of the house (Plate 13). This structure is not recorded on any available historic maps.

The enclosure boundaries recorded by the historic mapping in the vicinity of the three buildings are also well represented, surviving either as low banks or overgrown walls. The remains of a track, illustrated on historic maps, between the upper and lower terraces is visible to the west of S3 (Plate 14). The well, which is illustrated on historic maps to the north, is only represented by a damping patch of ground which looks like the remains of a dried spring (Plate 15). To the north of the upper terrace there is evidence of quarrying (Plate 16).

Documentary research of census returns and parish records undertaken by volunteers identified that Hartley James was born in Newland Parish on 22nd March 1829 and was the son of James James (born *c*.1796) and Maria Stephens (born *c*.1800), who married on the 7th August 1826. In 1841 the family were living together at Tomlin and Hartley was one of (at least) seven children, he had an older sister (Caroline-14) and five younger siblings (Alvan-10, Rhoda-7, James-5, Timothy-3 and Amos-2 ?weeks).

The 1851 census records that James and Maria had had another child called Emmily (now 6), although Caroline (now 24) had left Tomlin. Hartley is recorded as a wood cutter. A second couple, John Fisher (53) and his wife Ann (60), are also recorded living at Tomlin in 1851, although they have not been traced on other returns and it is unclear how long they lived at Tomlin.

By 1861 both Hartley and his father are recorded as wood cutters and only Hartley and his two youngest siblings (Amos and Emmily) are still at Tomlin with their parents. Hartley's father died on 27th September 1865, and left £100 in his will. In 1871 Hartley's mother Maria (now 71) is recorded as the head of the family with only Hartley (now 41) and his 23 year old cousin Emma ?Hablam, a domestic servant, living with her.

In 1881 Hartley is recorded as the head of the family and now married to Elizabeth (born c.1835); later census returns indicate they married around 1875. Hartley and Elizabeth were recorded at 'Tomlin House' in 1891, and by 1901 Hartley was retired and their niece, Hilda Morris (born c.1892), was living with them. The 1911 census records the three still living together at Tomlin in a four roomed dwelling and that Hilda was working at home as a dressmaker. Hartley died at the age of 84 on 25th March 1913. He left £471 in his will to various beneficiaries including Elizabeth and Hilda.

Artefact analysis by Rob Hedge

The artefactual assemblage recovered is summarised in Tables 5 and 6. A total of 3325 artefacts weighing 84.9kg were retrieved during the course of the excavation. The bulk of the assemblage by weight comprised iron slag and furnace fragments. 1077 sherds of pottery weighing 16.9kg were retrieved from the excavated area. In addition, fragments of tile, brick and vessel glass were recovered. The group came from 25 stratified contexts and could be dated from the Roman period onwards (see Table 1), with the majority pertaining to medieval occupation and 19th/early 20th century refuse disposal. Using pottery as an index of artefact condition, this was generally poor: the majority of medieval sherds displayed high levels of abrasion, and the average sherd size was below average. The post-medieval and modern pottery was in much better condition, reflecting the robust nature of the wares present and the function of the site as a primary dumping ground for domestic refuse.

Period	Material class	Material subtype	Object specific type	Count	Weight(g)
Roman	ceramic		pot	2	6
Roman/medieval	ceramic		tile	1	14
medieval	ceramic		fired clay	5	60
medieval	ceramic		furnace	166	3804
medieval	ceramic		pot	55	522
medieval	slag		fuel ash slag	2	88
medieval	slag	slag(fe)	smelting slag	1469	51451
post-medieval	ceramic		pot	1	13
post-medieval	glass		vessel	53	836

Period	Material class	Material subtype	Object specific type	Count	Weight(g)
post-medieval/modern	ceramic		brick	2	736
post-medieval/modern	ceramic		brick/tile	23	1002
post-medieval/modern	ceramic		tile	4	729
post-medieval/modern	stone		tile	50	792
modern	ceramic		brick	6	1132
modern	ceramic		brick/tile	7	841
modern	ceramic		clay pipe	6	5
modern	ceramic		pot: misc fabrics	23	473
modern	ceramic		pot: earthenwares	430	11153
modern	ceramic		pot: late stonewares	98	1474
modern	ceramic		pot: whitewares	463	3291
modern	ceramic		tile	12	670
modern	glass		lens	1	118
modern	glass		vessel	249	1641
modern	metal	aluminium	snuff tin	1	1
modern	metal	aluminium	vessel	1	5
modern	metal	copper alloy		1	1
modern	metal	iron		50	936
modern	metal	iron	shoe	1	106
modern	organic	leather		1	61
modern	slag		fuel ash slag	5	74

Period	Material class	Material subtype	Object specific type	Count	Weight(g)
modern	slag	slag(fe)	smelting slag	1	11
modern	stone		brick	2	267
modern	stone		brick/tile	1	1094
modern	stone		tile	1	1
undated	ceramic		clay	2	1
undated	ceramic		pot	5	13
undated	glass			1	1
undated	metal	iron		14	389
undated	metal	iron	nail	2	25
undated	organic	charcoal		23	233
undated	organic	charcoal	charcoal	1	1
undated	organic	wood		71	245
undated	stone			12	407
undated	stone	sandstone		1	267
			Totals:	3325	84990

Table 5: Quantification of the finds assemblage

Finds by period

All pottery sherds have been grouped and quantified according to broad fabric type (Table 6). Diagnostic form sherds were present and could be dated accordingly; the remaining sherds were datable by fabric type to their general period or production span. Where mentioned, all specific forms are referenced to the type series within the report for Deansway, Worcester (Bryant 2004).

Period	Pottery type	Count	Weight(g)
Roman	Severn Valley Ware	2	6
medieval	Local quartz and iron tempered cooking pot	55	522
post-medieval	Miscellaneous post-medieval fabrics	1	13
modern	Miscellaneous modern fabrics	23	473
modern	Earthenwares	430	11153
modern	Stonewares	98	1474
modern	Whitewares	463	3291
undated	pot	5	13
	Totals	1077	16945

Table 6: Quantification of the pottery by period and fabric-type

Roman

Pottery

Only two sherds of Roman pottery were recovered from the site, both abraded body sherds of oxidised Severn Valley Ware (Worcs fabric 12), of 1st-4th century date.

Discussion

The presence of Roman pottery in these quantities is consistent with a background scatter of material, originating from settlement or industrial activity of Roman date in the surrounding area.

Medieval

Pottery

A total of 55 sherds of medieval pottery were recovered from the site. Condition was generally poor, with sherds mostly appearing abraded and fragmentary: this is likely to be largely due to the coarse nature of the pottery itself.

Few of the sherds were diagnostic, though many exhibited sooting and blackening characteristic of medieval cooking pots, and all appeared hand-made. Four rim sherds were of a distinctive slightly thickened, everted rim form with a lid-seat, from vessels around 180mm in diameter: these correspond closely to the form identified at Deansway as 'Type 3' cooking pots, emerging in the 12th century and declining by the mid-14th century, but most commonly occurring within 13th century deposits (Bryant 2004, 290).

Whilst there is some variation between sherds in terms of colour and composition, all are thought to belong to the same fabric. It bears similarities to the 'Forest of Dean sandstone-tempered ware' identified by Vince (1984), and to fabric A9 in the Monmouth fabric series (Clarke 2011), as well as to12th/early 13th century quartz-tempered fabrics identified by Griffin (2014) at Highnam and thought to be local products. However, it is sufficiently distinctive to warrant description here:

A hard fabric with hackly fractures, it has a light to mid grey core and surfaces ranging from dull light brown to bright red-brown.

Inclusions comprise abundant sub-1mm rounded grains of white, grey and occasionally clear quartz, with sparse angular quartz grains up to 2mm in diameter. Occasional rounded red iron ore fragments up to 2mm are visible, and some sherds display irregular-shaped vesicules which may be indicative of the original presence of other inclusions.

Vessels appear to be handmade, and many are heavily sooted. The only identifiable form is a cooking pot of c180mm diameter with a thickened, everted rim with a lid-seat. Two of the rim sherds have wipe marks indicating that the rims may have been finished on a slow wheel (D Hurst, pers. comm). Several sherds indicate sagging bases.

Overall, a 13th century date is considered most likely for this assemblage, but a date elsewhere in the range of mid-12th to14th century is also possible.

Artefacts associated with iron production

Over 50kg of iron smelting slag was retrieved from the excavation, and quantified. In addition, 3.8kg of vitrified and baked clay furnace material was identified, concentrated within test pit 1 and indicating the presence of a bloomery furnace on the site.

Within the constraints of the project, only a brief examination of the slag was possible. The assemblage is consistent with bloomery smelting in a small slag-tapping furnace (Crew 1995, 2-3), with large quantities of slag prills, furnace slag and tap slag present. Only a couple of fragments of fuel ash slag were recovered, which is consistent with primary smelting sites. Among the material recorded as slag, there appears to be small quantities of raw and roasted ores, suggesting some selective sorting of raw material on the site.

Other artefacts

A single abraded fragment of building material recovered from ditch fill (1013) is likely to be medieval in origin, although a Roman date cannot be ruled out.

Discussion

The occurrence of medieval pottery within basal fill (1015) and silting fill (1013) of the enclosure ditch is a good indication that the feature is medieval in origin.

Unfortunately slag material is not intrinsically dateable, and the bloomery smelting method is typical of both Roman and medieval ironworking in this region. However, the association of medieval pottery with the slag and furnace material-rich deposits in test pit 1 suggest a medieval origin, between the mid-12th and early 14th century. Although abraded, the presence of large rim sherds within (103) and (105) is likely to indicate primary deposition of the pottery on site, contemporary with and deriving from human activity associated with the industrial processes.

Ironworking at numerous sites in the forest in this date range is attested by a number of documentary sources (Baggs and Jurica 1996), with some under crown control and others operating privately under license.

Smelting slag recovered from pre-bank deposit (1008) may represent medieval ironworking on the site prior to the construction of the ditch and bank, although an earlier origin cannot be ruled out.

Post-medieval and modern (18th to early 20th century)

Pottery

Distributed across the site, but concentrated within the depression overlying the infilled ditch, were 1020 sherds of later post-medieval and modern pottery, weighing 16.4kg.

Coarse earthenwares, both glazed and unglazed and in a variety of red and buff fabrics, accounted for 42% of the later pottery by count and 68% by weight. A wide range of typical domestic forms including jars and pancheons were present. Although these wares are extremely long-lived and difficult to date accurately, with the exception of a small number of probably 18th century examples, they appear to be mostly 19th century in date, and contemporary with the rest of the assemblage.

Whitewares accounted for 45% of the later pottery by count and just 20% by weight, reflecting the more delicate nature of these wares. Plain and transfer-printed stone china of 19th and early 20th century date accounted for the majority, with small quantities of hand-painted stone china.

Late British stonewares were also well-represented, at 10% by count and 9% by weight, including late 19th century preserve jars, ginger beer and blacking bottles.

Glass

Domestic vessel glass, mostly of 19th and early 20th century date, was also present in large quantities. Several vessel fragments appear earlier and probably represent late 18th century refuse.

One notable early 20th century find was a complete 'Kenyon Serilight' red lens from a road/rail warning lamp.

Other artefacts

Other typical domestic artefacts include undiagnostic clay tobacco pipe fragments, ceramic building material including brick and roof tile, and small quantities of fuel ash slag.

Discussion

The condition of the post-medieval and modern material was varied: although many sherds were large and unabraded suggesting primary deposition in the ditch, others were in poor condition and some were burnt, suggesting at least some of the material had been dumped on the site from

midden deposits elsewhere. All is considered likely to relate to domestic occupation in the near vicinity, probably dumped over a long period spanning the 19th and early 20th centuries.

Site dating

context	material class	material subtype	object specific type	Count	weight(g)	period	TPQ date range
100	slag	slag(fe)	smelting slag	98	1973	medieval	1800 - 2000
	ceramic		furnace	4	23	medieval	
	ceramic		pot	1	15	modern	
101	ceramic		pot	2	11	medieval	1125 - 1325
	slag	slag(fe)	smelting slag	524	15345	medieval	
	ceramic		furnace	63	1120	medieval	
	stone	sandstone		1	267	undated	
102	ceramic		pot	6	33	medieval	1125 - 1325
	ceramic		pot	1	5	Roman	
	slag	slag(fe)	smelting slag	224	4475	medieval	
	ceramic		furnace	39	770	medieval	
103	ceramic		pot	10	152	medieval	1125 - 1325
	slag	slag(fe)	smelting slag	295	5414	medieval	
	organic	wood		3	8	undated	
	stone			2	12	undated	
	ceramic		clay	2	1	undated	
	ceramic		furnace	41	887	medieval	
105	organic	wood		1	1	undated	1125 - 1325
	ceramic		pot	5	104	medieval	
201	ceramic		pot	2	4	medieval	1900 - 2000
	slag	slag(fe)	smelting slag	15	1510	medieval	
	metal	aluminium	snuff tin	1	1	modern	
301	metal	iron	nail	2	25	undated	
302	ceramic		pot	7	26	medieval	1125 - 1325
	slag	slag(fe)	smelting slag	28	592	medieval	
	ceramic		pot	1	4	undated	
	ceramic		pot	1	1	Roman	
	slag	slag(fe)	smelting slag	1	1	medieval	
401	ceramic		pot	7	76	medieval	1125 - 1325
	slag	slag(fe)	smelting slag	95	2180	medieval	
	ceramic		furnace	4	175	medieval	
	ceramic		pot	1	13	post-medieval	
402	slag	slag(fe)	smelting slag	31	1197	medieval	1800 - 2000
	ceramic		furnace	1	1	medieval	
	ceramic		pot	1	1	modern	
500	slag	slag(fe)	smelting slag	1	10	medieval	2000 - 2015
	metal	aluminium	vessel	1	5	modern	
501	ceramic		pot	2	6	medieval	1125 - 1325
	slag	slag(fe)	smelting slag	11	330	medieval	
	slag	slag(fe)	smelting slag	11	330	medieval	
502	ceramic		pot	2	7	undated	
1000	ceramic		pot	2	2	medieval	1800 - 2000
	slag	slag(fe)	smelting slag	45	2245	medieval	
	ceramic		furnace	3	182	medieval	
	glass		vessel	230	1589	modern	

context	material class	material subtype	object specific type	Count	weight(g)	period	TPQ date range
	ceramic		brick	2	736	post-medieval/modern	
	ceramic		tile	2	74	post-medieval/modern	
	ceramic		brick/tile	2	2	post-medieval/modern	
	stone		tile	27	334	post-medieval/modern	
	slag	fuel ash slag		1	1	modern	
	glass		vessel	5	35	modern	
	ceramic		pot	2	155	modern	
	ceramic		pot: earthenwares	237	5321	modern	
	ceramic		pot	2	2	undated	
	ceramic		pot: late stonewares	77	1130	modern	
	ceramic		pot: whitewares	219	1010	modern	
	stone		tile	1	11	post-medieval/modern	
	ceramic		tile	12	670	modern	
	glass		vessel	11	11	modern	
	metal	copper alloy		1	1	modern	
	ceramic		clay pipe	5	4	modern	
	ceramic		brick	1	160	modern	
	organic	leather		1	61	modern	
	glass		lens	1	118	modern	
	organic	wood		53	213	undated	
	slag	fuel ash slag		1	5	medieval	
	metal	iron		31	840	modern	
	slag	slag(fe)	smelting slag	11	1014	medieval	
1001	ceramic		pot	10	266	modern	1800 - 2000
	ceramic		pot	1	3	medieval	
1002	slag	slag(fe)	smelting slag	2	610	medieval	?1125 - 1325
	slag	slag(fe)	smelting slag	10	1149	medieval	
	ceramic		furnace	9	510	medieval	
	stone		tile	21	312	post-medieval/modern	
	ceramic		brick/tile	27	2585	post-medieval/modern	
	ceramic		pot	3	3	modern	
	glass		vessel	53	836	post-medieval	
	ceramic		tile	2	655	post-medieval/modern	
1003	stone		tile	1	135	post-medieval/modern	1800 - 2000
	slag	fuel ash slag		1	83	medieval	
	metal	iron		14	389	undated	
	ceramic		pot: whitewares	243	2272	modern	
	ceramic		pot: earthenwares	193	5832	modern	
	ceramic		clay pipe	1	1	modern	

context	material class	material subtype	object specific type	Count	weight(g)	period	TPQ date range
	slag	slag(fe)	smelting slag	1	11	modern	
	slag	fuel ash slag		4	73	modern	
	organic	charcoal		23	233	undated	
	metal	iron	shoe	1	106	modern	
	metal	iron		19	96	modern	
	ceramic		brick	5	972	modern	
	stone			10	395	undated	
	glass		vessel	2	5	modern	
	ceramic		brick	2	267	modern	
1006	ceramic		brick/tile	2	350	modern	1800 - 2000
	glass			1	1	undated	
	ceramic		furnace	1	8	medieval	
	ceramic		pot: late stonewares	21	344	modern	
	organic	wood		1	9	undated	
1007	ceramic		pot	1	22	medieval	1800 - 2000
	slag	slag(fe)	smelting slag	1	739	medieval	
	ceramic		pot	6	33	modern	
	stone		tile	1	1	modern	
	glass		vessel	1	1	modern	
1008	slag	slag(fe)	smelting slag	24	1770	medieval	?1125 - 1325
1009	slag	slag(fe)	smelting slag	17	8300	medieval	?1125 - 1325
1011	ceramic		pot: whitewares	1	9	modern	1800 - 2000
1013	slag	slag(fe)	smelting slag	4	1380	medieval	1125 - 1325
	ceramic		furnace	1	128	medieval	
	ceramic		pot	2	11	medieval	
	organic	charcoal	charcoal	1	1	undated	
	ceramic		tile	1	14	Roman/medieval	
1014	slag	slag(fe)	smelting slag	1	37	medieval	?1125 - 1325
	organic	wood		1	1	undated	
1015	ceramic		fired clay	5	60	medieval	1125 - 1325
	ceramic		pot	8	72	medieval	
	slag	slag(fe)	smelting slag	20	850	medieval	
	organic	wood		12	13	undated	

Table 7. Summary of context dating based on artefacts grouped in phase order

Recommendations

Further analysis and reporting

The following recommendations are made with regard to further work on the artefacts considered as part of this report.

- A more detailed assessment of slag types and quantities may help to refine our understanding of the dating and character of medieval ironworks in the Forest of Dean

Environmental analysis by Elizabeth Pearson

Results

The results are summarised in Tables 8-10. Uncharred remains, consisting of mainly root and leaf fragments, are abundant but are assumed to be modern and intrusive as they are unlikely to have survived in the soils on site for long without charring or waterlogging.

Context	Sample	Feature type	Fill of	Period	Sample volume (L)	Volume processed (L)	Residue assessed	Flot assessed
103	1	Pit/shaft furnace	104	Medieval (12^{th} – 14^{th} century)	5	5	Yes	Yes
303	2	Posthole	304	undated	40	10	Yes	Yes

Table 8: List of bulk samples

context	sample	charcoal	charred plant	uncharred plant	artefacts
103	1	occ	occ	abt*	abt Fe slag
303	2	occ	occ	abt*	occ clinker

*Table 9: Summary of environmental remains; occ = occasional, abt = abundant, * = probably intrusive*

context	sample	preservation type	category remains	quantity/ diversity	species detail	comment
103	1	?wa	misc	+++/low	unidentified stem frags, unidentified leaf frags, unidentified herbaceous root frags	modern contamination
103	1	ch	misc	+/low	unidentified wood frags, *Quercus robur/petraea*, *Alnus/Carpinus/Corylus* sp, non-oak	
103	1	ch	grain	+/low	Cereal sp indet grain, *Avena* sp grain, Poaceae sp indet grain (fragments)	
303	2	?wa	misc	+++/low	unidentified leaf frags, unidentified herbaceous root frags, unidentified woody root frags, unidentified bark frags, unidentified wood frags	probably modern and intrusive
303	2	ch	misc	+/low	unidentified wood frags	
303	2	ch	seed	+/low	*Galium aparine*	

Table 10: Plant remains from bulk samples

preservation	***quantity***
ch = charred	*+ = 1 - 10*
min = mineralised	*++ = 11- 50*
wa = waterlogged	*+++ = 51 - 100*
?wa = waterlogged or uncharred	*++++ = 101+*
	** = fragments*

Medieval pit/shaft furnace (103)

A small assemblage of charcoal was recovered, which includes oak (Quercus robur/petraea), alder/hornbeam or hazel (Alnus/Carpinus/Corylus sp) and other non-oak species which may be the residue of fuel used for metal working as this material was discovered in association with abundant iron slag and the remains of a possible base of a kiln. Single charred oat (Avena sp) and unidentified cereal grains were also noted.

Undated post hole (303)

Only a single charred seed of cleavers (Galium aparine) and small fragments of charcoal were recovered. Some of the charcoal may be identifiable, but the assemblage is too small to warrant analysis.

Discussion

Only low levels of charred cereal crop waste were recovered, from which little interpretation could be made. Small assemblages of charcoal were also present, and in the case of the medieval pit or shaft furnace (103), processing the remainder of the sample may produce an assemblage which has the potential to provide information on wood fuel in use at this location during the medieval period.

4.5 Discussion

4.5.1 Field School

The *Field School* was able to provide further training and engagement opportunities for the volunteers who have supported delivery of the lidar validation, thus extending the skill set of this group of volunteers. It also provided all the volunteers with an opportunity to gain and practice new skills; specifically excavation and recording (written, drawn and photographic) of archaeological deposits, finds and environmental processing, and survey. Feedback was positive and the volunteers clearly felt they had learned new skills as well as a greater understanding of their local history. The feedback also highlighted some of the social and community benefits of the project, including meeting people from different walks of life.

The *Field School* was also successful in engaging with the wider community of the area, consequently raising public understanding and awareness of the archaeological and historic features which survive within the Forest. The number of people who joined Dean Archaeology Group following the project will provide a lasting legacy regardless of whether the application for the proposed main stage is successful.

4.5.2 Archaeological results

Pottery recovered from the ditch, a pit or shaft furnace (104) and various soil deposits excavated in the test pits indicate that the enclosure was in use around the 12th to early 14th centuries AD. The quantity of iron smelting slag and furnace material in association with the medieval pottery and possible shaft furnace (104) indicates the presence of metal working on the site during this period. However the ditch and other test pits only contained relatively small quantities of slag in the securely dated medieval fills, and the primary function of the enclosure is not clear. Except for the possible furnace in Test Pit 1 no evidence of internal structures was identified within the enclosure and there was also no evidence from the bank and ditch to help establish the primary function enclosure.

When the four enclosures were identified by lidar it was suggested that that they may be early Roman small fortlets or medieval hunting lodges based on similar examples which were recorded in the New Forest (Hoyle 2011, 40). The archaeological excavation at enclosure SO6316/07, located near Ruardean (Hoyle 2013, section 2), yielded a large quantity of early to middle Roman pottery, and it was interpreted as an early Roman military fortlet (*ibid*, 2.5). It was also suggested

that it may have formed part of a network of fortlets with the explicit function of guarding, monitoring or overseeing iron ore production during the early years of the Roman conquest.

In the context of understanding the function of the sub-rectangular enclosures the results of the excavation at Yorkley Slade are significant. Although the pottery assemblage was much smaller in comparison to the Ruardean example, the finds clearly indicate a medieval origin for the Yorkley enclosure, and despite the morphological similarities between the two enclosures they cannot be related. The work also raises further questions about the other two morphologically similar enclosures (SO5812/02 and SO6519/18). Are they Roman and related to the Ruardean enclosure, medieval and related to the Yorkley example, or are they also of another date (or function) and likewise unrelated?

5 Outreach

The Development Phase project used a variety of approaches to publicise their activities, recruit volunteers and more widely engage the community and other project stakeholders in '*Unearthing our Heritage*'.

The following summarises these activities and assesses their impact.

5.1 Schools

No formal schools engagement programme was built into *'Unearthing our Heritage*'; however, as described above the *Field School* at Yorkley provided an opportunity to work with local primary schools.

Only two schools were approached and both took up the opportunity despite a short notice period. All pupils from the local primary school at Yorkley attended sessions with three (KS2) classes visiting the excavations and two (KS1) classes attending a classroom session held at the school. Two classes from Lydbrook Primary School also visited the excavations as part of a wider programme of engagement with the *Foresters'* Forest. In total 137 (KS2) children visited the excavation and 56 (KS1) attended the teaching session at their school.

Subsequent to this, Justin Hughes (one of WAAS' Outreach officers) attended a schools stakeholder meeting hosted by the *Foresters' Forest* (Schools Information Day; 15-07-16). At this meeting ideas for schools work to be included in the Delivery Stage were explored and especially the development of teaching resources and information packs which could be built on resources already being developed by Lydbrook School. These have therefore been included in proposals for the delivery phase of the *Foresters' Forest*.

5.2 Media

Both traditional media outlets (local papers and radio) as well as social media were used to advertise and highlight events and discoveries made during the course of the project as follows:

- 4 x BBC Radio Gloucester interviews
- 3 x Press releases
- Updates and information on Foresters' Forest webpages.
- Facebook presence Foresters' Forest pages
- Facebook presence on Worcestershire Archive and Archaeology pages.

It is difficult to ascertain the impact the use of media had on the project as no method of measuring this was employed within '*Unearthing our Heritage*', although some volunteers and visitors did say that they'd heard about the project through media sources.

Although these were clearly successful to a degree in that a large number of volunteers were recruited and numerous people attended project events and activities, it is generally felt within the

project team that although traditional media outlets were well utilised that more use could have been made of social media and the *Foresters' Forest* website. It is therefore recommended that the Delivery Phase Project incorporates more focussed and resourced use of the project website and social media outputs as these have a huge potential to enable sharing of large quantities of information and also to reach a considerably larger and more diverse audience than has been possible during the development phase and would be possible through more traditional media outlets.

5.3 Events and activities

During the course of the project, members of the *'Unearthing our Heritage'* delivered the following event and activities:

- Foresters' Forest Launch (staff member/s with activities and information boards/displays);
- Volunteer Welcome (staff member/s with activities and information boards/displays);
- Forest Festival (staff member/s with activities and information boards/displays);
- Site open day at Yorkley excavation (50 attended; activities and information boards/displays)
- Forest of Dean Local History Society talk (80 attended)
- Yorkley Community Centre talk (60 attended).

All of these were very well attended with *'Unearthing our Heritage'* activities and displays proving very popular at events which were not specific to this particular project and strong attendance at project specific events.

5.4 Stakeholder meetings/events

Four stakeholder events/meetings were attended by members of the project team from WAAS as follows:

- Forest Forum (21-07-15)
- Built Heritage Meeting (15-04-16)
- Schools Information Day (06-07-16)
- Project Leaders Workshop (15-07-16)

All these provided opportunities for development and sharing of ideas between the various stakeholders involved helping to focus certain aspects of the *Foresters' Forest* and to build links with other projects including Veteran Trees, Waterways, Ponds, Gloucestershire Wildlife Trust and Project Evaluation. These have supported delivery of project outputs and improved outcomes for those engaging in the project through engendering a sense of belonging to the wider *Foresters' Forest* programme and the great diversity of projects being undertaken. If the Delivery Stage of the project is approved these links across projects will be of great benefit in developing a shared sense of purpose and a greater understanding of how the many different projects involved in the *Foresters' Forest* inter-relate and the ways in which different aspects of the Forest's natural and cultural heritage have influenced the character and development of the others.

6 Project discussion and conclusions

Through training and working with a team of volunteers recruited from the local community the development phase of *'Unearthing our Heritage*' has generated a large quantity of baseline information on numerous sites across the Forest of Dean.

A lidar validation survey has identified and examined 227 potential archaeological sites within four pilot study areas across the Forest and verified the presence of a large number of archaeological sites. Six hundred and twenty three volunteer hours were logged in total across the lidar validation

survey. Background research has both supported understanding of these sites and facilitated the identification of many new ones. The condition and character of these sites has also been recorded and the information added to a geographic information system (GIS). This new understanding of the rich and diverse character of archaeological sites surviving in the Forest in the four pilot study areas will provide a key tool in developing appropriate management for them and maintaining measures to protect them. The baseline data and mapping will also provide a valuable tool for researchers.

Alongside the validation survey, an archaeological Field School run for the volunteers has enabled more detailed investigation of two selected sites, at Yorkley and at nearby Tomlin. Five hundred and forty eight volunteer hours were logged during the Field School, and feedback from the volunteers was very positive. In addition, 137 KS2 children visited the excavation at Yorkley and 56 KS1 were able to attend a teaching session at their school.

During the Field School trench excavation and test pits were targeted on an enclosure near Yorkley thought likely to be of Roman date and possibly military in origin but in the event revealed to be a medieval enclosure and ironworking site. Although it is documented that ironworking was a significant industry in the medieval forest, this is the first confirmed example of such a site and represents a significant find. Such discoveries demonstrate very clearly both the difficulties and opportunities that investigation of archaeological sites within the Forest presents, not only for training volunteers in archaeological techniques but also in advancing research and understanding.

At nearby Tomlin, our Field School focussed on surveying the ruins of a deserted settlement lying within the forest. This provided an excellent example of the potential of more recent heritage sites to provide links and resonances for members of the local community, some of whom had family ties to the last recorded residents of the settlement some 100 years ago and others of whom had played in the ruins in their youth. Further evidence for the association and links to the past held by members of the local communities was provided by the third project element which encouraged people to go out into the forest and photograph built heritage sites that held particular importance or resonance for them. The aim of this is to help identify the full range of sites present within the forest and to build a photographic record of the sites as they currently survive.

Alongside the lidar validation and built heritage surveys, and the training school, various school visits, open days, lectures, events and use of local and social media outlets enabled engagement of the much wider community in our project, helping foster a better understanding of the rich heritage of the Dean.

The delivery stage of the project will provide an opportunity to build on these foundations. It is proposed that the lidar validation survey will be expanded to the rest of the Forest. This will enable the continued participation of the existing volunteers as well as opportunities for others. It will also allow the majority of the potential archaeological features identified by lidar to be recorded, as well as potentially discover and identify new features, and enable the development of more informed management strategies.

Further archaeology field schools would enable opportunities for potential volunteers who felt they missed out on the Field School, as well as further training and development for those who were able to attend. They will also allow new sites to be excavated and recorded in a region which, archaeologically, is often not well understood, and where there are often few opportunities for excavation.

Throughout the delivery stage there will also be opportunities for school visits, open days, lectures, and events and together with the use of local and social media outlets will enable engagement with the much wider community in the Forest and beyond. This will foster a better understanding of the rich heritage of the Dean and along with numerous other projects undertaken under the umbrella of the Foresters' Forest help to generate a greater sense of value, place and belonging.

7 Acknowledgements

The work was managed by Worcestershire Archive and Archaeology Service (WAAS). Project management was undertaken by Robin Jackson, and training, administration and supervision of volunteers was led by Justin Hughes, Andrew Walsh and Jesse Wheeler. Rob Hedge, Paul Hudson and Nina O'Hare assisted with the Field School, and also contributed to various outreach elements.

WAAS would like to thank the following for their kind assistance: Sue Middleton for commissioning the work on behalf of the Foresters' Forest project and for her help and support throughout, Jane Garfield (also Foresters' Forest) for her help and support. WAAS would also like thank the FVAF team for their help administering the volunteers and Jon Hoyle (Gloucestershire County Council Archaeological Service) for his help, advice and support throughout.

Finally and most importantly WAAS would like to thank the HLF for funding the project and all of the volunteers who participated. Without their hard work, dedication and enthusiasm this project would not have been possible.

8 Bibliography

Baggs, AP and Jurica ARJ 1996 'Forest of Dean: Settlement' in Currie, CRJ and Herbert, NM (eds) *A History of the County of Gloucester: Volume 5, Bledisloe Hundred, St Briavels Hundred, the Forest of Dean,* 300-325

Baggs, AP and Jurica, ARJ 1996 'Forest of Dean: Industry' in Currie, CRJ and Herbert, NM (eds) *A History of the County of Gloucester: Volume 5, Bledisloe Hundred, St. Briavels Hundred, the Forest of Dean*, 326-354

Bryant, V, 2004 Medieval and early post-medieval pottery in Dalwood, H and Edwards, R *Excavations at Deansway, Worcester, 1988-89: Romano-British small town to late medieval city* CBA Res Rep **139**, 281-339

Cappers, TRJ, Bekker, RM, and Jans, JEA, 2012 *Digitale Zadenatlas van Nederland: Digital seed atlas of the Netherlands, Groningen Archaeological Studie*s, **4**, Barkhuis Publishing and Groningen University Library

CIfA 2014a Standard and guidance: Archaeological field evaluation, Chartered Institute for Archaeologists, http://www.archaeologists.net/codes/ifa

Clarke, S 2011 *The Medieval and Later Pottery Fabric Series*, Monmouth Archaeology and Monmouth Archaeological Society

Crew, P, 1995 *Bloomery iron smelting slags and other residues*, Historical Metallurgy Society: Archaeology Datasheet **5**

Glos1909survey a, http://www.glos1909survey.org.uk/code/data.php?id=21772

Glos1909survey b, http://www.glos1909survey.org.uk/code/data.php?id=21773

Griffin, L, 2014 *Assessment of the pottery from an archaeological evaluation at Lassington Lane, Highnam, Gloucestershire*, Worcestershire County Council report no. **2131**

Hather, JG, 2000 *The identification of the northern European hardwoods: a guide for archaeologists and conservators*, Archetype Publications

Hoyle 2003 *Welshbury Wood, Blaisdon, Gloucestershire: A report on a rapid walk-over field survey*, Gloucestershire County Council Archaeology Service, draft report day May 2003

Hoyle 2008a *The Forest of Dean, Gloucestershire, Lidar survey of selected areas of woodland and the Aggregates Resource Area: Project Number 4798 MAIN, Forest of Dean Archaeological Survey, Stage 3A*, Gloucestershire County Council Archaeology Service

Hoyle 2008b *The Forest of Dean, Gloucestershire, Stage 2: Pilot Field Survey, Project Number 2727*, Gloucestershire County Council Archaeology Service

Hoyle 2011 *Forest of Dean Archaeological Survey Stage 3B, Survey for management of lidar-detected earthworks in Forestry Commission woodland, Project Number 5291 SURV, Phase 1: Rapid field validation and scoping analysis for characterisation of archaeology in woodland*, Gloucestershire County Council Archaeology Service

Hoyle 2013 *Forest of Dean Archaeological Survey Stage 3B, Survey for management of lidar-detected earthworks in Forestry Commission woodland, Project Number 5291 REC, Phase 2: Field evaluation of selected lidar-detected earthworks and characterisation of archaeology in Forestry Commission woodland*, Gloucestershire County Council Archaeology Service

Hoyle JP, Butler L, Tait G & Wootton D 2004 *The Forest of Dean, Gloucestershire, The Scowles and Associated Iron Industry Survey, Project Number 3342*, Gloucestershire County Council Archaeology Service

Hurst, J D, and Rees, H, 1992 Pottery fabrics; a multi-period series for the County of Hereford and Worcester, in Woodiwiss, SG (ed), *Iron Age and Roman salt production and the medieval town of Droitwich*, CBA Res Rep **81**, 200-9

Jackson, R 2012 *Ariconium, Herefordshire: An Iron Age Settlement and Romano-British 'Small Town'*

OS 1878a *Gloucestershire XXXIX.11*, Scale 1:2500

OS 1878b *Gloucestershire XXXIX.11*, Scale 1:2500

OS 1881 *Gloucestershire XXXI.5*, Scale 1:2500

OS 1884 *Gloucestershire XXXIX.SE*, Scale 1:10,560

OS 1901a *Gloucestershire XXXIX.11*, Scale 1:2500

OS 1901b Gloucestershire XXXIX.SE, Scale 1:10,560

OS 1920 *Gloucestershire XXXIX.11*, Scale 1:2500

Stace, C, 2010 *New flora of the British Isles*, Cambridge University Press, 3rd edition

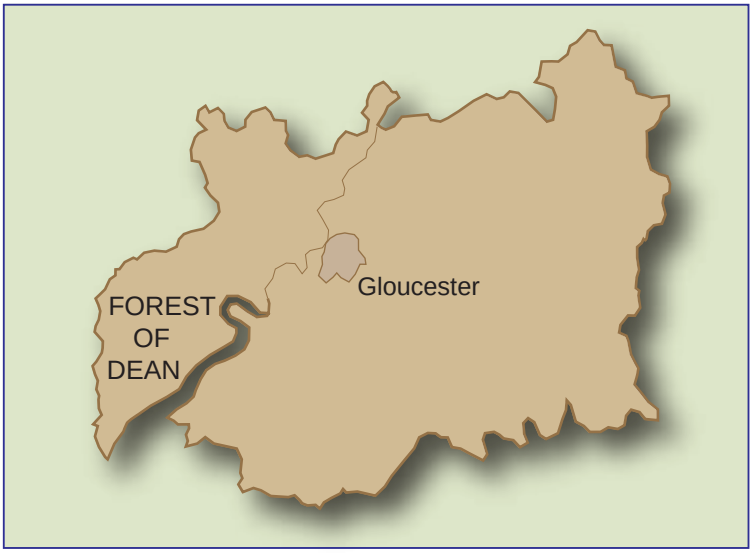
SMA 1993 *Selection, retention and dispersal of archaeological collections,* Society for Museum Archaeology, http://www.socmusarch.org.uk/publica.htm

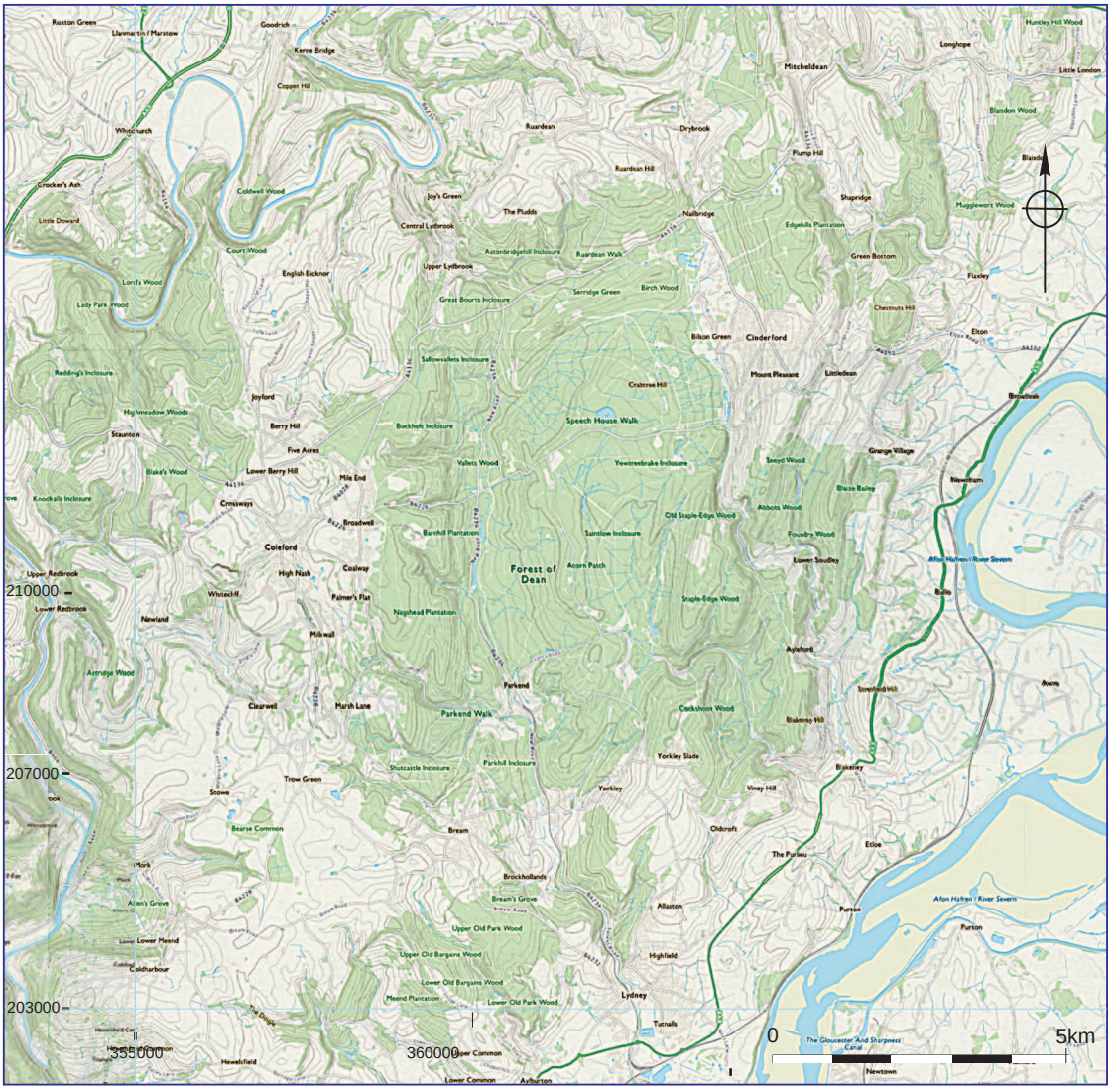
Vince, A G, 1984 *The medieval ceramic industry of the Severn Valley*, Univ Southampton PhD thesis

WA 2012 *Manual of service practice, recording manual*, Worcestershire Archaeology, Worcestershire County Council, report **1842**

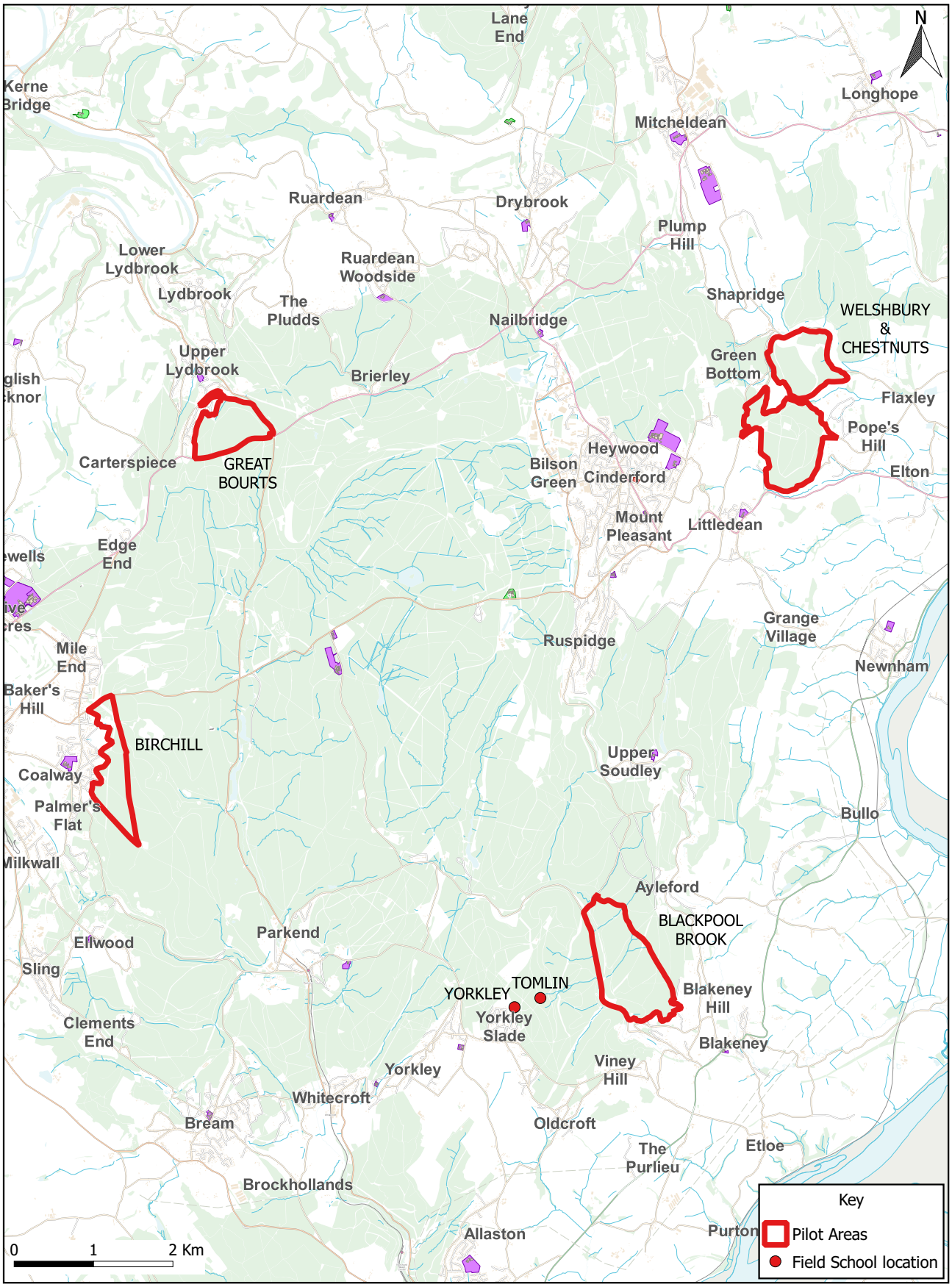
WA 2016 *Proposal for an Archaeology Field School (excavation, test pits and survey) of sites at Yorkley and Tomlin, Gloucestershire*, Worcestershire Archaeology, Worcestershire County Council, unpublished document dated 16 April 2016, **P4588**

Figures



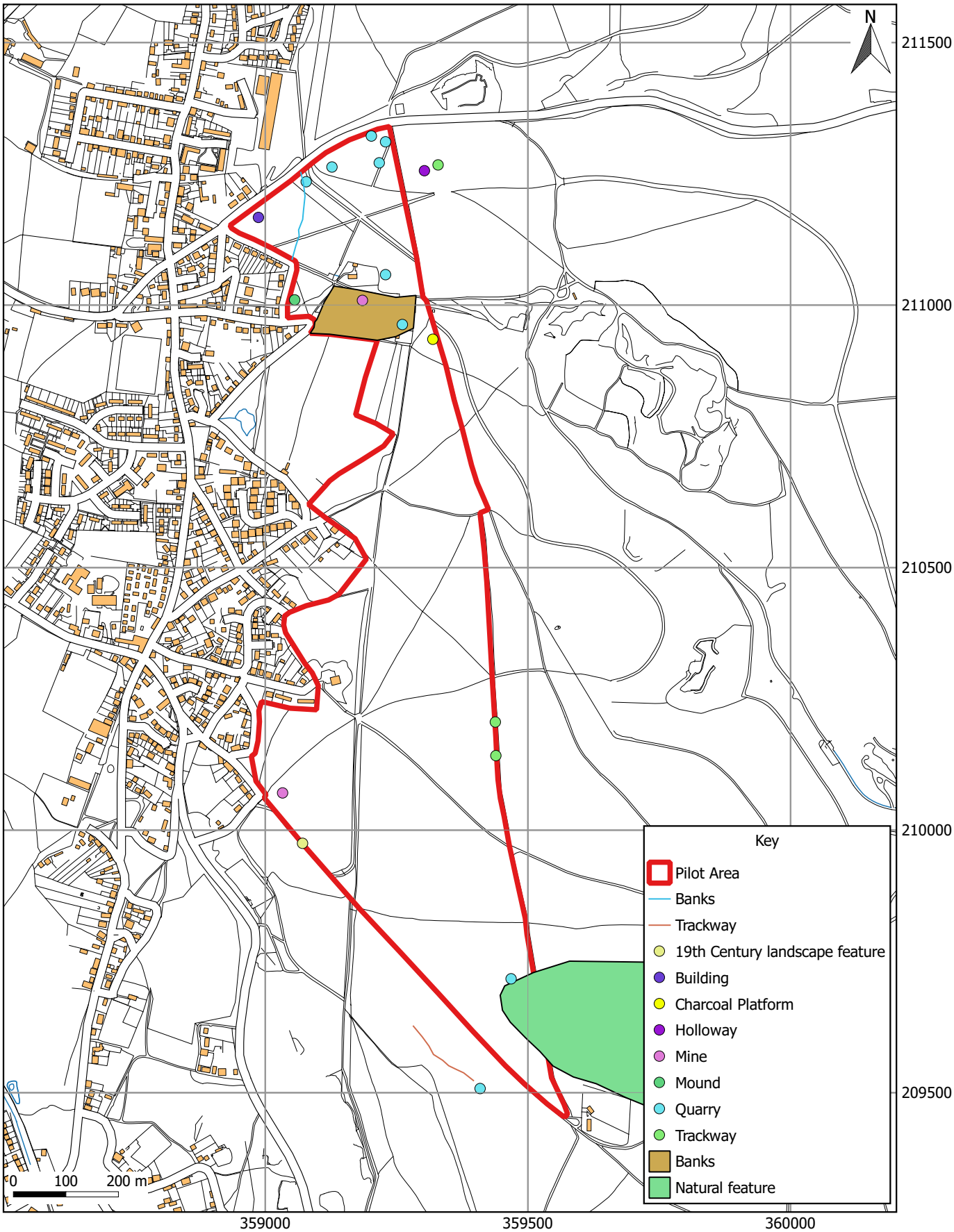


Location of the site *Figure 1*



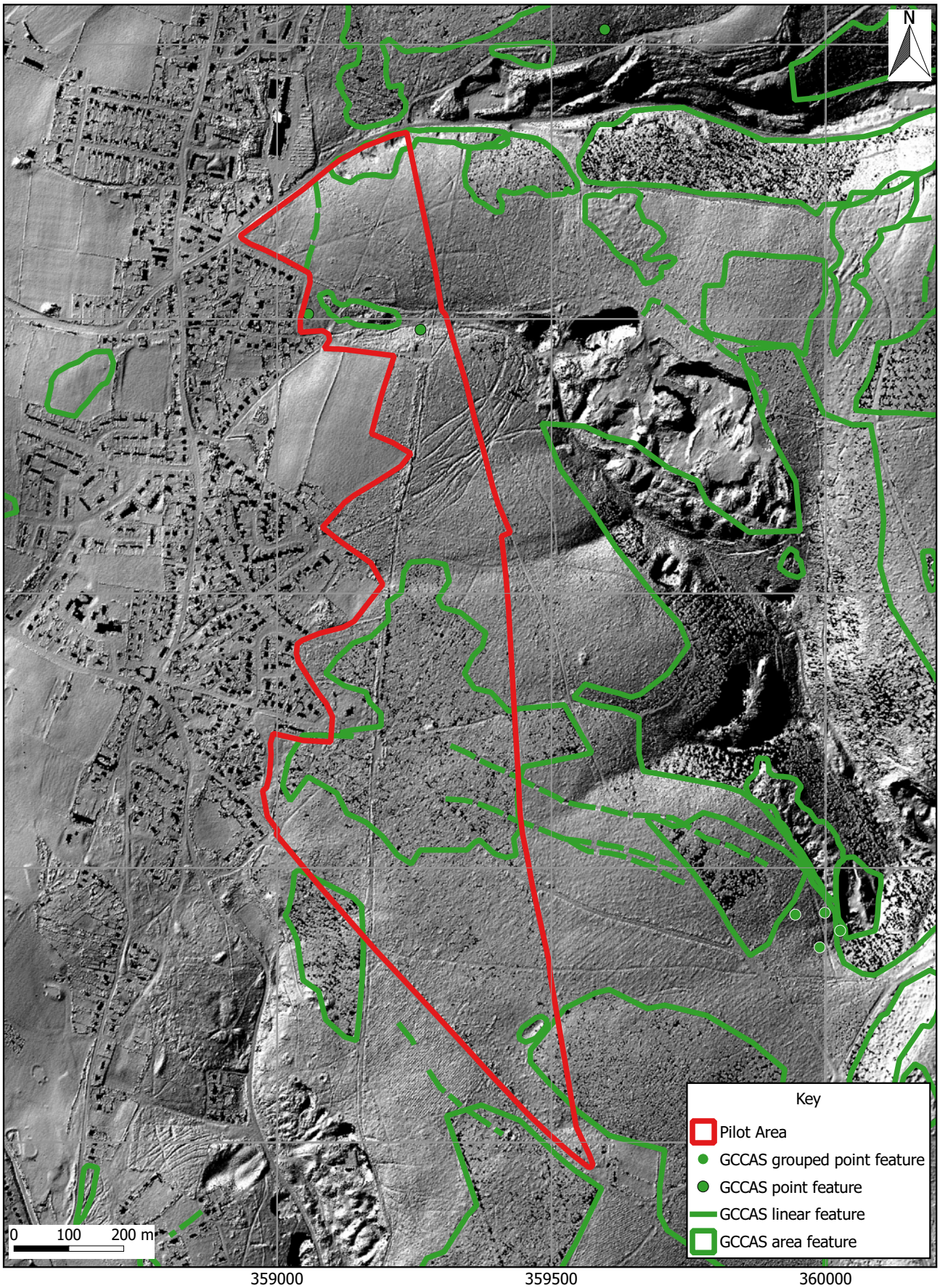
Location of lidar validation pilot areas and Field School in the Forest of Dean

Figure 2



Features identified at Birchill

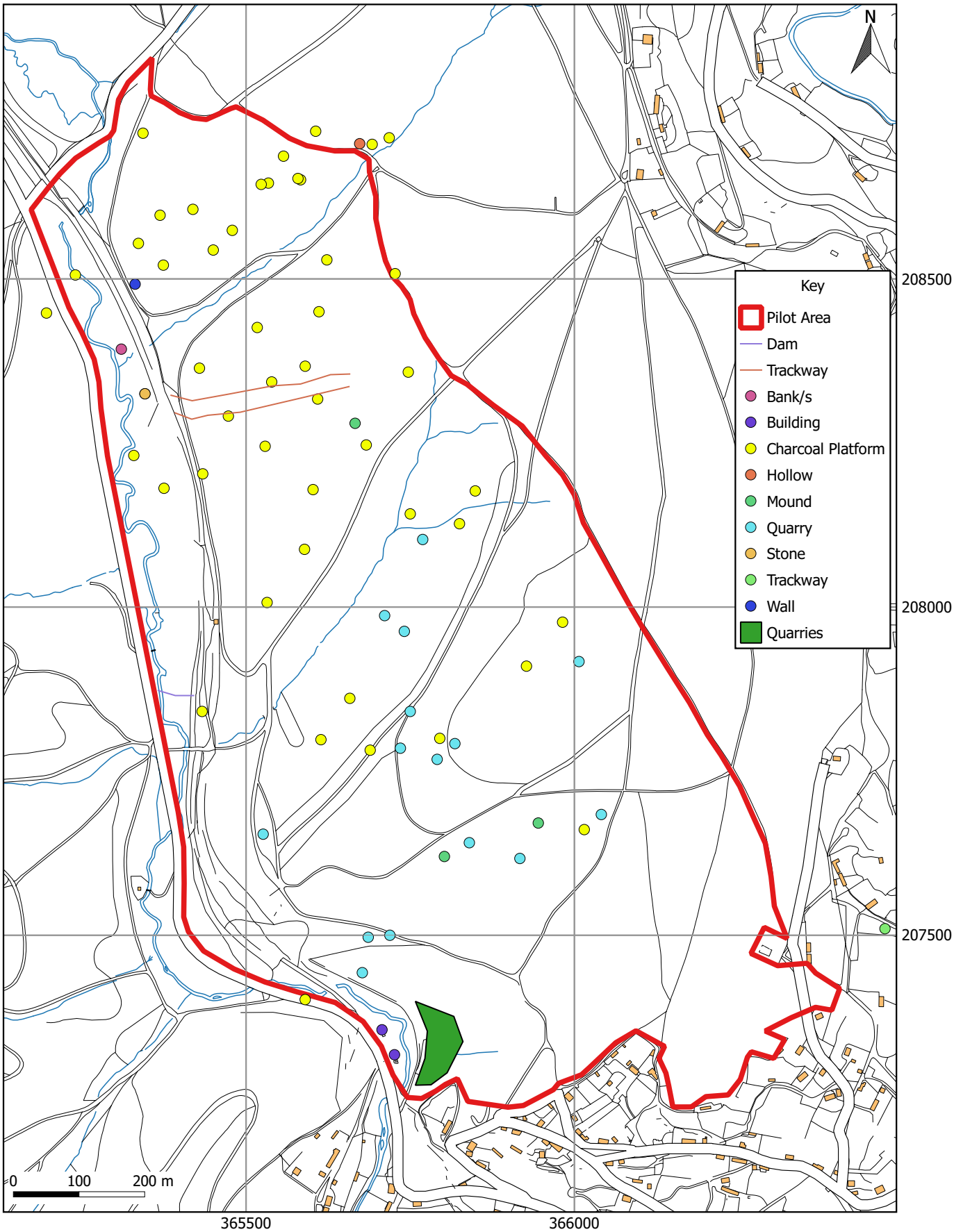
Figure 3



FORESTERS' FOREST

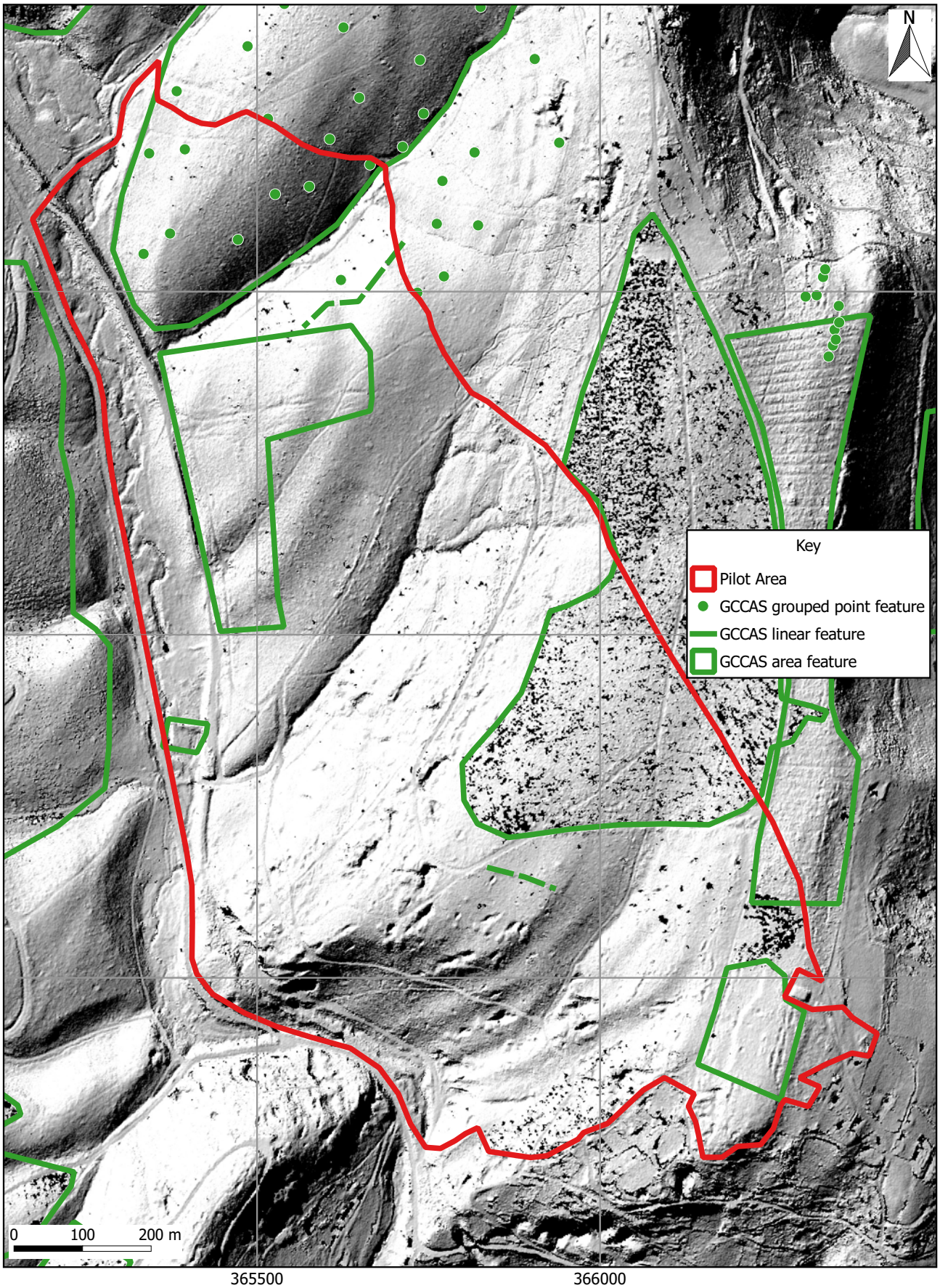
Lidar and Features identified by GCCAS at Birchill

Figure 4

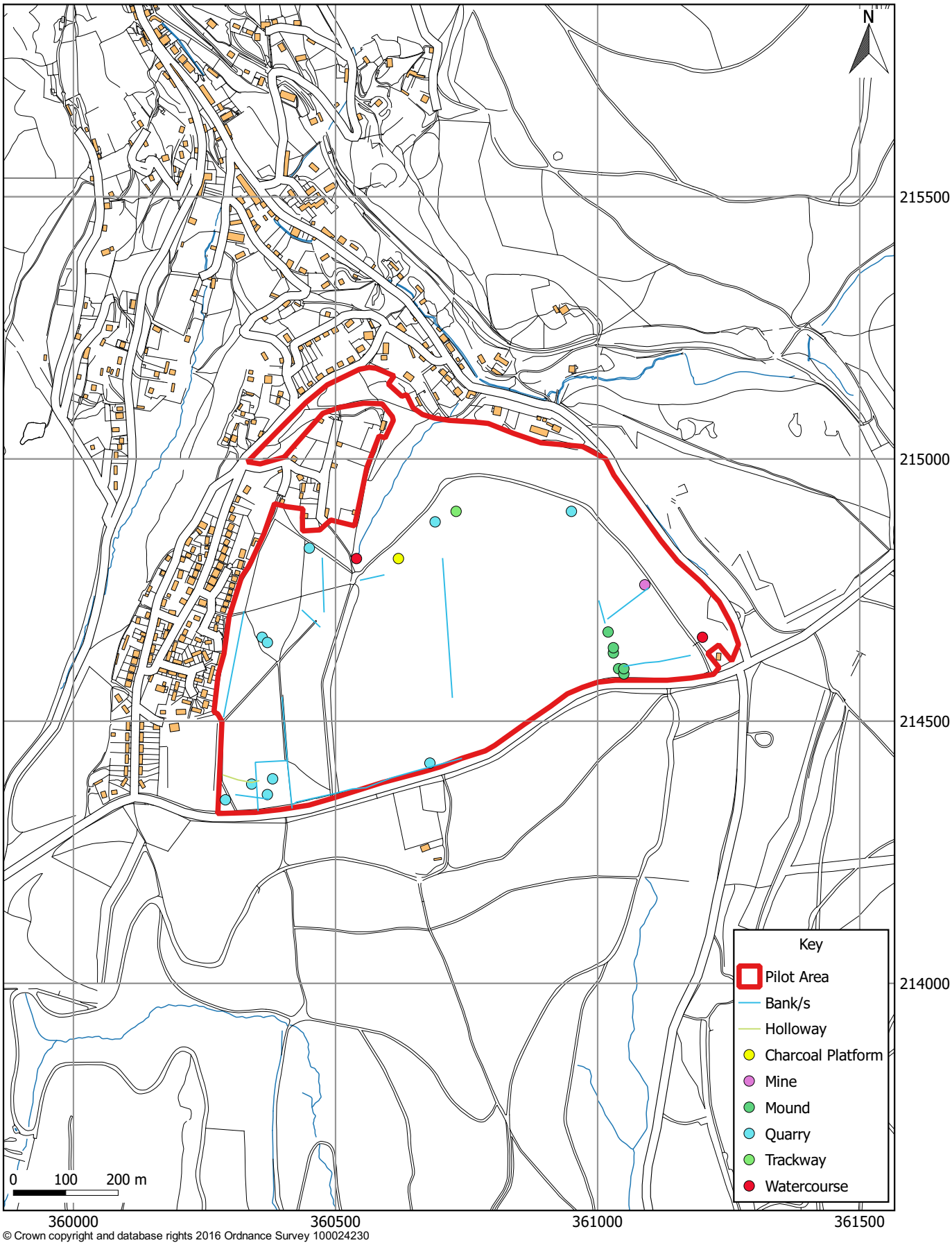


Features identified at Blackpool Brook

Figure 5

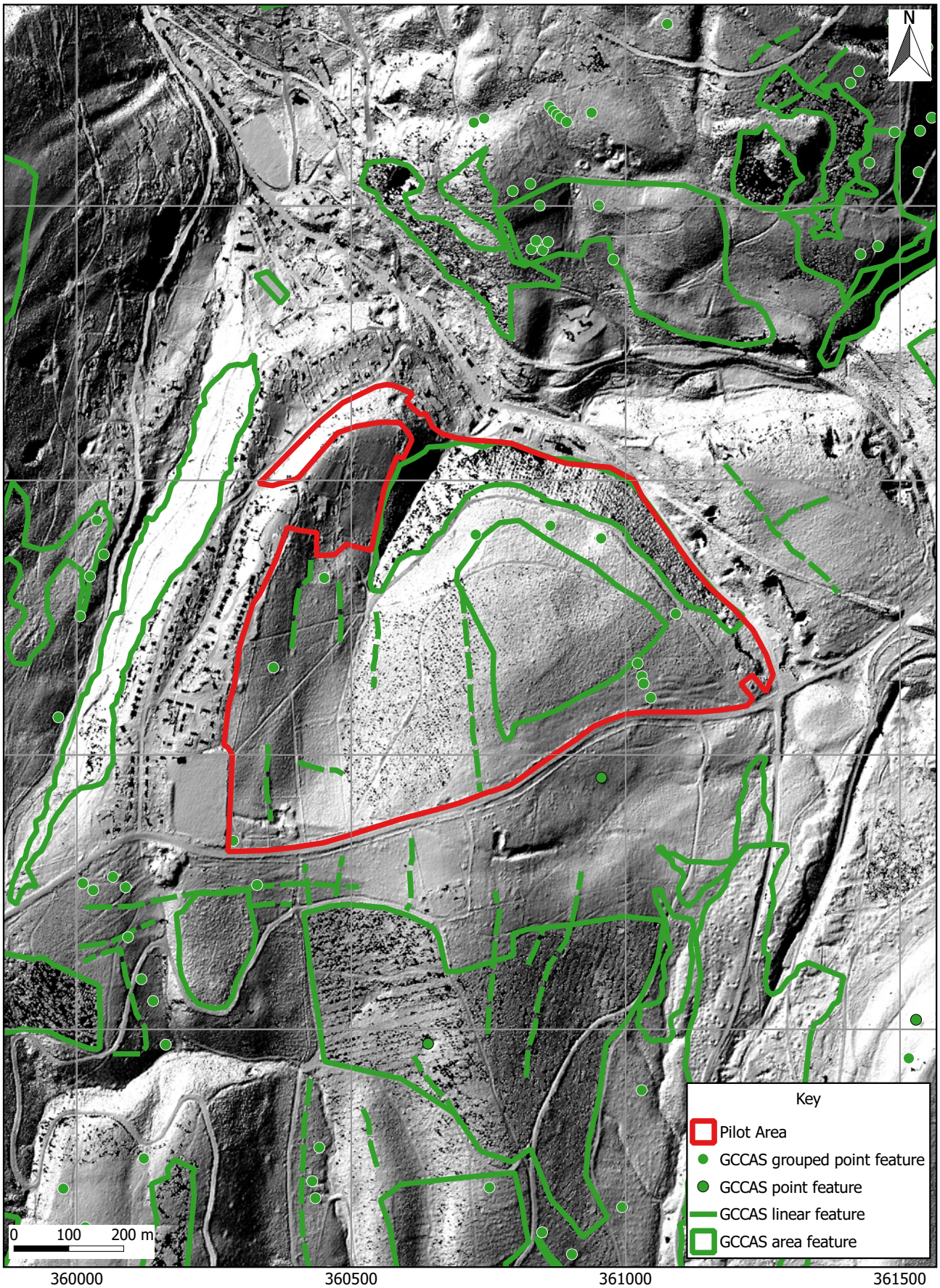


Lidar and Features identified by GCCAS at Blackpool Brook *Figure 6*



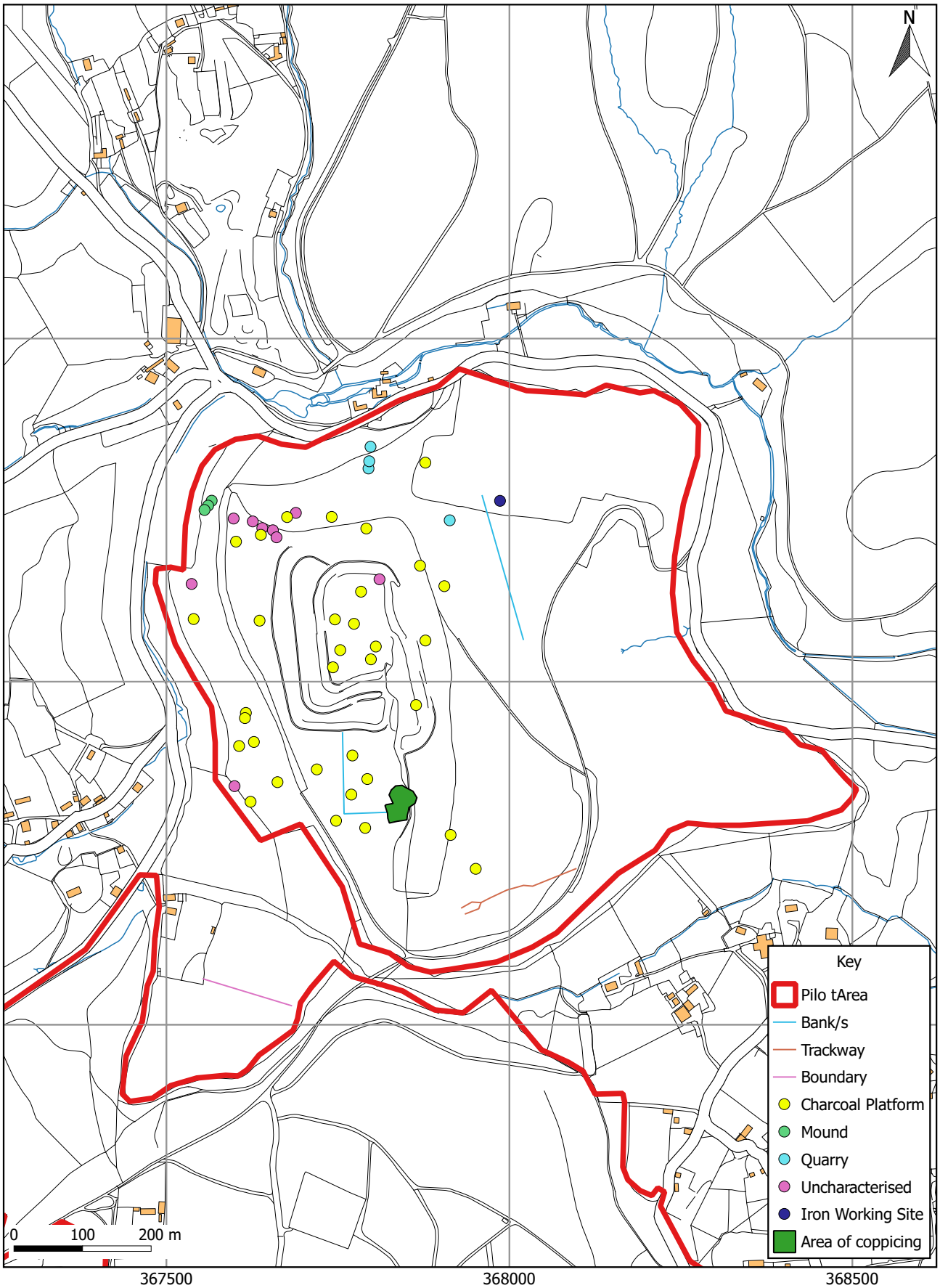
Features identified at Great Bourts

Figure 7



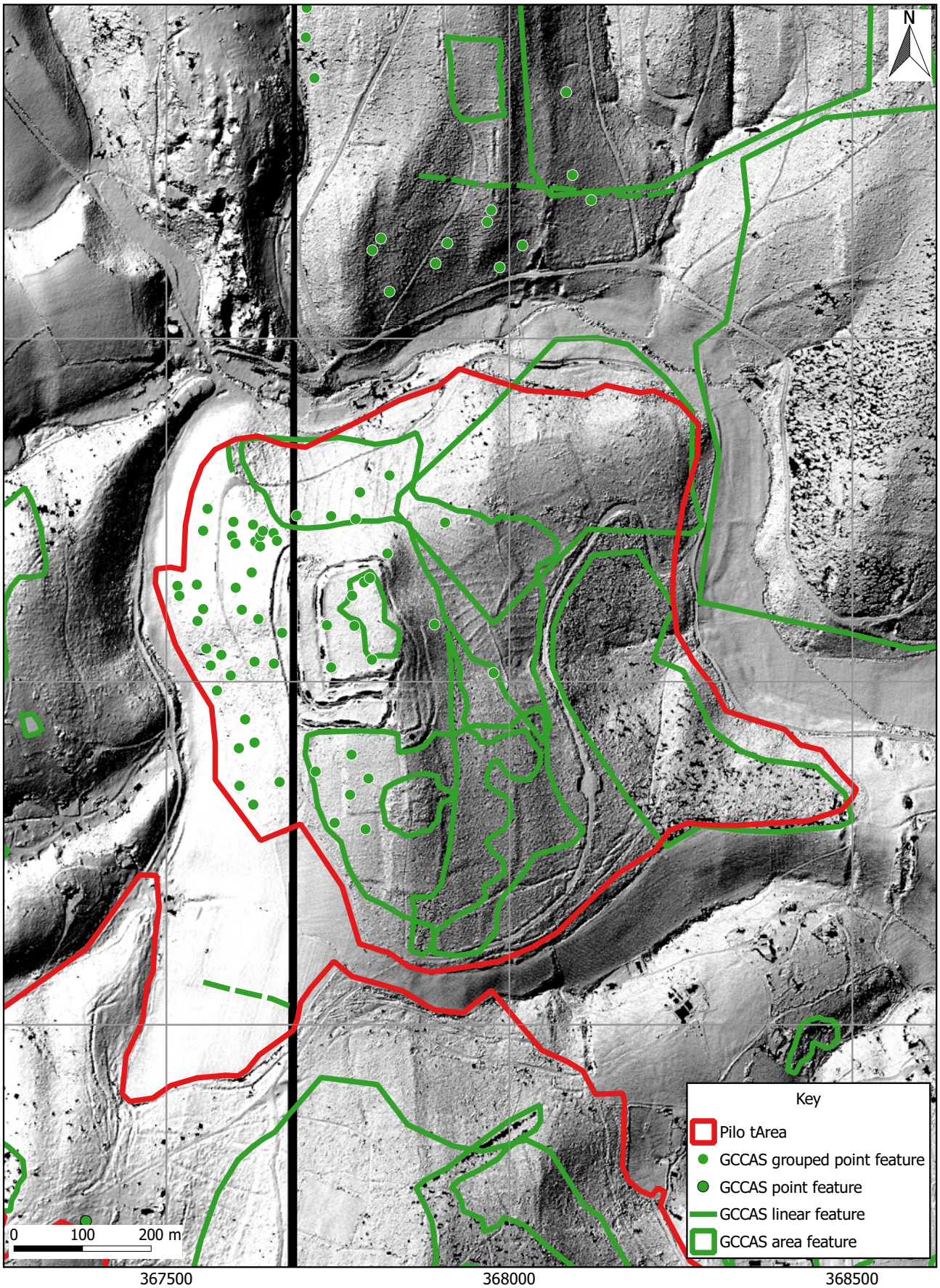
FORESTERS' FOREST

Lidar and Features identified by GCCAS at Great Bourts *Figure 8*

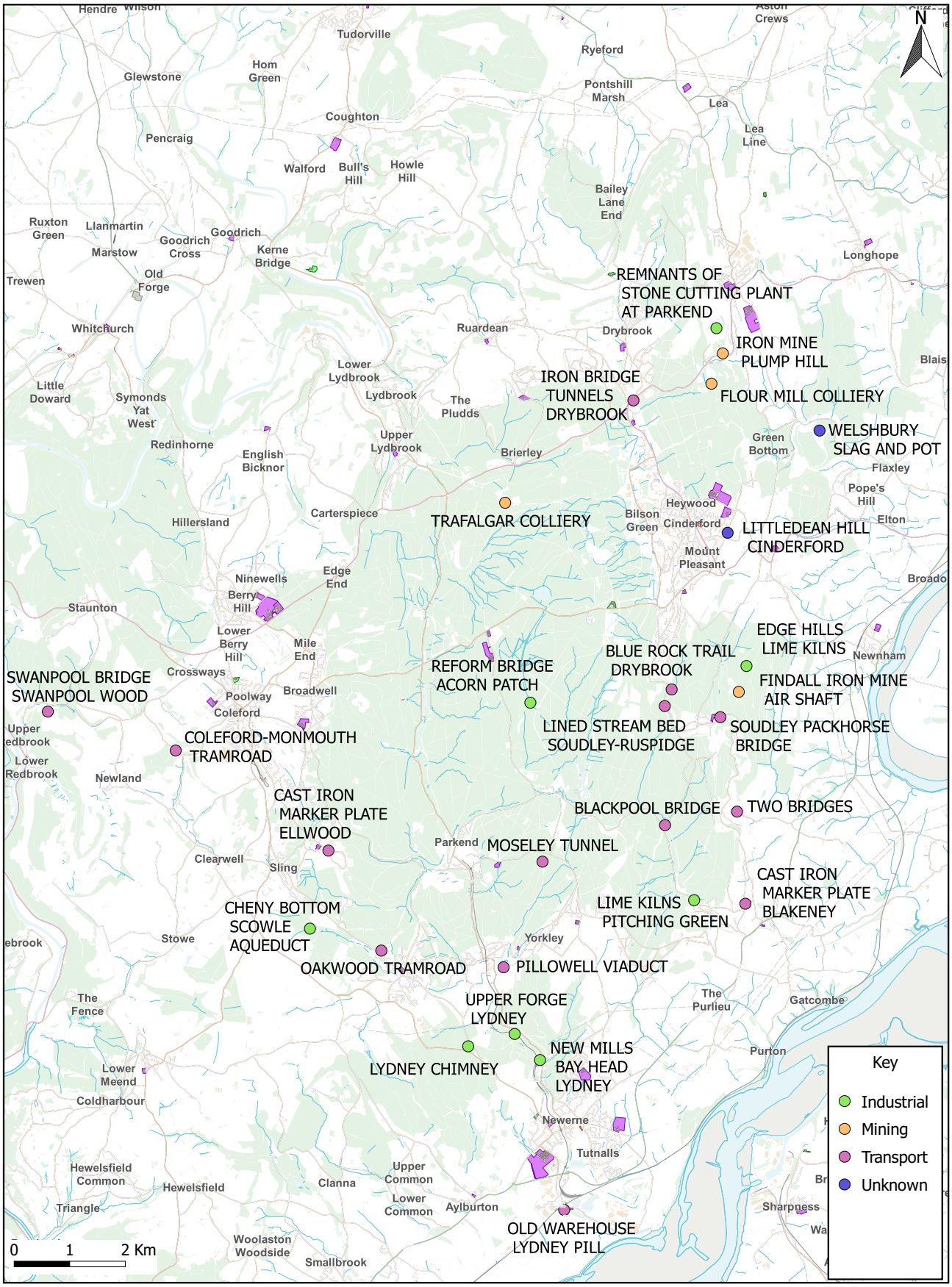


Features identified at Welshbury

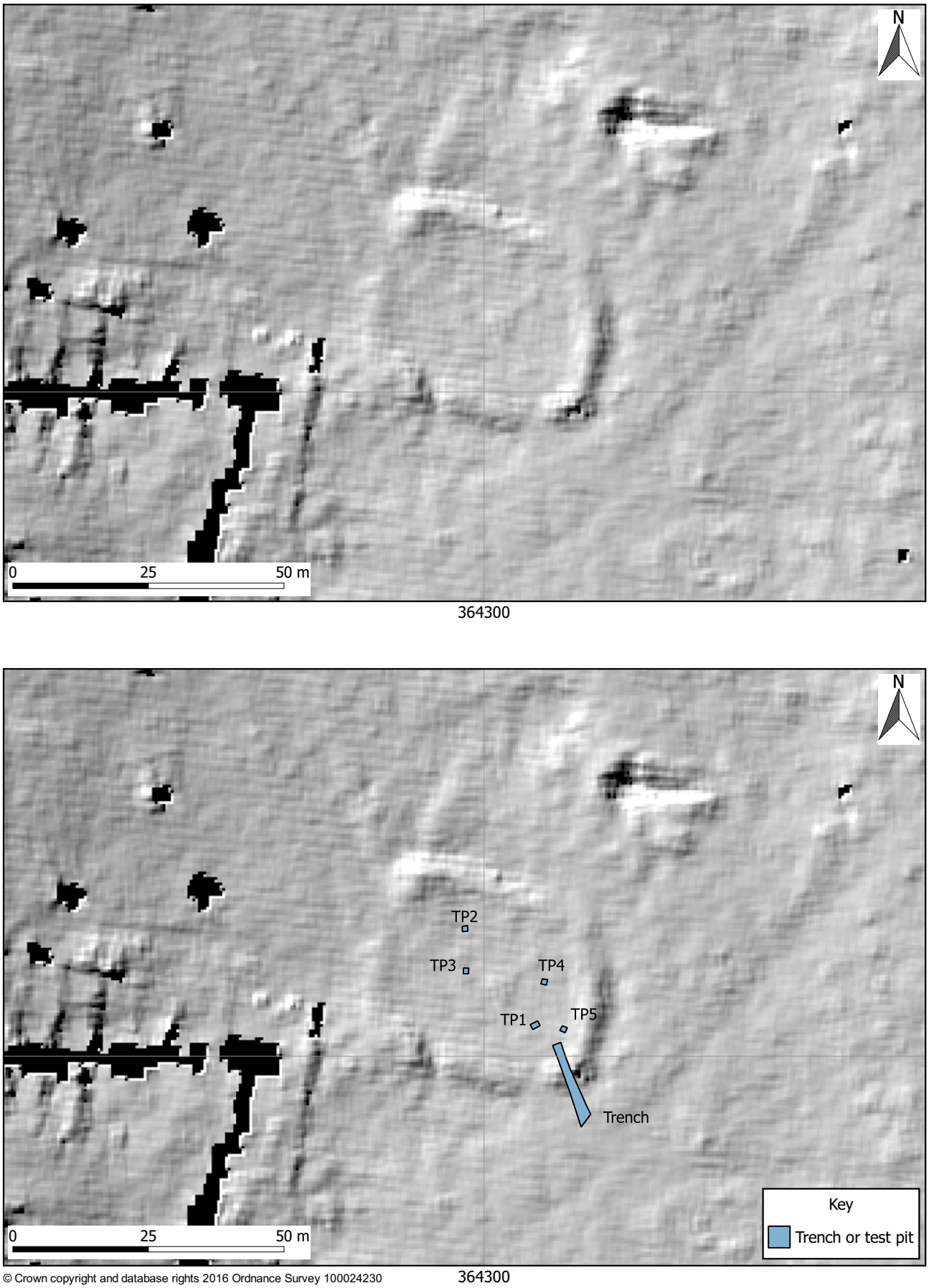
Figure 9



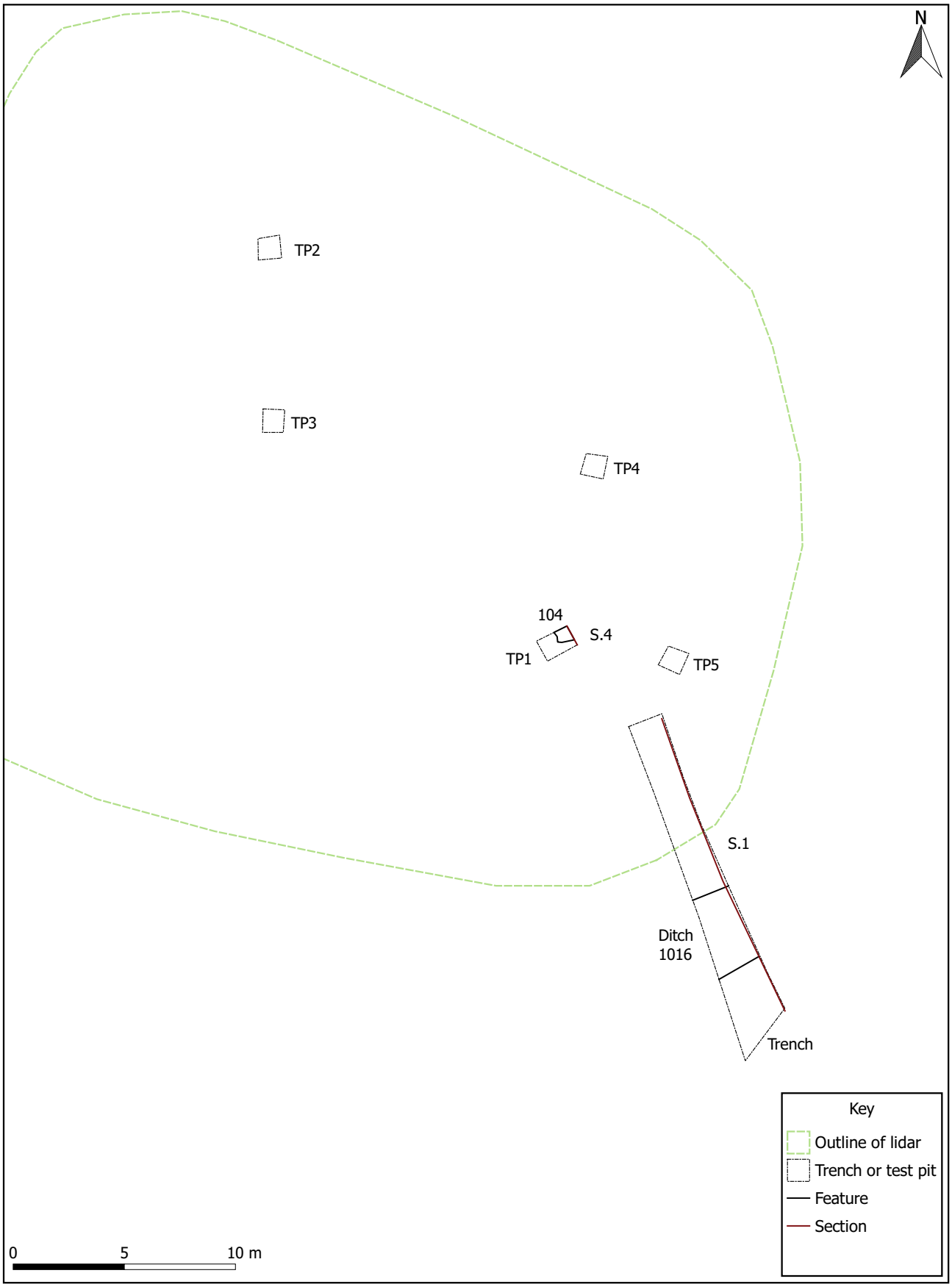
Lidar and Features identified by GCCAS at Welshbury *Figure 10*



Built Heritage submissions *Figure 11*

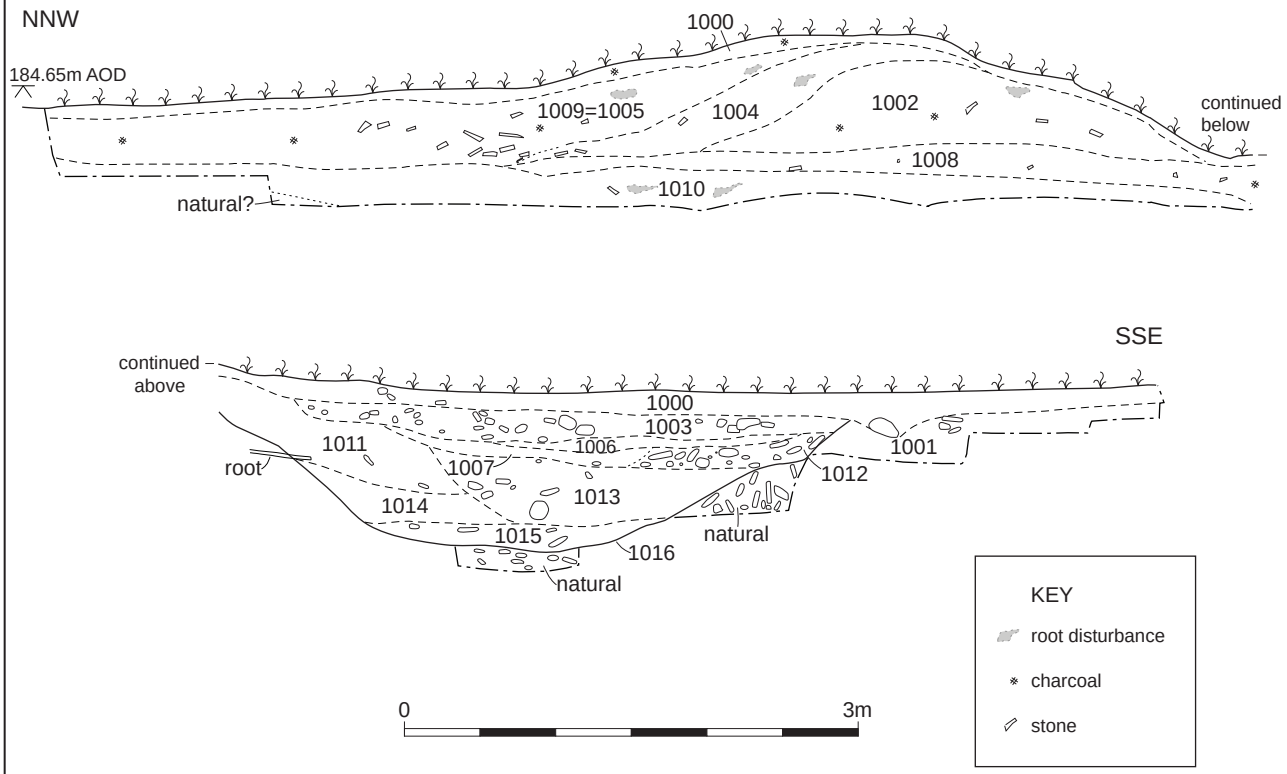


The enclosure at Yorkley showing the location of the trench and test pits *Figure 12*

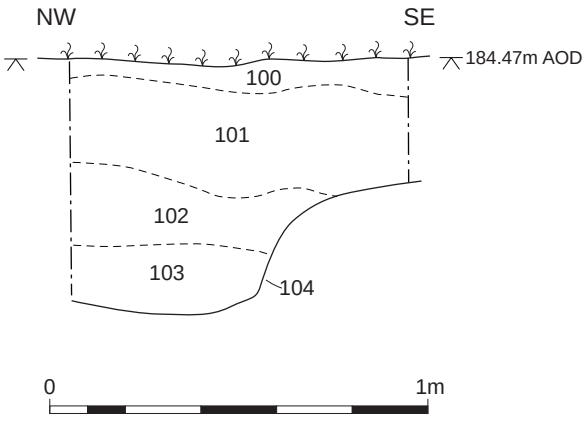


The excavated trenches and features at Yorkley *Figure 13*

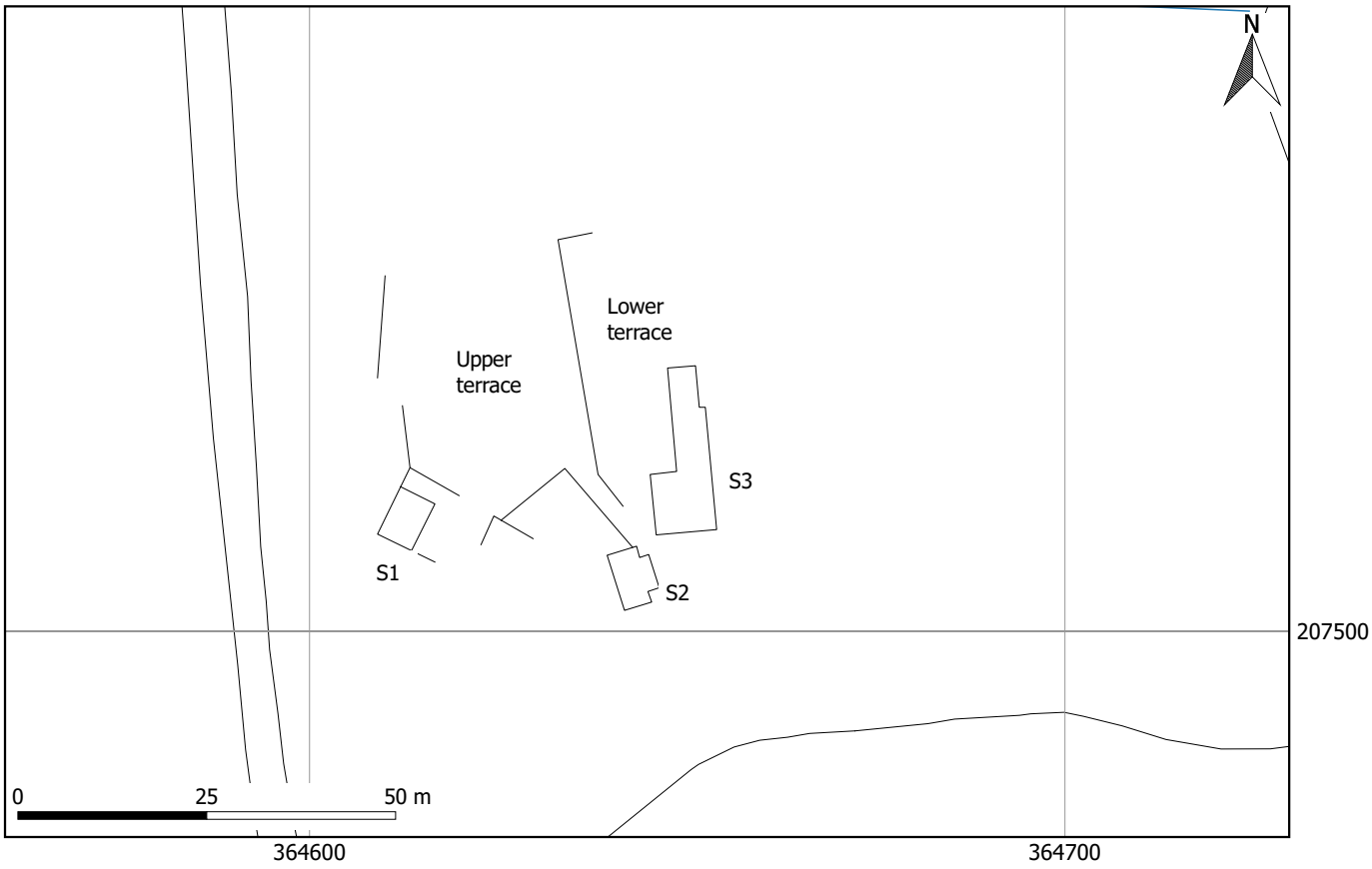
SECTION 1: ENCLOSURE BANK AND DITCH



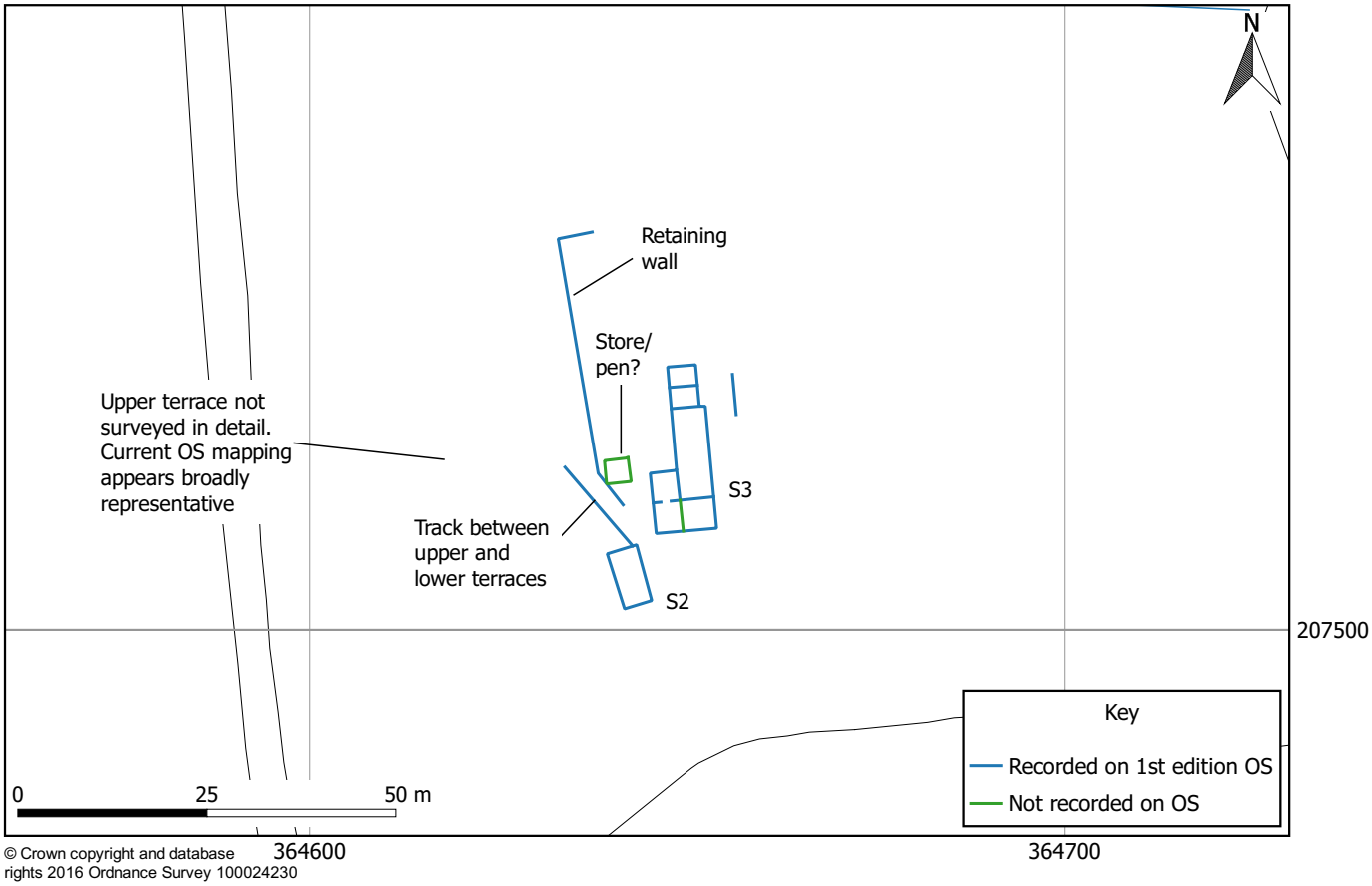
SECTION 4: PIT 104



Sections *Figure 14*



Current OS mapping of Tomlin



FORESTERS' FOREST

Results of the survey at Tomlin.
Note the upper terrace was not surveyed in detail

Figure 15

Plates

Plate 1: Training session at Blackpool Bridge

Plate 2: Training session at Welshbury

Plate 3: Upper Forge, Lydney with the Dean Forest heritage railway also recorded

Plate 4: Cheny Bottom Scowle Aqueduct

Plate 5: The bank and pre-bank deposits. Note the buried turf/topsoil layer. Photo looking north-east

Plate 6: Ditch 1016. Photo looking north

Plate 7: Pit 104 in Test pit 1. Photo looking north-east

Plate 8: Test pit 3 showing possible stakehole (304). Photo looking east. (Picture: Clive Osborne)

Plate 9: S2 at Tomlin. Note how the structure has been built into the hillside. Photo looking north-west (Picture: Clive Osborne)

Plate 10: Part of the remains of the east wall of S3 at Tomlin. Photo looking west (Picture Clive Osborne)

Plate 11: The southern and central parts of S3, looking north-east. (Note photo taken during April site visit)

Plate 12: The remains of the northern end of S3. Photo looking south (Picture: Clive Osborne)

Plate 13: The remains of possible a possible pen/store west of S3. Photo looking north (Picture: Clive Osborne)

Plate 14: The retaining wall for the track (to the right) between the upper and lower terrace. Photo looking west (Picture; Clive Osborne)

Plate 15: Evidence of the well, which is recorded on historic mapping, appears to be limited to a dried spring. Photo looking south-east (Note photo taken during April site visit)

Plate 16: Evidence of quarrying is visible immediately north of Tomlin (Note photo taken during April site visit)

Appendix 1: Lidar validation handbook

worcestershire county council

Foresters' Forest

Unearthing the Dean Pilot Phase

A handbook for surveying archaeological features in the Forest of Dean

Main contact: Justin Hughes (jhughes@worcestershire.gov.uk, 07710 699397)

Rob Hedge (rhedge@worcestershire.gov.uk, 07759 647133)
Andy Walsh (awalsh@worcestershire.gov.uk, 07834 236181)

heritage lottery fund
LOTTERY FUNDED

FORESTERS' FOREST

Introduction

Welcome to 'Unearthing the Dean', part of the ***Foresters' Forest*** project. During this part of the project you will be surveying four pilot areas looking for any archaeological features, such as earthworks, buildings or remains of industrial processes and also for any old or managed trees. You will also be comparing what you find during the survey with a Lidar survey which was carried out by Gloucestershire County Council Archaeology Service. The results from the pilot areas will feed back into the main phase of the project which, funding permitting, will start in 2017.

Each of the four pilot areas has been divided up into a number of 'survey blocks' and it is important that each block is looked at systematically during the next few months (November 2015 – April 2016). You will need to work together with the other volunteers and the project leaders (Andy, Justin, Rob) to make sure every grid is surveyed. During the training sessions you should have been assigned a number of survey blocks and taught how to do the survey.

What you should do before you go

Find out what information already exists

Collect the Lidar images for your survey block. On one of the Lidar images you will see green dots, lines and areas each with a reference number. Gloucestershire County Council Archaeology Service have already examined all the Lidar images on a computer at Shire Hall and identified these as possible archaeological features. Don't worry if your block doesn't have many on it. Gloucestershire County Council only did a rapid assessment and many features will not have been identified.

If it is possible try to look at historic maps for the area you are surveying. The National Library of Scotland website (http://maps.nls.uk) is one of the best places to find historic maps for Britain. The 6 inch Ordnance Survey maps are especially useful (http://maps.nls.uk/os/6inch-england-and-wales/index.html). The earliest 6 inch maps date to around 1880 and are known as the First Edition. They show many features which allow archaeologist to start to understand the landscape and how it has changed over time. For example many quarries are illustrated

but if they are already marked as disused by 1880 it tells us that they are at least 135 years old and may be much older. Other features that you may identify on old maps are those such as buildings, field boundaries, tracks or paths, and historic monuments. Looking at how these change overtime is very useful, although if you don't get chance to look at them before (or after) your survey don't worry.

Many other maps of the Forest of Dean have been made over the years but these are often harder to find. Some are located in Gloucestershire Record Office and these will be covered in another session. If you are interested in looking at other historic maps and documents please let us know.

Become familiar with the wood, and assess the Risks

Initial explorations to familiarise you with the layout of your survey block are very useful. This will help you know where the wood boundaries are, how long it takes to walk between various points, obvious features, potential hazards (eg steep stream sides) and areas where walking in is going to be difficult, such as impassable brambles, water courses or dense conifer plantations.

You will have been provided a risk assessment during your training session but on your initial explorations you will also want to think about the potential hazards you are likely to encounter. The Forest of Dean contains many visible and hidden hazards, in particular related to historic mining, so do not walk across or stand on hollows in the ground as these could collapse. If you see feral wild boar stop what you are doing and be prepared to retreat if it does not move off. The boar typically hide in areas of dense vegetation so try to avoid tramping through these without carefully checking first.

Surveys are best undertaken in groups of between two and four. It is strongly advised that you do not go out alone, but if you do, let someone know where you are and what time you expect to return.

Deciding when to do your survey

The survey is best done during the winter months when vegetation has died back. This is not so applicable in conifer plantations, where ground cover is minimal. You must take the weather into account – high wind can be dangerous in woods and rain will make the ground slippery.

However, light snow can show up features better, since it collects in hollows and against banks. Low sun, in the early morning or evening, can highlight shallow features otherwise difficult to see, although shade from trees can also mask features. Noting down the weather conditions when you survey will enable future readers of the report to know how they may have affected what you recorded. Surveys carried out in the right weather conditions are often more successful.

Have some idea of what you are looking for

Familiarise yourself with the information in the **Feature Identification Toolkit**, the **FEATURE RECORD** form, and the **DAY RECORD** form. If there is anything you are uncertain about please contact the project leaders *before* you start your survey! We will be providing a number of support sessions during the winter.

Organising the survey

What you need

Each block should have:

- An A3 Lidar printout of the block overlaid with the features identified by Gloucestershire County Council
- A plain A3 Lidar printout of the same block showing just the Lidar image
- A modern OS map to help you navigate across your block. You will see that many of the features illustrated on the map are also recorded by the Lidar.

If you cannot find these please contact one of the project leaders.

You will also need printed copies of the:

- **DAY RECORD** forms to record what you have done each visit
- **FEATURE RECORD** forms to record each of the features you visit or identify.

- **Feature Identification Toolkit** to help you identify features.

And finally you will need your surveying equipment:

- This consists of:
    - One Black weather writer
    - One Compass
    - Two Red and white ranging poles
    - Two 30m tapes
    - One 5m hand tape
    - High vis vests

Even if you only intend to be out for a short time, always take water, some food and a mobile phone.

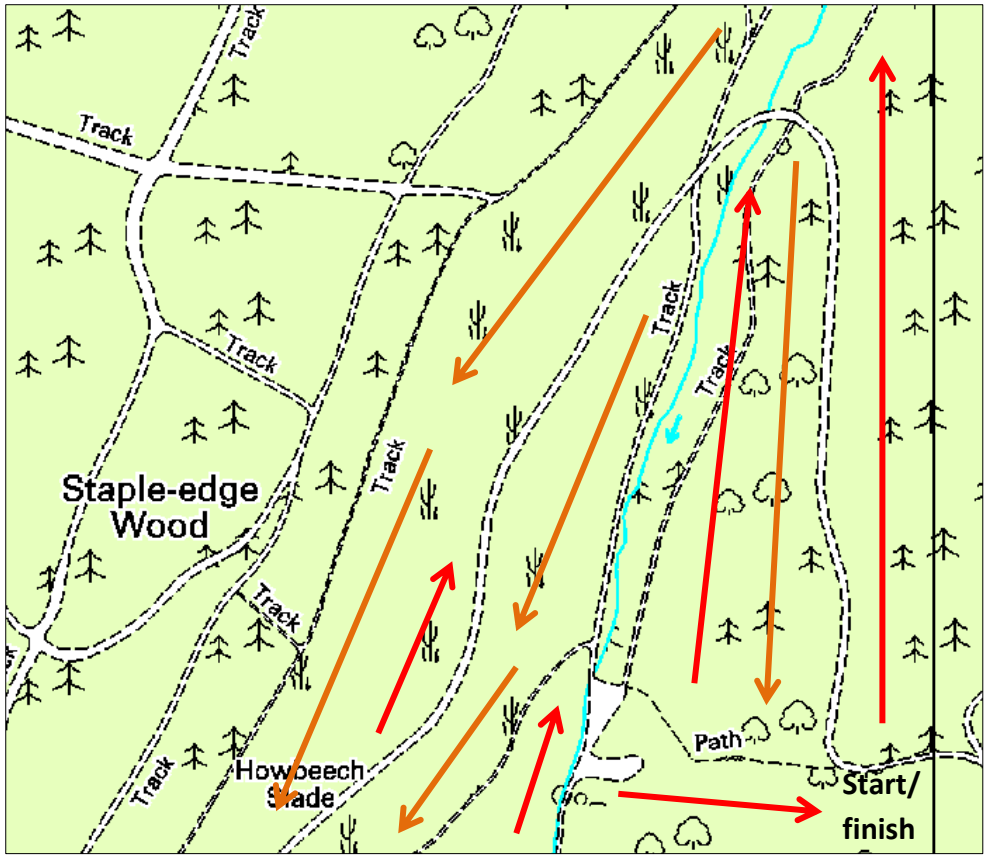
Doing the survey

Walk through the wood systematically

Be organised and tackle the area as methodically as possible. Start the survey at a clearly defined 'point' such as a boundary, or access track and work from, and back, to this. Take into account access, such as across deep streams or impassable fences, and divide up the area accordingly.

Try and walk in systematic lines. This method will ensure that you miss less ground and will record as much as possible. In areas where lots of features have already been identified by Gloucestershire County Council it may be best to visit these first and then do a systematic survey looking for unidentified features.

It's easy to end up not walking in a straight line, so use the ranging poles or other hard features as markers for your parallel lines. If you are in a plantation where the trees are in straight lines, you could use these as a guide, although in other areas be careful using trees as markers as they quickly start to look alike!!



This survey block has been divided up to take advantage of the crossing points across the stream, and the network of forestry tracks and paths. The arrows indicate the direction you might travel during the survey. In this case the western part of the survey area would be undertaken on another day and using a different access point. There is no right or wrong way of doing your survey as long as you can undertake it safely. If the ground is steep it will be easier to survey following the contour of a slope rather than walking uphill/downhill.

Record each feature found

When you get to a feature recorded on the Lidar or think you have spotted a new one, make a note of where you are on your survey route using a ranging pole or other marker so that you can return to the same point to continue surveying. Check your Lidar printout to see what is visible and if the feature has already been identified and numbered by Gloucestershire County Council. Walk around the feature and try to see if there are any other features in the area. If the feature is 'linear' (linear features are in lines, for example ditches or banks) try to walk the whole length of the feature and look for others which may be related.

Every feature will need a unique number. This should be the code for the survey grid followed by a sequence number system (eg **SO6715/09/001**, for your first feature, **SO6715/09/002** for second and so on). You will use this unique number to cross reference with the map/Lidar print, recording forms, any notes and photos. A recording form should be completed for each feature.

- ***If the feature is visible on the Lidar printout***

Mark what you can see of the feature on the plain Lidar printout with a dot, or a series of dots if it is 'linear' (eg ditches or banks). Write down the number you have assigned it (eg **SO6715/09/001**) next to the dot(s). Fill in a **FEATURE RECORD** form. If your feature has already been given a number by Gloucestershire County Council please make sure this is included on the record form.

- ***If the feature is not visible on the Lidar print***

Lidar gives you an exact location, so if your feature does not show on the printout you will need to locate it using the 30m tapes from known points on your OS map or Lidar printout. You will need to find a minimum of two fixed reference points on your map which you can find on the ground. These features can be boundaries, fences or walls, the junction of paths or the intersections of streams. You may find a fixed point just outside the boundary of your wood, such as buildings that are marked on your map but do not trespass on private land. Please note that trees are not fixed points! If you have identified features on your Lidar print such as charcoal platforms which you can locate on the ground these can also be used.

Measure your feature from at least two fixed reference points and mark it on the map or the plain Lidar printout at the intersection of your measurements. Write the relevant feature number next to this mark. Repeat this again to check your result. If there are no fixed points nearby you can measure the distance by pacing them out.

Make a note of whether you used the 30m tapes or paced it out. If you paced it make sure you record the number of paces you take as well as the approximate distance in metres. If you can only find one fixed point, use pacing together with a bearing from a compass to roughly locate the feature. Instructions for taking a compass bearing will have been provided during the training day. If you can't find any fixed points take a grid reference of where you think you are using the OS map provided.

If you are recording a 'linear' (eg ditch or bank) try to take readings at the two ends of the feature.

If the feature has been identified by GCC but you cannot find it on the ground

Make sure you have a good hunt round for it! You may want to think about coming back on another day when the weather or sunlight might be different. If you still can't find it fill out the **FEATURE RECORD** sheet anyway, making sure you include the Lidar Number. In the discussion box please describe what you did, how far you looked around the area and anything else which may explain why you could not find it. For example is the area covered in dense bracken or brambles, and/or is it part of a new conifer plantation?

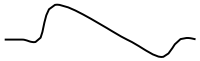
Now that you have fixed the location you can carry on recording

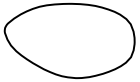
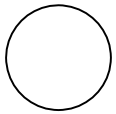
Fill out the **FEATURE RECORD** sheet. An example of how it should be filled out is included at the end of this handbook. If you have a GPS you are welcome to use it when recording the grid reference on the form, but please be aware that some units are very unreliable under tree cover, so please also use the measure and mark method described above to locate your feature on the Lidar printout/OS map.

Use the **Identification Toolkit** to identify the *FEATURE TYPE* and see if you can interpret what the feature may be.

Measurements and drawings

On the back of the **FEATURE RECORD** is an area to include measurements and drawings. Please try to include as many measurements as possible, and draw how the feature measured to a set scale. You may want to do a sketch drawing first so you get a feel of how it looks, before doing the measured version. Use the tapes provided to take the measurements for your drawings. Please try to include both a *PROFILE* and *PLAN*:

PROFILE sketch eg banks  ditches  mounds 

PLAN sketch eg hollows  mounds 

Your drawings may need to be at different scales so please make a note if this is the case.

Taking photos (optional)

If possible take a photo of each feature, with either one or two of the ranging poles included to give a sense of scale. They can be laid alongside the feature on the ground or upright, depending on the vegetation and the shape of the feature. If you do not have a ranging pole, use a person to give scale. Note how many photos you have taken of the feature on the **FEATURE RECORD** form. Be aware that many features do not look clear, or even visible, on photos!

Write the feature number and the direction of north in large letters on a piece of paper, clip this to the back of the weather writer and include in the photo. This will allow us to identify the feature in the office!

Finally check over what you have done!

- Have you located and numbered the feature on your Lidar printout or OS map?
- Have you filled out every part of the **FEATURE RECORD** form?
- Have you done the measured drawings?
- Have you taken a photo?

Carry on with your survey!

At the end of each day

Fill out the Day Record form

At the end of the days surveying fill out the **DAY RECORD** form and make sure you include a list of every feature you recorded. Make a note of which part of the survey block you covered so you don't miss out any parts on future days. Please make sure you record how many hours you spent in the wood doing the survey. This number is very important to the Forester's Forest project as the success of the project and funding for the main phase of the project will depend on how many volunteer hours are completed.

Staple all the record sheets together and file them back into the document folder. If you have taken any photos you can upload them directly using the Google Drive folder (if you have a Google account) or liaise with Andy. Small numbers of photos (less than 10mb in total) can be emailed but please don't compress them. The paper records and photographs will form part of the archive for future reference and research. Please return the kit to where you collected it so other groups can use it as necessary.

Finally, when you think you have finished a survey block please check that you have visited every feature identified by Gloucestershire County Council. It is important that each of these is checked. If the feature was inaccessible please record this on a record sheet.

UNEARTHING THE DEAN: FEATURE RECORD

UNIQUE FEATURE NUMBER:
Example: SO6715/09/001
SO6114/02/001

8-figure **GRID REFERENCE:**
for example SO 4765 3219
(do not round up the numbers!)
SO 6150 1480

Is the feature **VISIBLE ON LIDAR**? (Yes) No Partly Lidar No: SO6114/14
If the feature is visible on Lidar but not visible on the ground please describe the area and vegetation cover in the description box below

Is the feature **RECORDED ON HER**? Yes No Partly HER No: T.B.C.

Is the feature **RECORDED ON MAPS**? (Yes) No Partly OS edn: 1881/1903

TOPOGRAPHY: Valley floor (Gentle slope) Moderate slope
Steep slope Crest Level ground Other: _____

FEATURE TYPE
please circle one from the list below

(levelled area)
single bank
multiple banks
mound – circular
mound - not circular
hollow - circular
hollow - not circular
watercourse, ditch, drain
disturbed ground – shape unclear
other (eg notable tree)

DESCRIPTION of feature

A LEVELLED AREA CUT INTO THE HILLSIDE, WITH A CHARCOAL RICH SOIL VISIBLE THROUGH THE LEAF LITTER. IT IS ROUGHLY CIRCULAR IN PLAN, AND THERE IS A SMALL DEPRESSION IN THE MIDDLE OF THE PLATFORM.
A VERY OLD COPPICE STOOL IS LOCATED ON THE SOUTH EASTERN EDGE OF THE PLATFORM - SEE PLAN

INTERPRETATION of feature (possible identification) *please use the Identification Flowcharts*

CHARCOAL BURNING PLATFORM

CONFIDENCE of interpretation: low med (high)

CONDITION of feature: good fair eroded (damaged)

Discussion on condition: WEST QUADRANT IS NOT DAMAGED

Reason for damage: WILD BOAR DISTURBANCE

Is the feature **PART OF,** or **JOINING ONTO**, another feature? Give feature number(s):
(it is useful to sketch the relationship over the page)

PART OF A GROUP OF CHAR. PLATFORMS INC SO6014/02/002-5

PHOTO(S) taken? (Yes) No Photo reference(s) and direction facing: _____

IMG_0537 facing NE and IMG_0538 facing SE

Suitable directions are N, NE, E, SE, S, SW, W, NW

Please turn over

UNEARTHING THE DEAN: FEATURE RECORD

UNIQUE FEATURE NUMBER: SO6114/02/001
Example: SO6715/09/001

MEASUREMENTS *state whether estimated or measured*

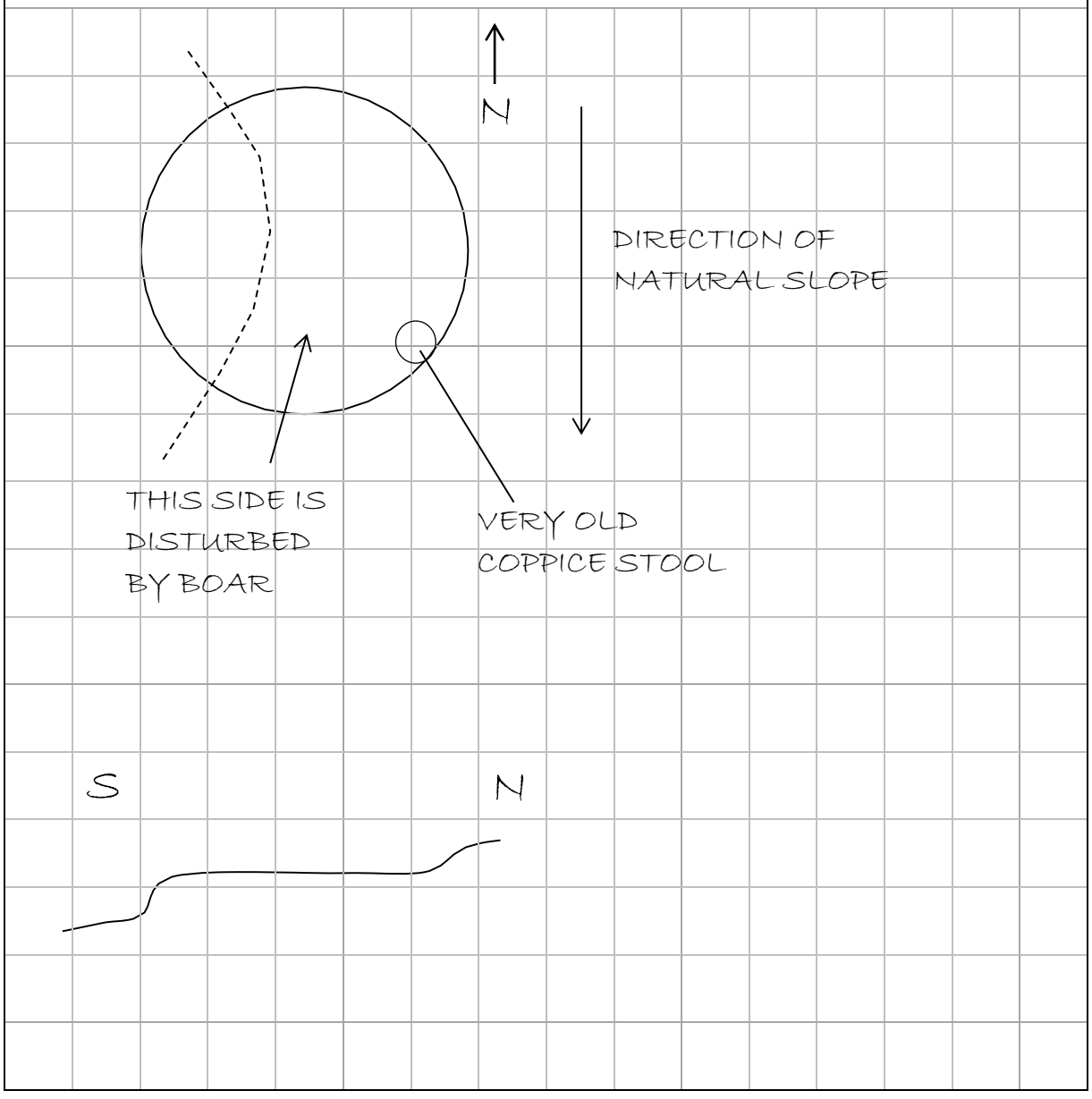
Length	Width	Height/depth	Diameter	Circumference
		0.5m	4.8m	15m

Your sketch should show the dimensions of the feature.

Use the grid at a scale to suit the feature and note the scale. Each square = (for example: Each square = 10cm, 50cm, 1m, 2m)

1m

Show the orientation by drawing an arrow pointing North (use the compass)



heritage lottery fund
LOTTERY FUNDED

FORESTERS' FOREST

UNEARTHING THE DEAN: DAY RECORD

AREA NAME: GREAT BOURTS **DATE:** 20/10/15

SURVEY BLOCK(S) VISITED: SO6114/01

PARTICIPANTS: ROB HEDGE, JUSTIN HUGHES
ANDY WALSH

TOTAL VOLUNTEER HOURS: 6H 15MIN

WEATHER CONDITIONS: TODAY: DRY AND SUNNY
PRECEDING 3 DAYS: WET (19/10/15), DRY (17-18/10/15)

FEATURES RECORDED TODAY:

SO6114/02/001
SO6114/02/002
SO6114/02/003
SO6114/02/004
SO6114/02/005
SO6114/02/006

GENERAL COMMENTS:

COULD NOT ACCESS NORTH EAST CORNER OF GRID DUE TO DENSE VEGETATION. WILL RETURN LATER IN WINTER TO CHECK

LAND USE: Amenity ☐ Forestry ☒ Private ☐
Other: _____

CHARACTER OF THE WOOD:
(e.g. deciduous / coniferous / mixed; wetland areas / heath / common)

DECIDUOUS, CONIFEROUS PLANTATION TO SOUTH OF FOREST TRACK

EVIDENCE OF HISTORIC WOODLAND MANAGEMENT?
(e.g. coppice stools or pollarding)

OLD COPPICE STOOLS. THEY WERE ONLY VISIBLE TO NORTH OF BANK SO6114/02/006

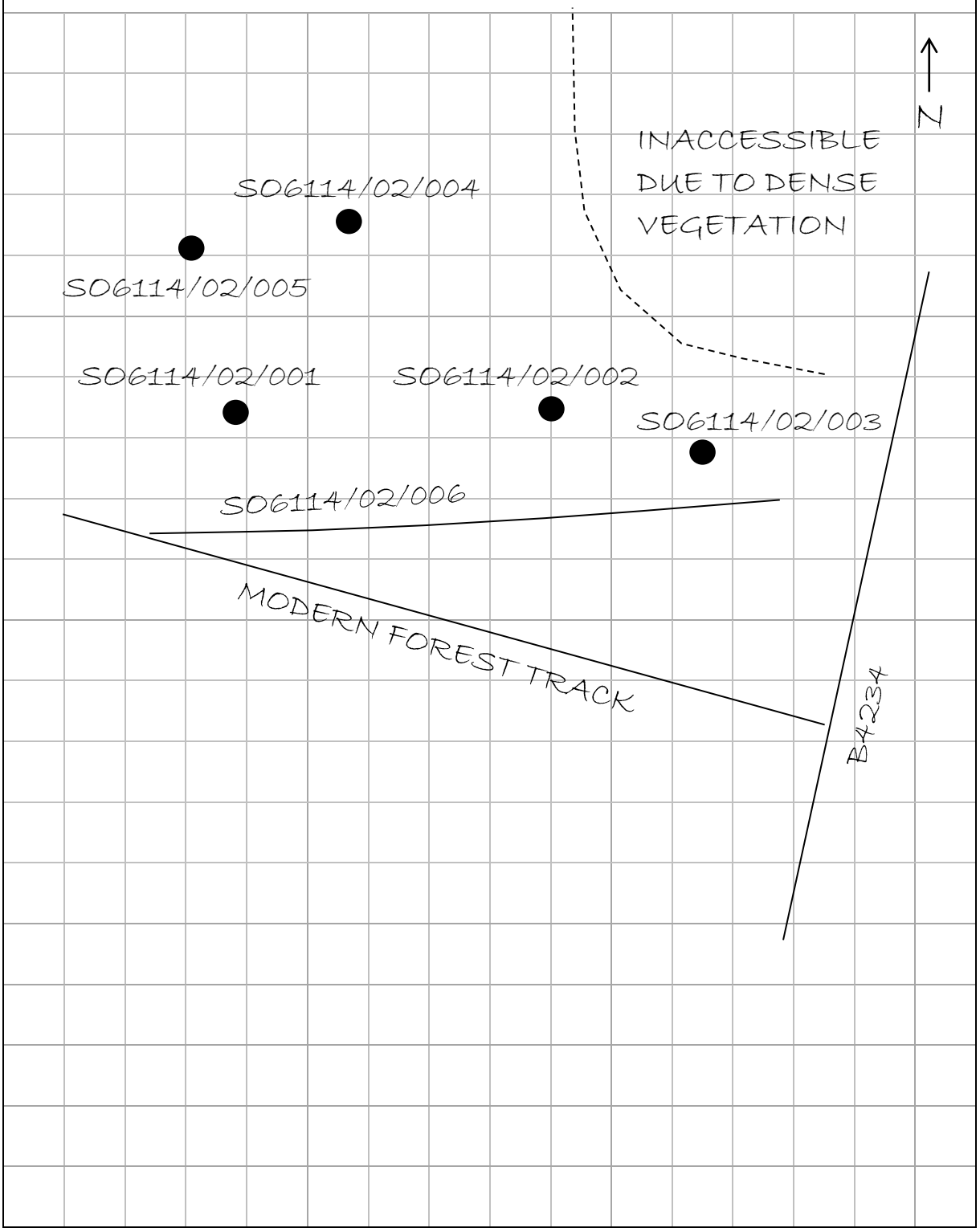
UNEARTHING THE DEAN: PROGRESS RECORD

SURVEY AREA SKETCH PLAN

Use the grid at a scale to suit the area and note the scale. Each square = (for example: Each square = 5m, 10m, 20m)

20m

Show the orientation by drawing an arrow pointing North (use the compass)



eastsussex.gov.uk

East Sussex
County Council

Feature Identification Charts
a toolkit for wooded landscapes

Historic Environment Awareness Project - led by East Sussex County Council and involving West Sussex County Council and Kent County Council, as part of the Weald Forest Ridge Landscape Partnership Scheme.

WEALD FOREST RIDGE Landscape Partnership

heritage lottery fund
LOTTERY FUNDED

ENGLISH HERITAGE

west sussex county council

Kent County Council

HIGH WEALD JOINT ADVISORY COMMITTEE

Wooded landscapes - Feature identification

HOW TO USE THIS TOOLKIT

In this Toolkit, the archaeological features you may find are divided up into 8 different sections. The sections are based on what the features look like. The sections are:

- **Levelled areas**
- **Single bank**
- **Multiple banks**
- **Mounds – circular**
- **Mounds – not circular**
- **Hollows – circular**
- **Hollows – not circular**
- **Watercourses, ditches & drains**

When you find a feature, look at its shape and form to decide which section it fits into. If you are doing a Survey and using the Feature Recording Forms, the sections are listed on these (also listed are 'Disturbed ground' and 'Other' for those features which don't fit it into any section).

Each section has a flowchart. Follow the flowchart down the page until you come to a possible identification. If you can't identify the feature using one section, try another. Some features may fit into more than one section. And remember, you will not be able to identify everything you discover! The underlined features are shown as they may have looked when in use.

At the end of the Toolkit is a section showing Significant Trees, to enable you to identify these.

If you would like help to identify features, contact the South East Woodland Archaeology Forum on -

http://www.sewaf.org.uk

WHICH FEATURES ARE IMPORTANT?

It is important to record all archaeological features - this will give you a more complete story of how the landscape was used in the past. It will also help you to work out the relative age of features to each other.

YOU WILL NOT BE ABLE TO IDENTIFY MANY FEATURES!

Interpretation will always be open to discussion. Remember that a feature may have had more than one use; for example, the ditch alongside a woodbank may have been used as a trackway and become wide and hollowed out by feet and hooves over time.

Always walk around any feature you find, to see its full shape and extent. Obviously this isn't possible with banks that disappear into the distance, or enormous holes and mounds.

Boundaries & tracks

Many boundaries, such as woodbanks, may be marked on maps, even though they're no longer in use. Tracks may also be marked. Some of these features might be very old, some more recent. Although many are already accurately plotted, you should still fill in a recording form to record the shape and condition of these features if they appear to have historic origins.

Changing landscapes

The shape and size of banks and ditches depended on what they bounded. Those around fields differed from those around woods or parkland. However, the field may now be tree-covered and the wood may have been cut down, so the land use is now very different. Some banks and ditches were adapted for new uses. Remember how the landscape may have changed when you find these features.

Significant trees

These should be recorded wherever they are found. This is most often on banks or next to tracks.
A significant tree is one that has been managed or is very old.

WHAT WE HAVE LEFT OUT:

Quarries

Can be any shape or size. They haven't been included within the charts for this reason, but they should be recorded. There may be spoilheaps nearby. The hole may now be filled with water and look like a pond.

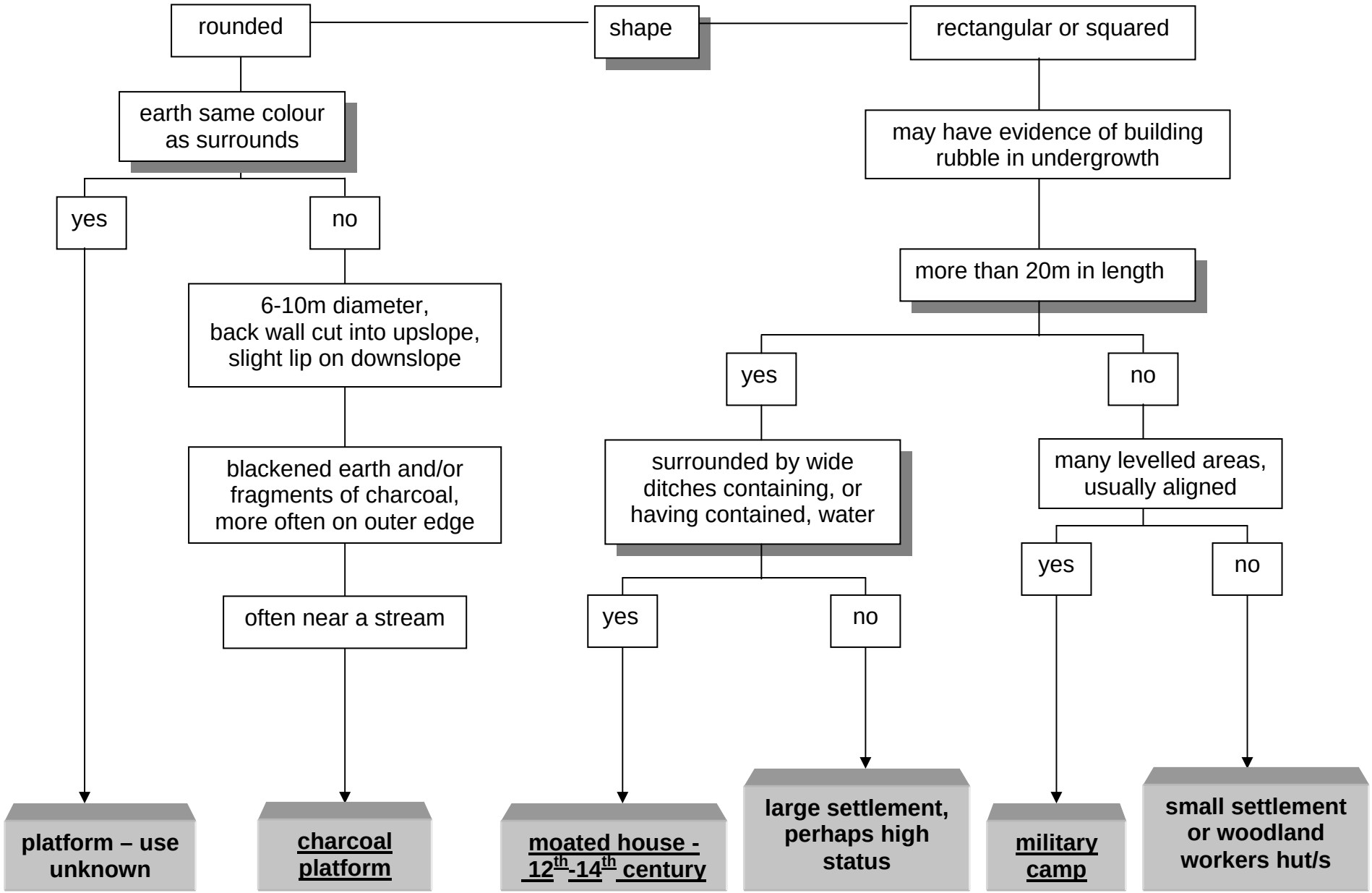
Military features

Come in many shapes and sizes and it isn't possible to include them all. If you cannot identify an unusual feature it may have military origins.

Tree throws

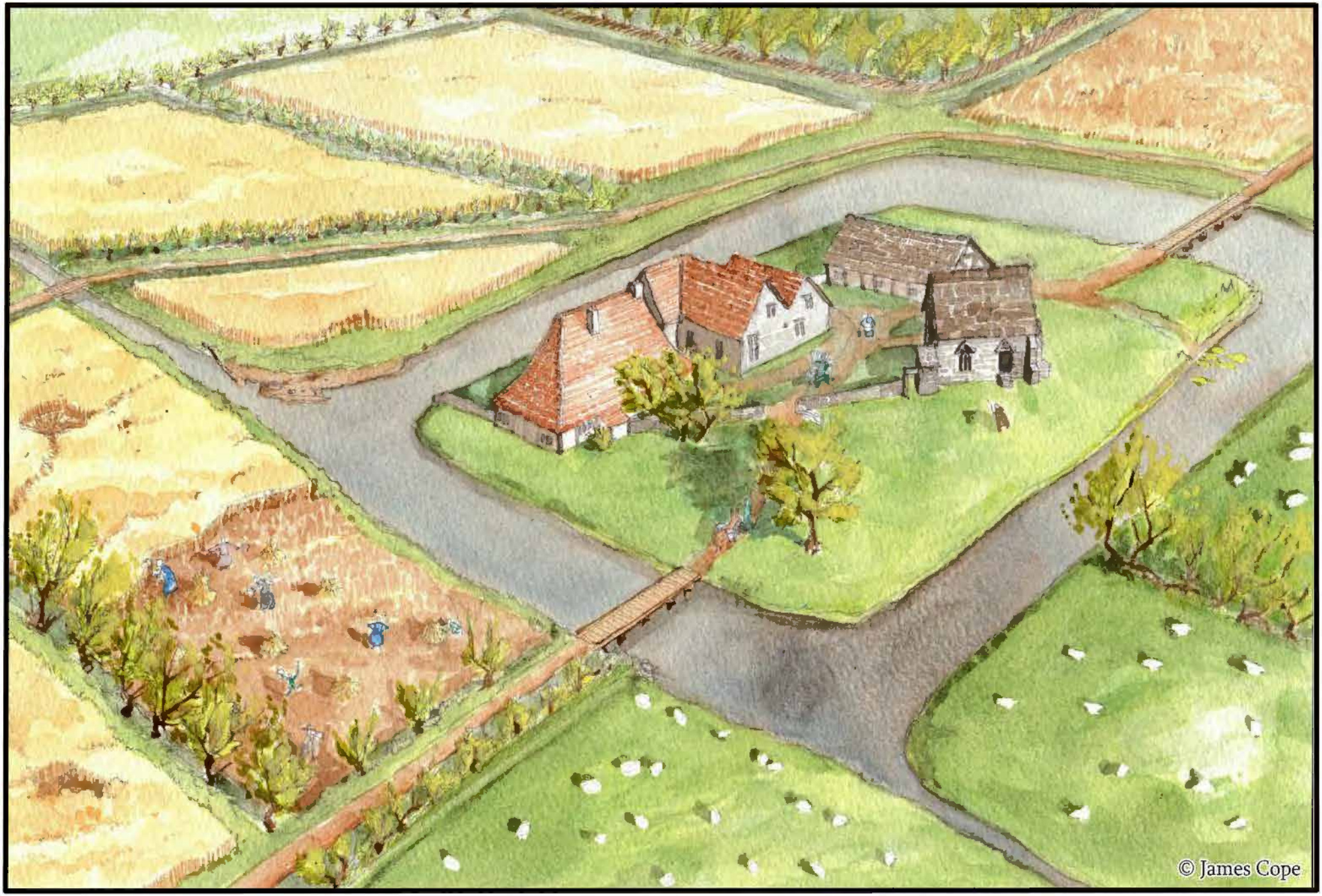
Are the circular hollows left when large trees fall. A lot of damage was done to woodland trees in the 1987 and 1991 storms and tree throws may be visible, many with the remains of the trunk. They don't need to be recorded unless you think that the tree was very old and therefore significant.

LEVELLED AREAS



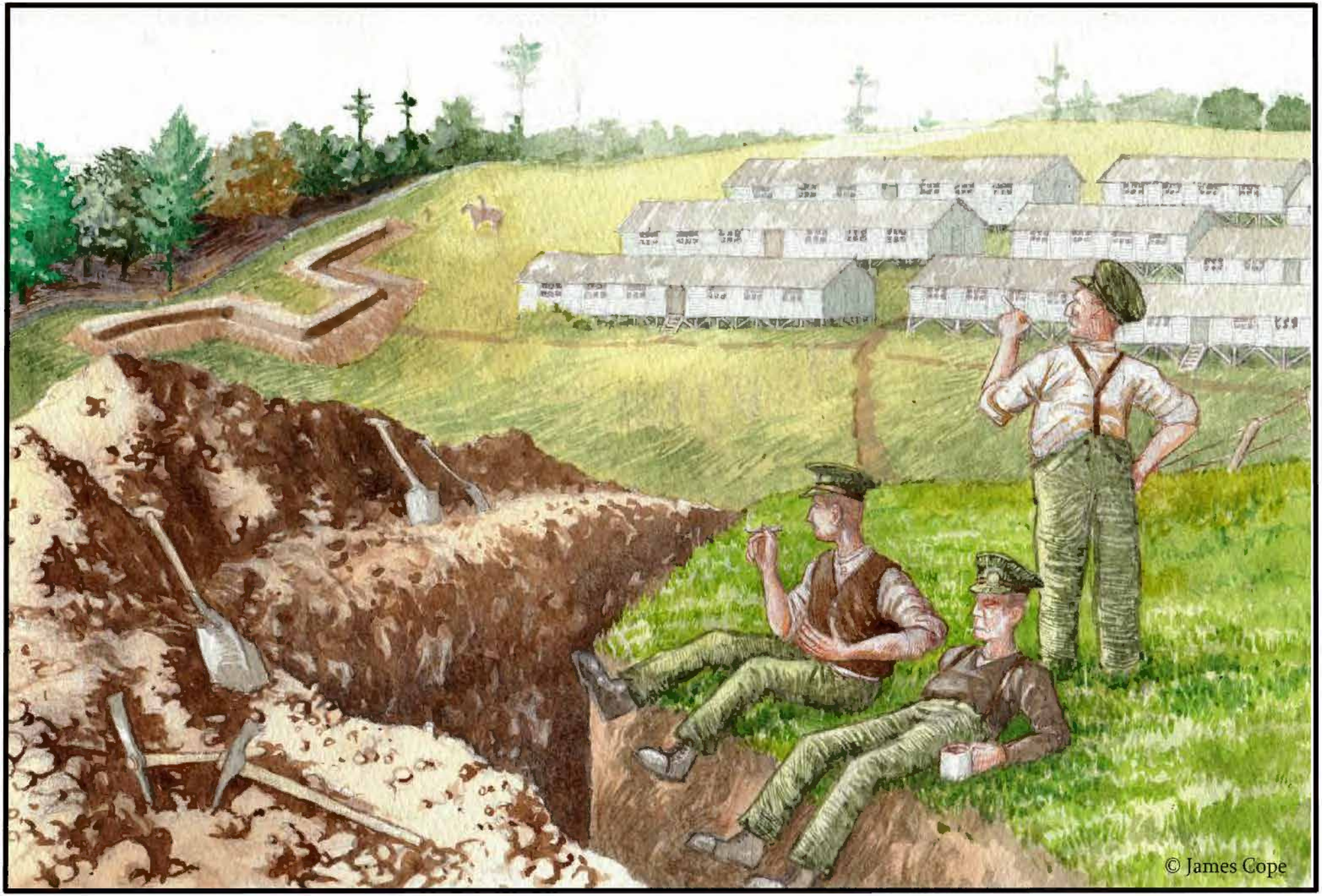
LEVELLED AREAS

Charcoal platforms were rounded level areas made for a 'clamp' to be built, often near a stream



LEVELLED AREAS, and DITCHES

Manor houses with a surrounding moat were built in the medieval period

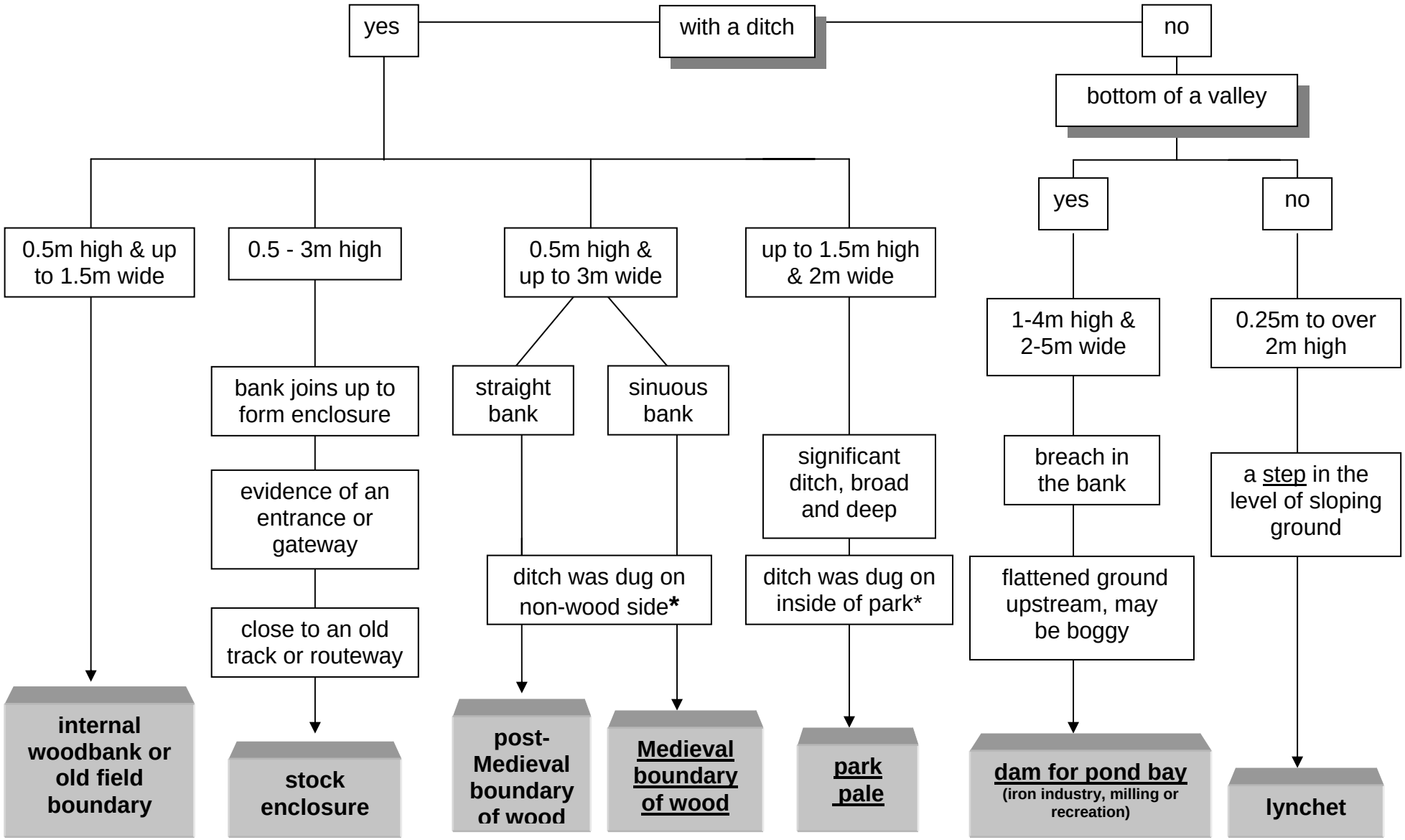


LEVELLED AREAS, and HOLLOWS - not circular

Military camps, often of WWI but also of WWII and the earlier Napoleonic era, often had associated trenches

SINGLE BANK

SIGNIFICANT TREES (see flowchart) ARE OFTEN FOUND ON BANKS. NOTE THEM WITHIN THE DESCRIPTION BOX ON THE FEATURE RECORD FORM.



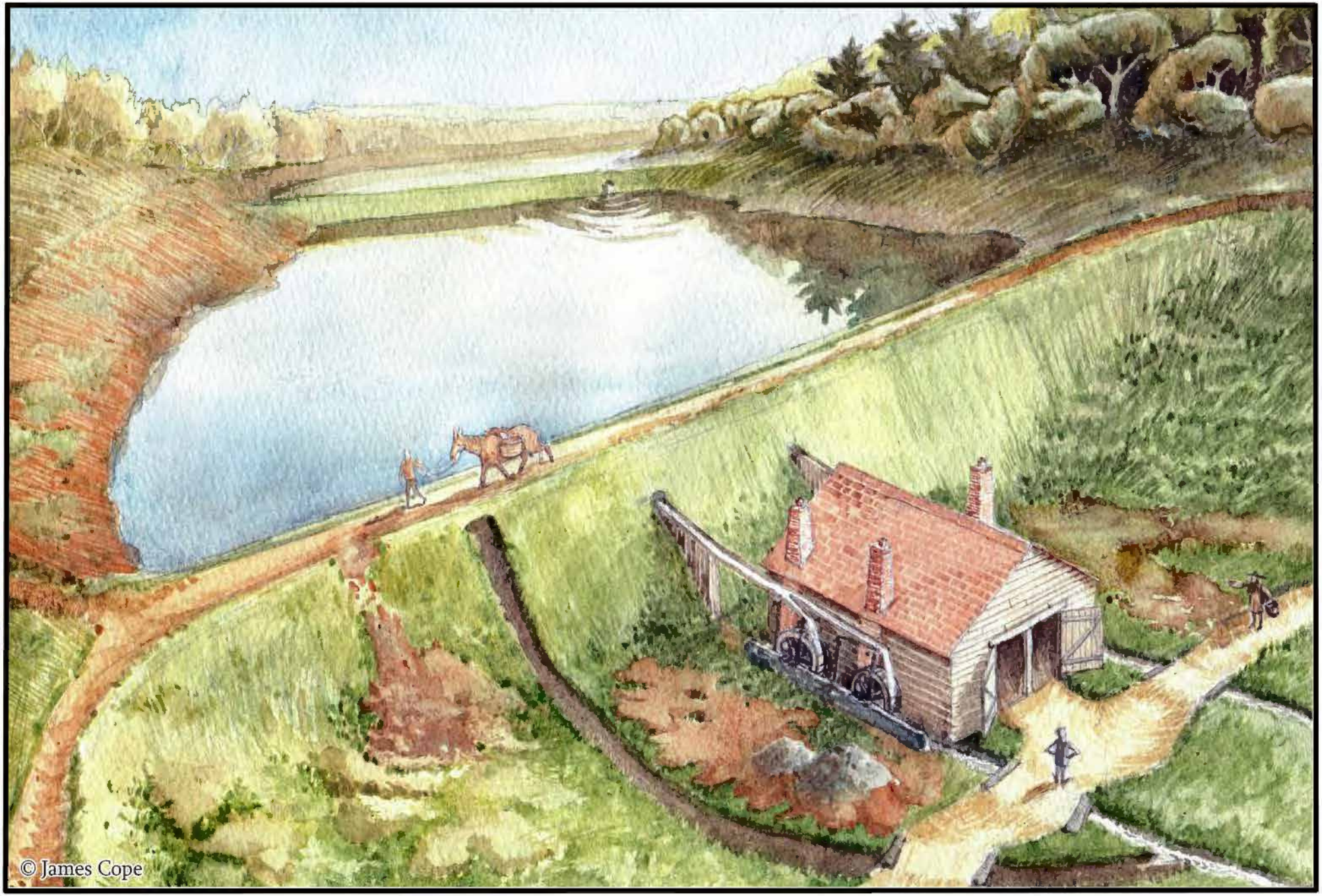
* Woodland may have grown up on the other side of the bank too, or have been felled on the original side. Be aware that the wood may have disappeared or changed sides!

SINGLE BANK

A woodbank enclosed valuable areas of woodland

SINGLE BANK

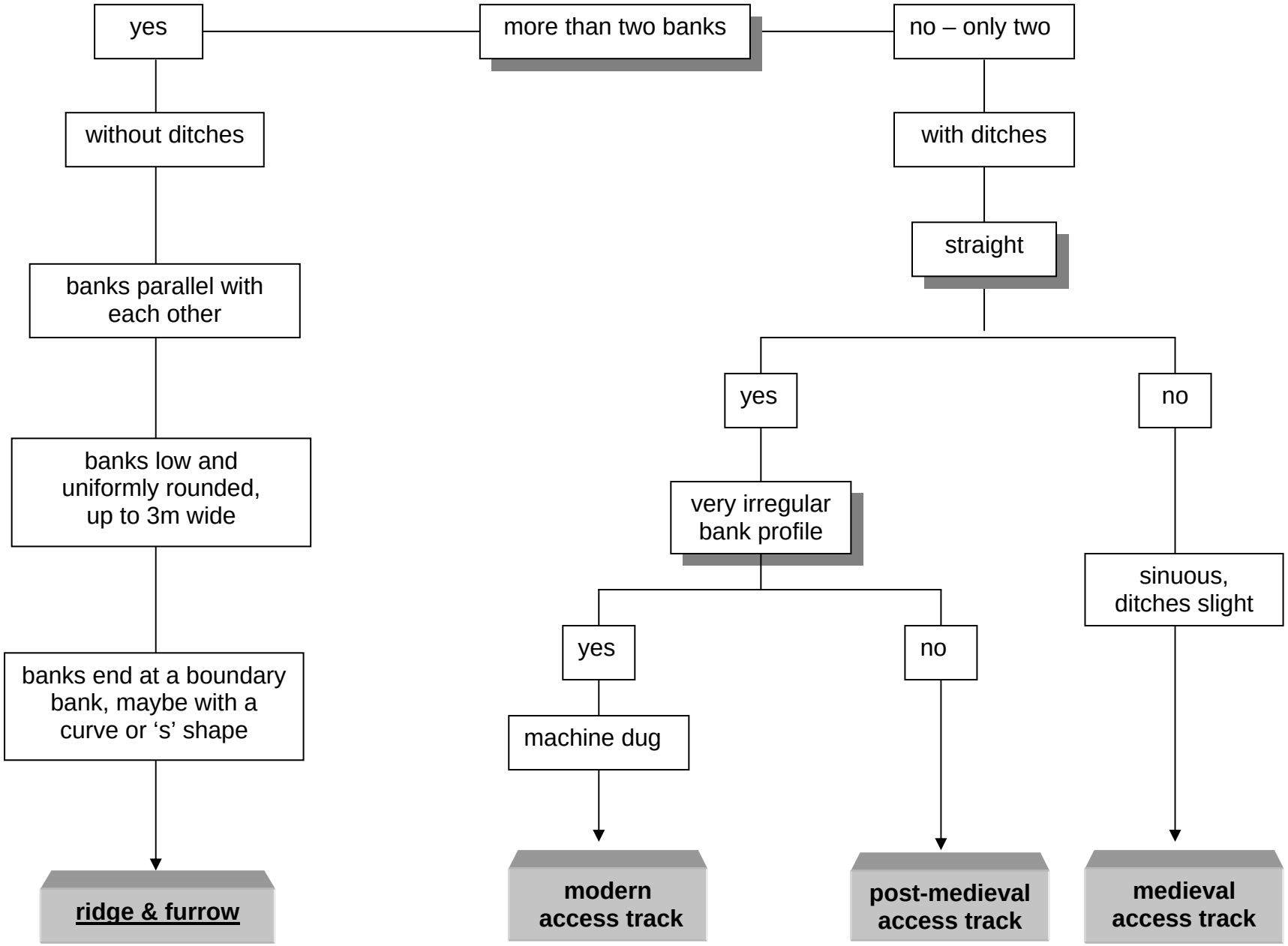
Park pales had a high bank with a deep ditch on the inside of the Park, to stop deer escaping



SINGLE BANK

Pond bays were large dams creating a water supply to power mills, furnaces and forges

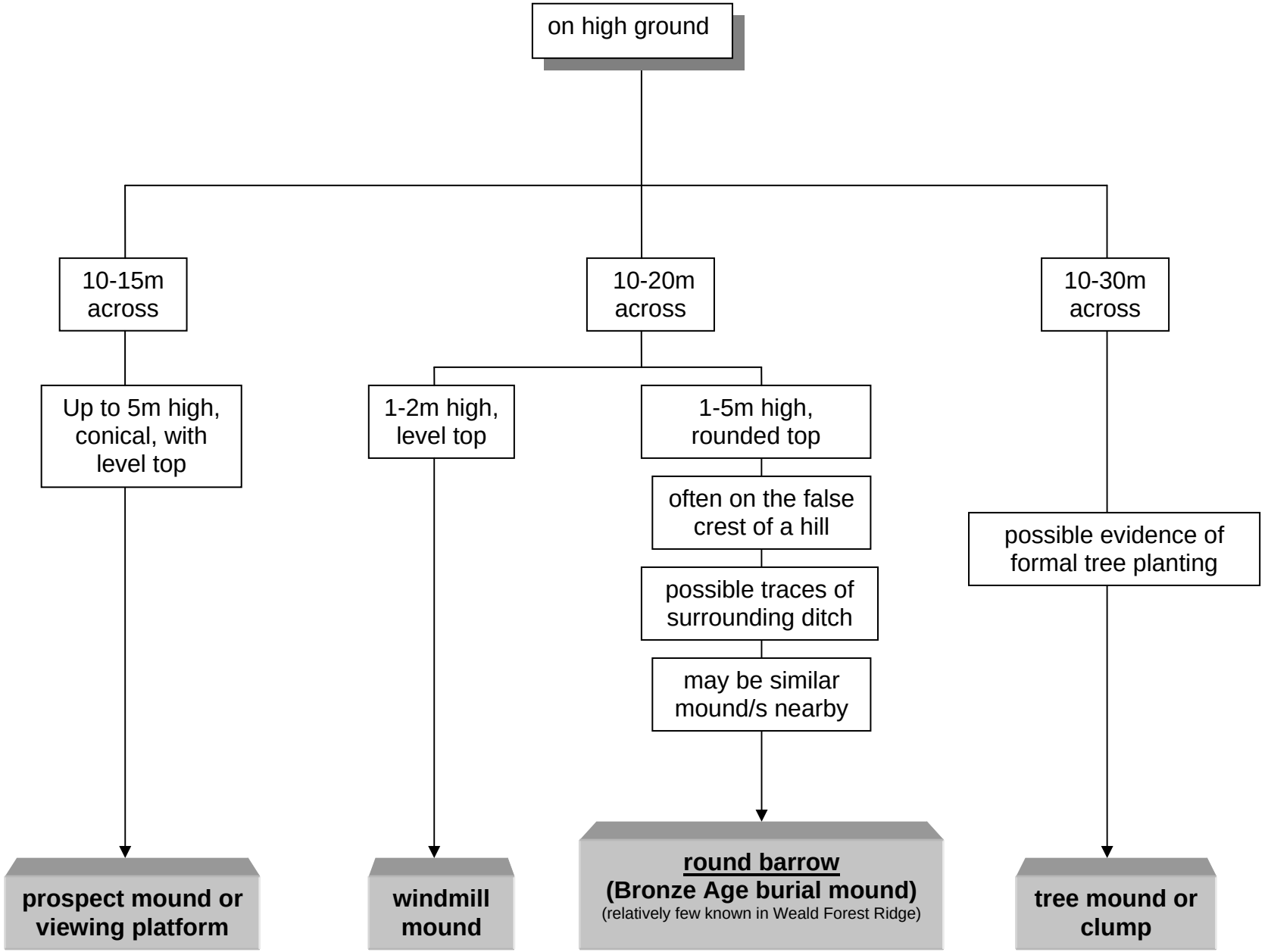
MULTIPLE BANKS



MULTIPLE BANKS

Ridge & furrow was created by the plough turning soil to one side, making mounds

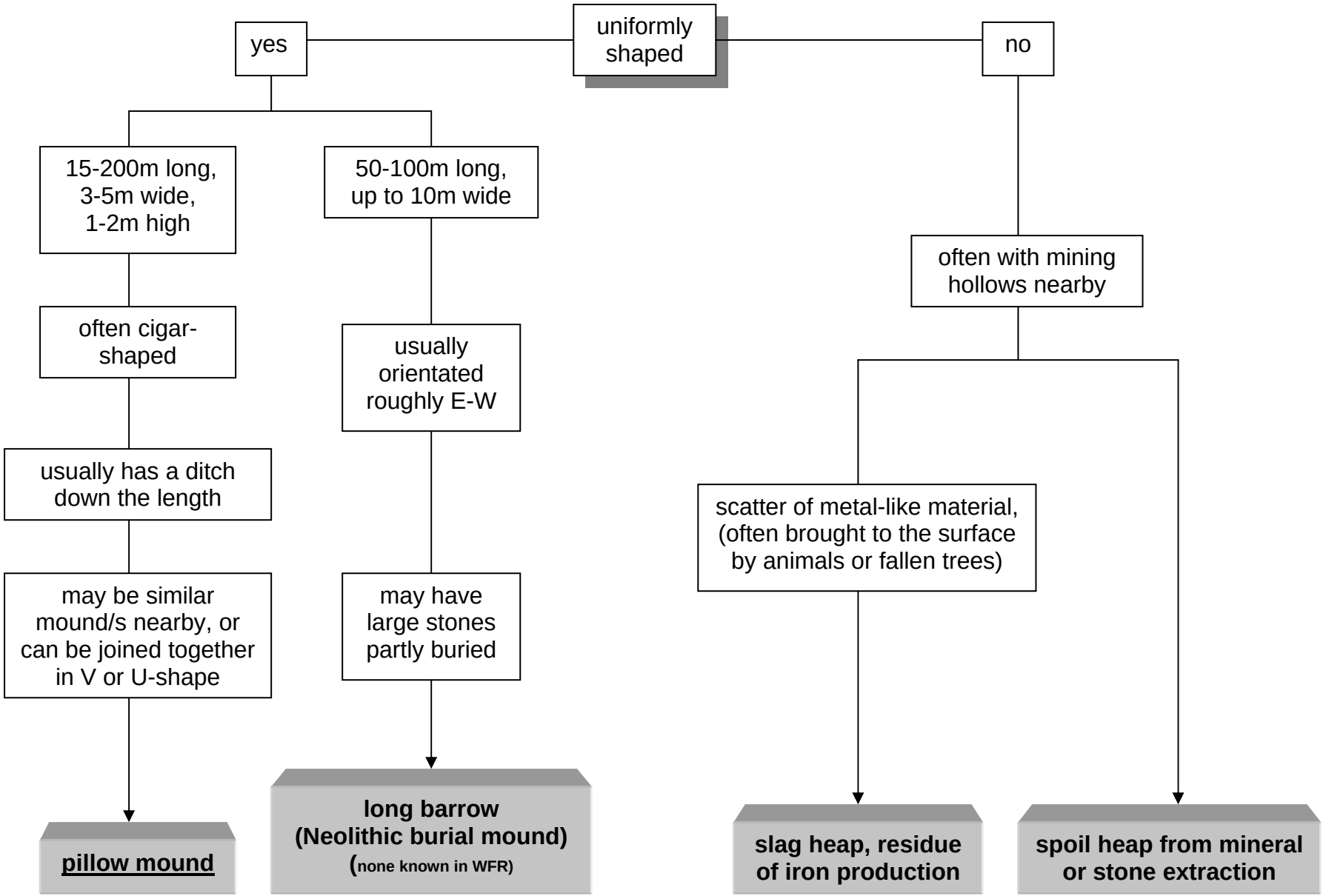
MOUNDS – circular



MOUNDS - circular

Round barrows were built in the Bronze Age and often contained burials

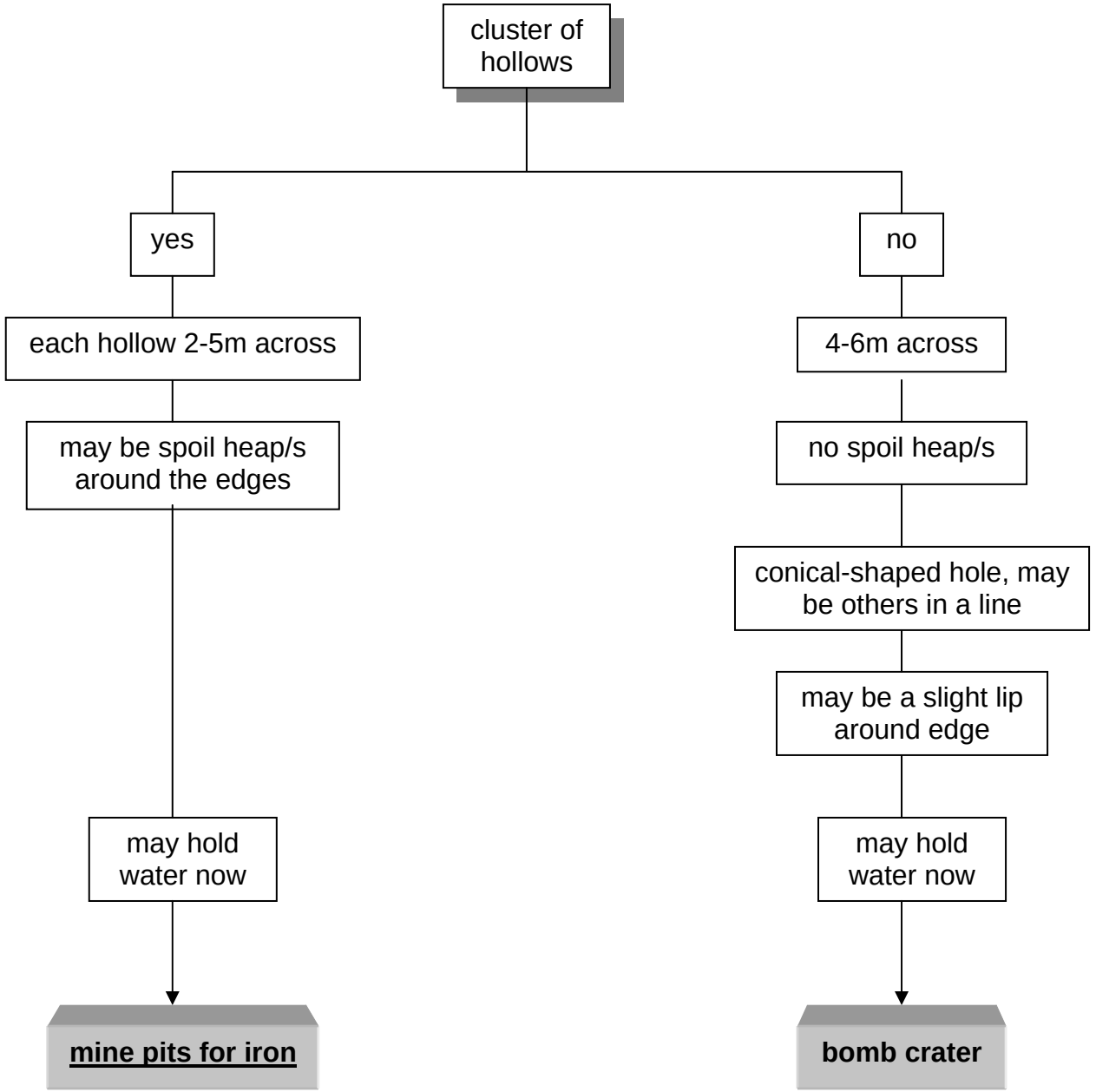
MOUNDS – not circular



MOUNDS - not circular

Pillow mounds were built to farm rabbits for their meat and fur

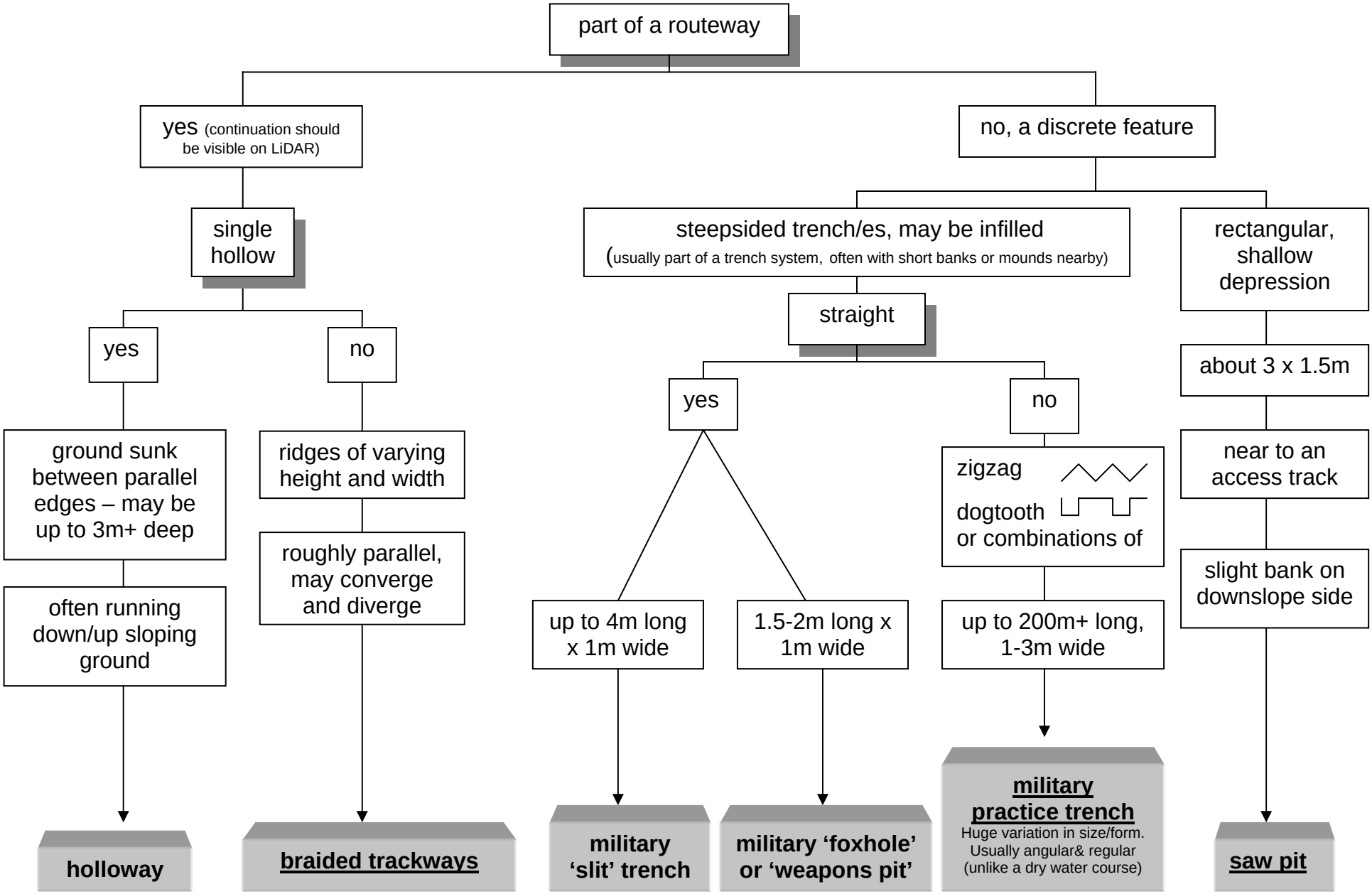
HOLLOWS - circular



HOLLOWS - circular

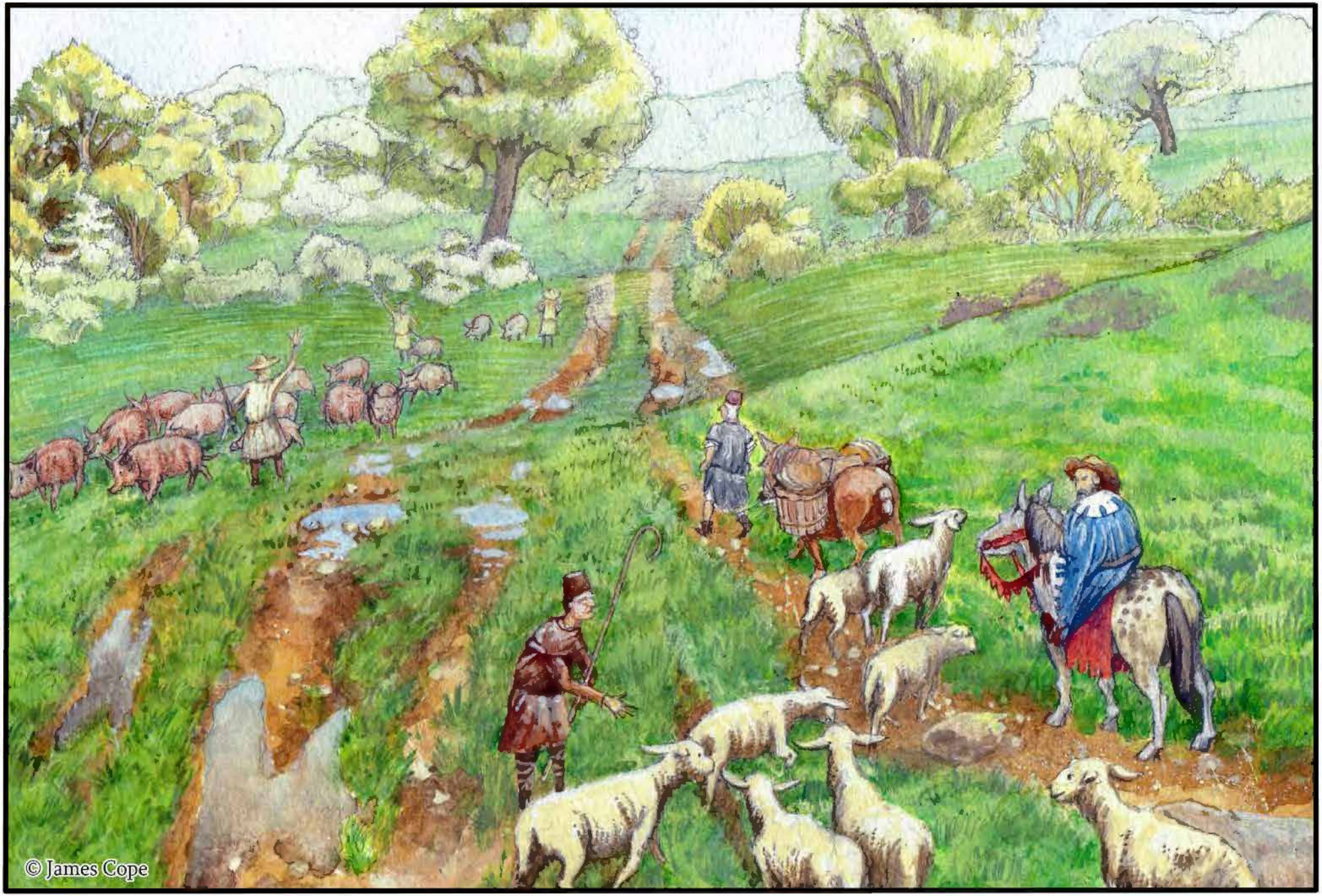
Iron ore was mined from many small holes clustered together

HOLLOWS – not circular



HOLLOWS - not circular

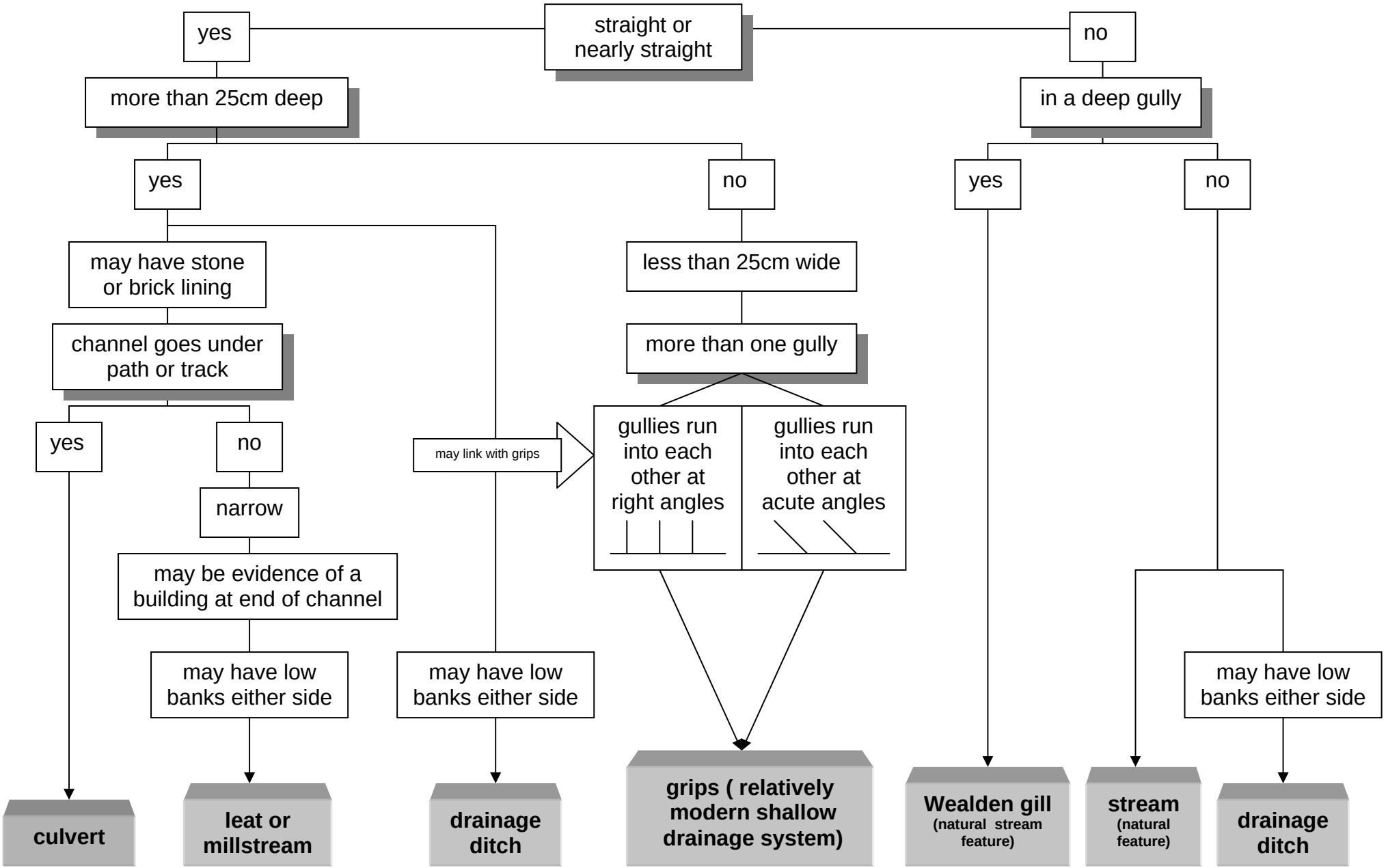
Saw pits were used to cut timber to size, by the 'underdog' and 'topdog'

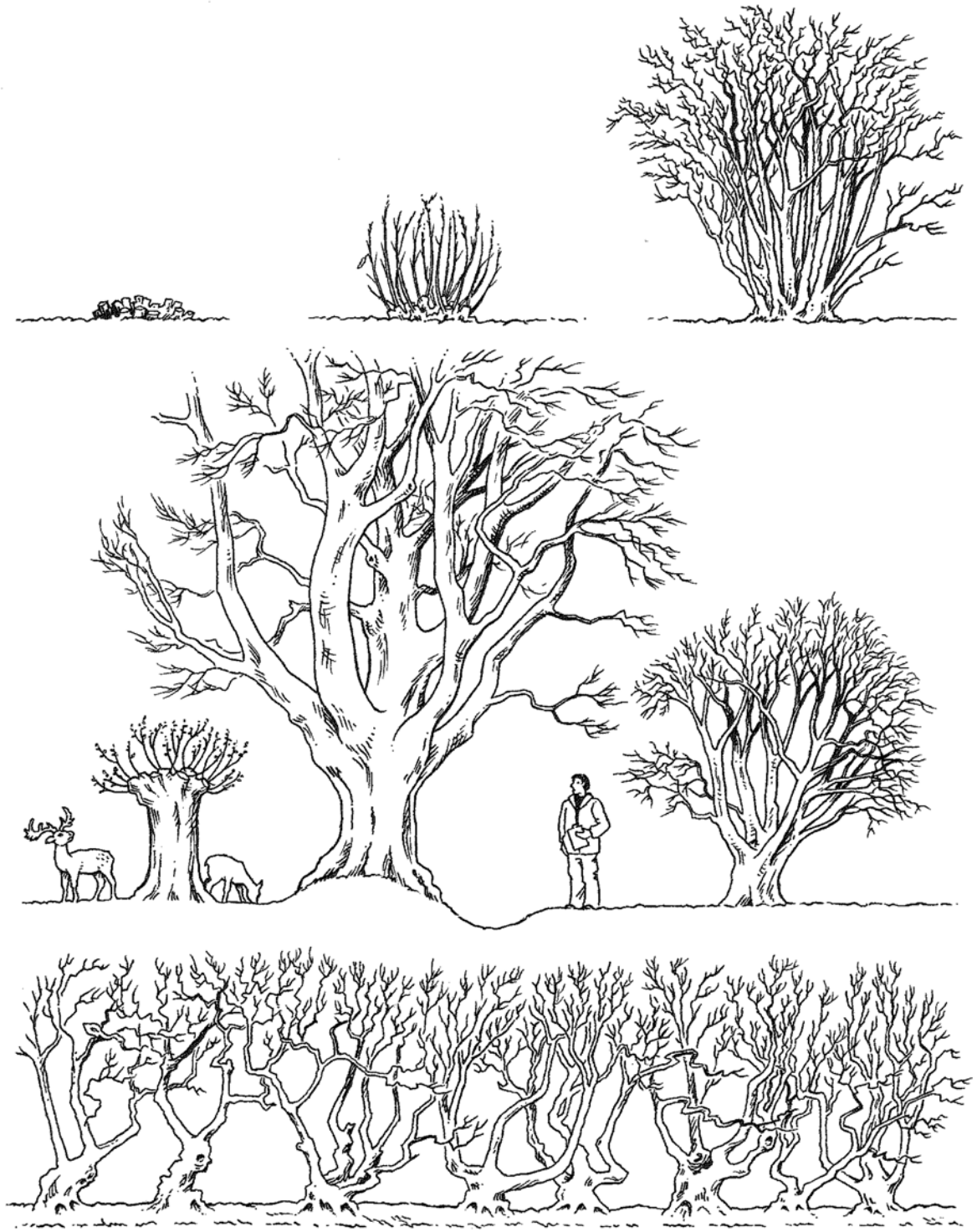


HOLLOWS - not circular

Braided trackways were created by travellers migrating sideways to avoid ruts and mud

WATERCOURSES, DITCHES & DRAINS (may now be dry)





SIGNIFICANT TREES

Top:

coppice stools, l to r – newly cut, young re-growth, mature re-growth

Middle:

left – pollarded tree, new re-growth out of reach of grazing animals

centre – outgrown pollarded tree

right – a ‘stub’, cut at a height between coppice and pollard often used as a boundary marker

Bottom:

grown out laid hedge

Health & Safety Handout:
Lidar Validation and Earthwork Survey

Introduction

All New Volunteers to the Foresters' Forest Project need to receive an induction covering Health and Safety and emergency procedures for the activities they are undertaking.

This Handout and Induction is for undertaking Lidar validation and earthwork survey in the Forest to:

- validate earthwork sites identified through Lidar survey
- identify new earthworks sites
- record these earthwork sites.

The Handout and Induction are designed to help you to contribute to this element of the project as safely as possible, so it is important that:

- you listen to the induction carefully,
- refresh your memory about the issues involved each time you go out into the Forest to do some surveying, and
- ensure that you understand the information provided to help reduce the risk of accidents and injuries, make more efficient use of the equipment and increase your enjoyment of the work.

Please abide by the advice provided and ensure you follow any instructions provided by the team leading this work at all times. In particular take some time to read the Risk Assessment attached to the end of this document as it identifies the hazards you may encounter and how to avoid them.

You will be asked at the end of the induction to sign a form recording that you have received and understood this induction so please don't hesitate to ask if anything is unclear.

After this Induction, at any stage in the project, please do not hesitate to ask for guidance or assistance if you feel unsure about anything.

General

Under the Health and Safety at work act, we are required to ensure that your time with us is as safe as possible, to achieve this it is essential that you should:

- Always wear suitable clothing and shoes for the type of work you will be undertaking. The survey work you will be undertaking will be in woodland and forest and will be undertaken through the late Autumn, Winter and early Spring so please ensure you wear clothing that will keep you warm and dry and stout shoes, or preferably boots, suited to wet, muddy and uneven ground conditions.

- Always wear any additional personal protective equipment (PPE) that you are given and asked to wear. In this case hi-viz jackets will be issued to be worn when working in the Forest.

- If you are accompanied by a member of our staff, please follow any instructions given by them. If you do not understand or are unsure about what to do please ask for clarification.

- Use equipment correctly as demonstrated and report any defects as soon as possible to a member of staff. Do not use damaged equipment as it may be dangerous.

- Please try to always work in pairs or larger groups when surveying in the Forest as not only is this safer but also usually results in a higher quality of survey – two pairs of eyes and two people working together can spot hazards better as well as archaeology better!

- Be considerate of anyone you are working with to ensure his or her safety. They may not be as fit or agile as you are so always allow the pace you walk and work at to be set by their capabilities rather than yours.

- Please report any hazards that you encounter, even if you think they might be trivial. We may have missed them.

- Take notice of any warning or restriction signs and follow their advice or instructions.

- Do not use equipment you have been asked not to or have not been trained to use.

- Do not attempt to do anything that you feel uncomfortable doing.

- Take regular breaks to prevent fatigue; accidents are more likely to happen when tired.

- Inform us as immediately as you can if you have an accident so that we may record it regardless of severity.

- Inform us immediately if you have a near miss that may have caused you or anyone else an injury so that can take actions to help prevent a reoccurrence.

We will ensure that:

- You have received instruction on how to use tools safely and why we are carrying out the work.

- You are supplied with any additional PPE or other safety equipment when required.

In the event of an Emergency:

- Remain Calm
- If needed use the emergency contact list provided below to call for an ambulance, give your location and a brief description of the emergency.

Emergency contact details

Minor injuries:
Dilke Hospital, Speech House Road,
Cinderford,Gloucestershire, GL14 3HX
0300 421 8640

Lydney and District Hospital, Lydney,
GL15 5JF
0300 4218722

Alton Street, Ross- On- Wye,
Herefordshire, HR9 5AD
01989 562100

Serious injuries:
The County Hospital, Union Walk, Hereford,
Herefordshire, HR1 2ER
01432 355444

Gloucestershire Royal Hospital,
Great Western Road, Gloucester, GL1 3NN
0300 422 2222

worcestershire countycouncil

RISK MANAGEMENT ASSESSMENT (to be completed by assessor)

Title (Activity/ Job/ Premises)	Unearthing our Heritage: Lidar Validation Survey	**Reference No:**	**P4588**
Location/Dept	Forest of Dean	**Assessor Name(s)**	Robin Jackson
Authorising Manager	Robin Jackson	**Authorising Mgr Signature**	
Overall Rating		**Review Date**	N/A

LIKELIHOOD	RISK/CONSEQUENCE				
	1 INSIGNIFICANT	2 MINOR	3 MODERATE	4 MAJOR	5 CATASTROPHIC
1 RARE	1 LOW	2 LOW	3 LOW	4 MODERATE	5 MODERATE
2 UNLIKELY	2 LOW	4 MODERATE	6 MODERATE	8 HIGH	10 HIGH
3 POSSIBLE	3 LOW	6 MODERATE	9 HIGH	12 HIGH	15 EXTREME
4 LIKELY	4 MODERATE	8 HIGH	12 HIGH	16 EXTREME	20 EXTREME
5 ALMOST CERTAIN	5 MODERATE	10 HIGH	15 EXTREME	20 EXTREME	25 EXTREME

Task/Equipment/ Materials/ Activity, etc	Hazard	(Risk) Consequences	Person(s) at risk	Existing controls currently used (What are we doing now?)	Risk evaluation			Additional control/ precautionary measures required	By Whom & By When initials & date	
					Severity	Likel- ihood	Rating			
WEATHER	Rain Cold Sun Fog Thunder and Lightning	Could get wet Could get chilled Could get sunburnt or heatstroke Could get struck by lightning.	ALL	Advise all staff and volunteers to wear correct clothing for outdoor working according to the season (eg waterproofs, boots and warm clothes in winter) Carry bottle of water. Work in pairs and have at least one mobile phone.	2	4	Low where existing controls are maintained	Check weather forecast beforehand Leave survey until weather conditions more favourable	Individuals undertaking survey	
WALKING IN AN UNFAMILIAR PLACE	Could get lost.	Distress. Dehydration. Could be late returning to car.	ALL	Survey teams will be equipped with maps of allocated survey grids to take with them on the survey. Survey equipment provided includes a compass. Survey methodology includes preparation stage to familiarise with area of survey and plan route through survey area Recommend work in pairs and have at least one mobile phone. Carry bottle of water. Do not work within one hour of sunset.	2	4	Low where existing controls are maintained	Inform somebody where you are going and when you expect to return	Individuals undertaking survey	
WALKING THROUGH WOODLANDS AND FOREST	Uneven ground surfaces and rutted tracks. Muddy and slippery ground conditions. Steep hillsides & valleys. Obstacles and obstructions across paths eg. Roots, fallen trees and branches, dense bracken and other undergrowth Stiles and bridges can be slippery. Gates can be rickety and have difficult catches	Injury (eg. cuts and bruises, twisted joints, broken limbs, concussion, etc) due to slipping, tripping or falling over.	ALL	Warn all staff and volunteers of hazards and emphasise additional hazard if it has been raining or snowing and where a combination of factors occurs. Ensure all staff and volunteers are capable of negotiating ground conditions in survey areas. Ask everyone to wear suitable footwear. Wear day- glow safety jackets. Recommend work in pairs and have at least one mobile phone. Do not work within one hour of sunset or in particularly poor weather.	3	4	Low where existing controls are maintained	Carry hiking poles Leave survey until weather/ground conditions more favourable Carry local hospital contact numbers	Individuals undertaking survey	
RIVERS , CANALS, STREAMS, PONDS, LAKES AND MOATS	Falling into river, canal stream, pond or lake. .	Could get wet and cold. Could get swept away by river or drown in any of the mentioned water hazards.	ALL	Warn all staff and volunteers of water hazards. Avoid river /stream banks unless crossing. Only use established crossings of streams, rivers and canals	4	2	Low where existing controls are maintained	Take extra care if it has been raining as wooden bridges become very slippery. Leave survey until weather/ground conditions more favourable	Individuals undertaking survey	

WILD BOAR	Encountering or disturbing wild boar	Injury due to charging, goring with tusks, bites and scratches.	ALL	Warn all staff and volunteers of the hazard Issue a copy of the Forestry Commission Advice poster to all staff and volunteers. Do not approach them. Go back the way you came or go around them giving a wide berth. Avoid walking through dense woodland. These are their safe resting & breeding areas. Put your dog on a lead as soon as you see one or they may get scared and react. Keep to a safe distance. Particularly if your dog chases or does not respond to calls immediate Recommend work in pairs and have at least one mobile phone.	4	2	Low where existing controls are maintained	Be especially careful if you suspect or see that the boar have young with them Carry local hospital contact numbers	Individuals undertaking survey	
DOGS	Dogs can attack	Injury due to bites and scratches.	ALL	Keep a look out for dogs not on leads. Recommend work in pairs and have at least one mobile phone.	3	2	Low where existing controls are maintained	If not sure of dog ask owner to put dog on lead.	Individuals undertaking survey	
INSECTS AND SNAKES	Could get stung or bitten by insects or snakes.	Allergic reaction to stings triggering asthma attack or Anaphylactic shock. Bite by adder can be fatal to young or elderly. Ticks may be present on sheep and have the potential to pass on lyme disease	ALL	Warn all staff and volunteers of hazards, particularly of adders if in area of suitable snake habitat. Wear boots and full length trousers to prevent ticks jumping from grass onto skin If an adder is seen move away slowly. Asthma and other allergic reaction sufferers to carry correct medication at all times. Recommend work in pairs and have at least one mobile phone.	4	2	Low where existing controls are maintained	If anyone is bitten by an adder always keep them still and quite and phone for ambulance. Carry local hospital contact numbers	Individuals undertaking survey	
VISIT TO EARTHWORK OR OTHER ARCHAEOLOGICAL SITE	Uneven ground, holes, slumps and bumps, ramparts and ditches. Could be slippery when wet.	Injury due to tripping, slipping or falling over or off earthworks.	ALL	Warn all staff and volunteers of hazards. Make sure all staff and volunteers are able to manage on uneven or steeply sloping ground.	2	4	Low where existing controls are maintained	Take extra care when grass is wet.	Individuals undertaking survey	
OLD QUARRIES, MINE SHAFTS AND VENTS	Unconsolidated, unsecured and unbackfilled quarries, mine shafts and vents	Injury due to falling down exposed or collapsing shaft. Potentially fatal	ALL	Warn all staff and volunteers of hazards Avoid walking across hollows & depressions of potential mine shafts, quarries, vents, etc Do not walk across or get too close to known or mapped shafts, vents or quarries Recommend work in pairs and have at least one mobile phone.	4	3		Where known or potential former quarries, shafts and vents are being surveyed undertake survey from a safe distance. If measurements or other records cannot be safely obtained omit them from your survey	Individuals undertaking survey	
NOTE: Refer to the guide on risk assessment, Continue on another form if necessary			Assessors Signature:		Date Completed:	22 October 2015				
Where applicable obtain the H&S Advisor signature also			H&S Advisor:		Date:					

DMT Members Signature:_____ **Date of Signature:**___ _____

DMT Member signature * Only required where high risk or large finance requirement*****

Persons at risk code- EM – Employee CL – Client/Service User CO – Contractor LC – Local Community ME – Maintenance/Handyman VI – Visitor LW – Lone Worker YP – Young Person LA – Less Abled PW – Pregnant Worker TE – Temporary/Agency Staff OG – Organisation (ie WCC) MP – Member of the Public

Appendix 2: Lidar validation feedback

What did you enjoy about the LiDAR validation survey?
Many things.
Learning about lidar because previously I did not have access to the data without paying a fee.
Learning how to identify features from experts who opened my eyes to features that I would not have previously recognised.
Being with like minded amateurs who I would not have met in any other way

What do you think you have gained whilst participating?
Knowledge as described above.
When what I do is appreciated and valued peace of mind .
I and my partner found an interesting feature not previously noted which may change the thinking of how people lived in previous times.

What do you think could be improved?
Not a lot apart from greater funding to allow more similar work to be done.

How would you rate the experience overall:
Very Good Good OK Poor Very Poor

Would you be interested in volunteering to get involved in further survey and archaeological investigation if the Forestry Commission are successful in their application?
Yes Maybe No

What did you enjoy about the LiDAR validation survey?
Learning new skills and researching about the industrial history of the Forest of Dean

What do you think you have gained whilst participating?
Improved skills in map reading. It has also kick started my research in the history of the people in the area where I live.

What do you think could be improved?

How would you rate the experience overall:
Very Good Good OK Poor Very Poor

Would you be interested in volunteering to get involved in further survey and archaeological investigation if the Forestry Commission are successful in their application?
Yes please

What did you enjoy about the LiDAR validation survey?
I enjoyed getting out in the Forest and exploring areas I probably wouldn't have explored otherwise. I enjoyed finding the limekiln and hearing from other group members about how it would have worked.

What do you think you have gained whilst participating?
I have gained local knowledge and met lots of interesting people.

What do you think could be improved?
I'm not sure how you could improve it but it got a bit monotonous after the tenth charcoal burning platform we had to measure! Maybe we could have varied the areas we were working in so that we saw different features?

How would you rate the experience overall:
Overall experience good

Would you be interested in volunteering to get involved in further survey and archaeological investigation if the Forestry Commission are successful in their application?
Yes, I would definitely volunteer for further survey work

What did you enjoy about the LiDAR validation survey?
Improving my site recording skills.

What do you think you have gained whilst participating?
A better understanding of how to read the landscape for archaeological features.

What do you think could be improved?
All worked okay for me.

How would you rate the experience overall:
Very Good

Would you be interested in volunteering to get involved in further survey and archaeological investigation if the Forestry Commission are successful in their application?
Yes

What did you enjoy about the LiDAR validation survey?
Learning new skills and putting them into practice. Meeting other local people with similar interests.

What do you think you have gained whilst participating?
The basics of skills that I hope to be able to use again if the follow up bid is successful, which I very much hope it will be!

What do you think could be improved?
The areas for the ground surveys during the pilot did not always reflect areas where LIDAR had indicated the better possible archaeology.

I understand the search areas were selected by the Forestry Commission based on factors such as where no felling etc was expected to take place. Hopefully for future projects the decision can be based more on the LIDAR indicators?

How would you rate the experience overall:
Very Good

Would you be interested in volunteering to get involved in further survey and archaeological investigation if the Forestry Commission are successful in their application?
Yes

Appendix 3: Example Lidar records

LOTTERY FUNDED

FORESTERS' FOREST

UNEARTHING THE DEAN: FEATURE RECORD

UNIQUE FEATURE NUMBER:
Example: SO6715/09/001
SO 5910/02/021

8-figure **GRID REFERENCE:**
for example SO 4765 3219
(do not round up the numbers!)
SO 59438 10206 AT MAIN PATH INTERSECTION.

Is the feature **VISIBLE ON LIDAR**? (Yes) No Partly Lidar No: SO 5910/02
If the feature is visible on Lidar but not visible on the ground please describe the area and vegetation cover in the description box below

Is the feature **RECORDED ON HER**? Yes (No) Partly HER No: _____

Is the feature **RECORDED ON MAPS**? Yes (No) Partly OS edn: _____

TOPOGRAPHY: Valley floor (Gentle slope) Moderate slope
Steep slope Crest Level ground Other: WOODED.

FEATURE TYPE *please circle one from the list below*	**DESCRIPTION** of feature
levelled area	TRACKWAY LEADING DOWN TO OLD QUARRY/MINE. INDISTINCT AT PATH JUNCTION. VERY OVERGROWN, NOT COMPLETELY SURVEYED.
single bank	
multiple banks	
mound – circular	
mound - not circular	
hollow - circular	
hollow - not circular	
watercourse, ditch, drain – TRACK	
disturbed ground – shape unclear	
other (eg notable tree)	

INTERPRETATION of feature (possible identification) *please use the Identification Flowcharts*
ACCESS TRACKWAY TO/FROM QUARRY/MINES

CONFIDENCE of interpretation: low (med) high

CONDITION of feature: good fair eroded (damaged)

Discussion on condition: _____

Reason for damage: HEAVILY OVERGROWN.

Is the feature **PART OF**, or **JOINING ONTO**, another feature? Give feature number(s):
(it is useful to sketch the relationship over the page)
NO

PHOTO(S) taken? Yes (No) Photo reference(s) and direction facing: _____

for photo reference follow the feature number (eg SO6715/09/001/P01). Suitable directions are N, NE, E, SE, S, SW, W, NW

Please turn over

LOTTERY FUNDED

UNEARTHING THE DEAN: FEATURE RECORD

UNIQUE FEATURE NUMBER:
Example: SO6715/09/001

SO 5910/02/029

MEASUREMENTS *state whether estimated or measured*

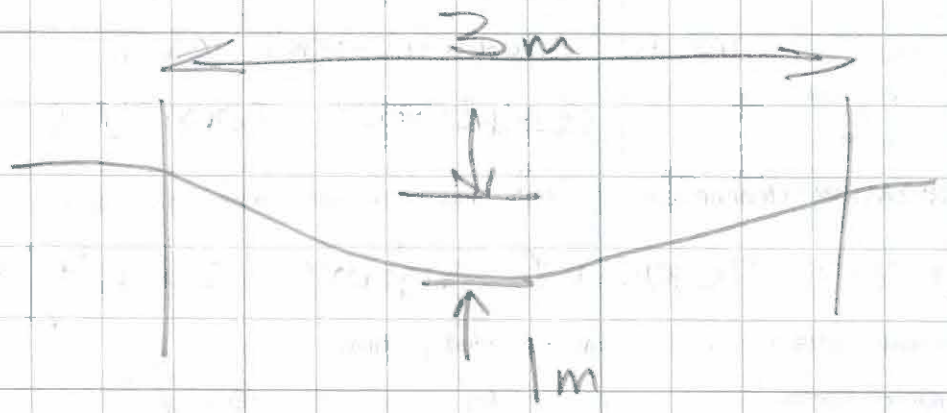
Length	Width	Height/depth	Diameter	Circumference
320m	3-5m	1m	—	—

Your sketch should show the dimensions of the feature.

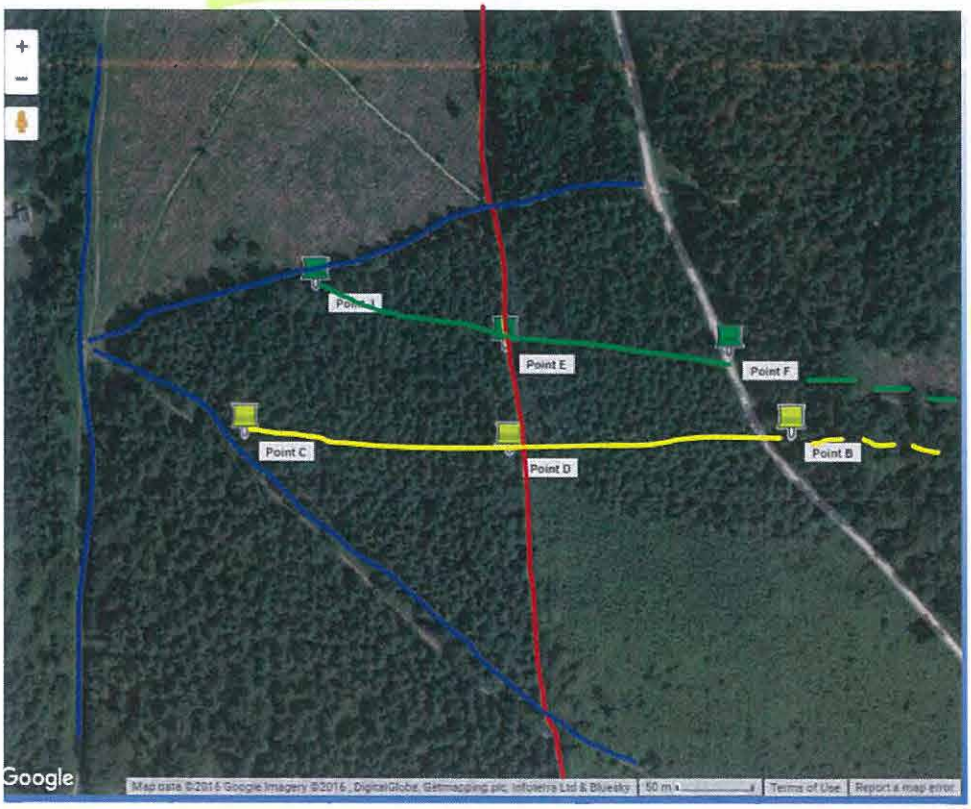
Use the grid at a scale to suit the feature and note the scale. Each square =
(for example: Each square = 10cm, 50cm, 1m, 2m)

Show the orientation by drawing an arrow pointing North (use the compass)

PROFILE OF FEATURE AT MAIN TRACK INTERSECTION SO 59438 10206



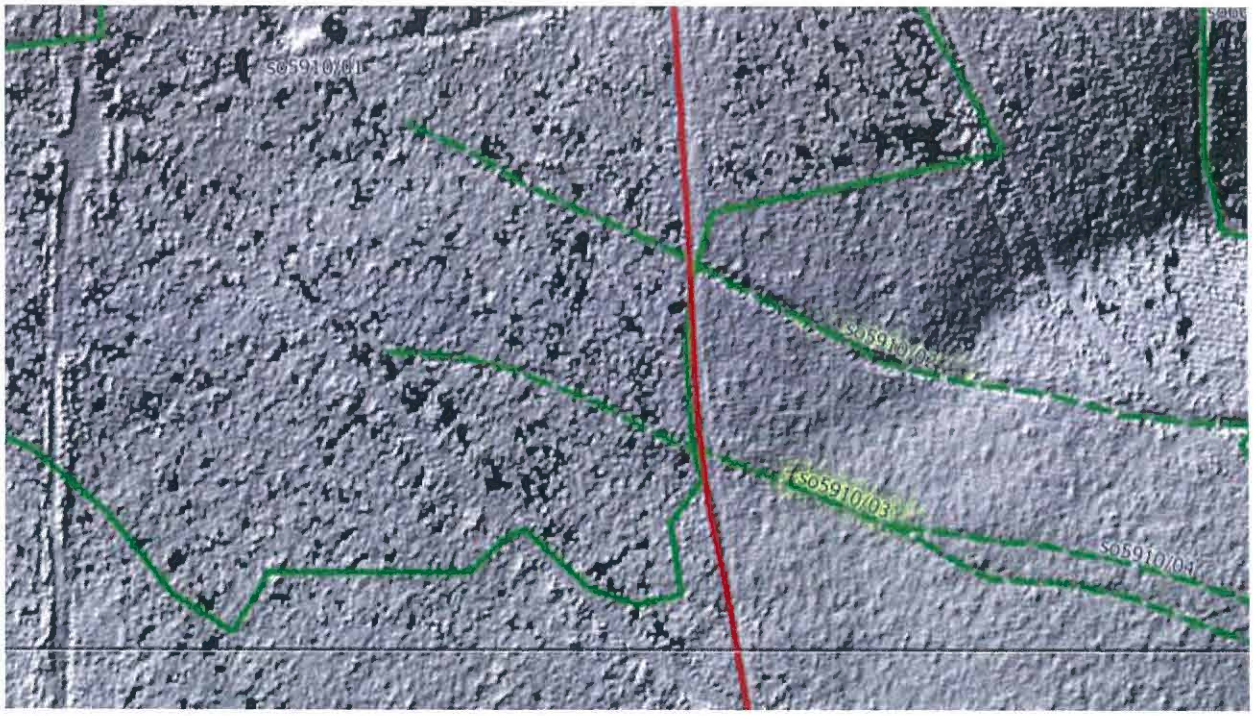
Lidar features SO 5910/02 and SO 5910/03



Blue line shows forest tracks
Red line is pilot area boundary
Yellow line through points B, C + D is feature number SO 5910/03
Green line through points E, F + J is feature number SO 5910/02
Tracks lead down into quarries and free mines to the east at SO 60130 10018. Point L below. Indistinct from points D and E to the west as ground conditions are not good, but they do link up with existing forest tracks at C + G.
Features are aligned with Prosper Lane in Coalway and the Cannop valley (FoD Stone firms and quarries) Possible access routes for extracting stone back uphill for local building in Coalway ?

Grid Reference	X (Eastings)	Y (Northings)	Latitude	Longitude	Description
SO 59439 10142	359439	210142	51.788455	-2.5894527	Point D
SO 59616 10151	359616	210151	51.788548	-2.5868878	Point B
SO 59438 10206	359438	210206	51.789033	-2.5894761	Point E
SO 59578 10201	359578	210201	51.788994	-2.5874448	Point F
SO 59275 10154	359275	210154	51.788548	-2.5918365	Point C
SO 59319 10244	359319	210244	51.789365	-2.5912035	Point J

Feature alignment with Cannop / Coalway



LOTTERY FUNDED

UNEARTHING THE DEAN: FEATURE RECORD

UNIQUE FEATURE NUMBER:
Example: SO6715/09/001
SO6014/10/003

8-figure GRID REFERENCE:
for example SO 4765 3219
(do not round up the numbers!)
(1) South SO 60361434 to N end 60351442 then turns East to 60411442 then S to 60411435 (2) (3)

Is the feature **VISIBLE ON LIDAR?** Yes No (Partly) Lidar No: SO6014/11
If the feature is visible on Lidar but not visible on the ground please describe the ~~area and~~ vegetation cover in the description box below

Is the feature **RECORDED ON HER?** Yes No Partly HER No:

Is the feature **RECORDED ON MAPS?** Yes No Partly OS edn:

TOPOGRAPHY: Valley floor Gentle slope (Moderate slope)
Steep slope Crest Level ground Other:

FEATURE TYPE *please circle one from the list below*		**DESCRIPTION** of feature
levelled area		Single bank system that forms 3 sides of a square – the 4th side being the road. Large quarry within bank boundary. The western side running S–N (1) is cut by part of the quarry ∴ bank may predate quarry. Tends to separate chestnut coppice to east from mature beech and oak to W. Stunnow near quarry
(single bank) system		
multiple banks		
mound – circular		
mound – not circular		
hollow – circular		
hollow – not circular		
watercourse, ditch, drain	(1)	S–N running bank 76m long ditch 0.5–1.25m
disturbed ground – shape unclear	(2)	W–E running section – downhill for 60m through old coppice in woodland bank 1m–1.75m high
other (eg notable tree)	(3)	Turns South N–S running 73m to road uphill 1m high 2m wide

INTERPRETATION of feature (possible identification) *please use the Identification Flowcharts*
Ward Boundary banks or possibly for quarry – but may be older

CONFIDENCE of interpretation: low (med) high

CONDITION of feature: good (fair) eroded damaged

Discussion on condition: Many trees growing out of banks

Reason for damage:

Is the feature **PART OF**, or **JOINING ONTO**, another feature? Give feature number(s):
(it is useful to sketch the relationship over the page)
Yes – SO6014/10/002 cuts it Quarry SO6014/10/004 within it and SO6014/10/005 connects with SE corner close to road

PHOTO(S) taken? Yes No Photo reference(s) and direction facing:
P1 P2 looks N P3 East P4 N P5, 6 N into Quarry P7 S P8 where bank turns east P9 bank corner SE P10, P11 looks N

for photo reference follow the feature number (eg SO6715/09/001/P01). Suitable directions are N, NE, E, SE, S, SW, W, NW

Please turn over

LOTTERY FUNDED

FORESTERS' FOREST

UNEARTHING THE DEAN: FEATURE RECORD

UNIQUE FEATURE NUMBER:
Example: SO6715/09/001 SO6014/10/003

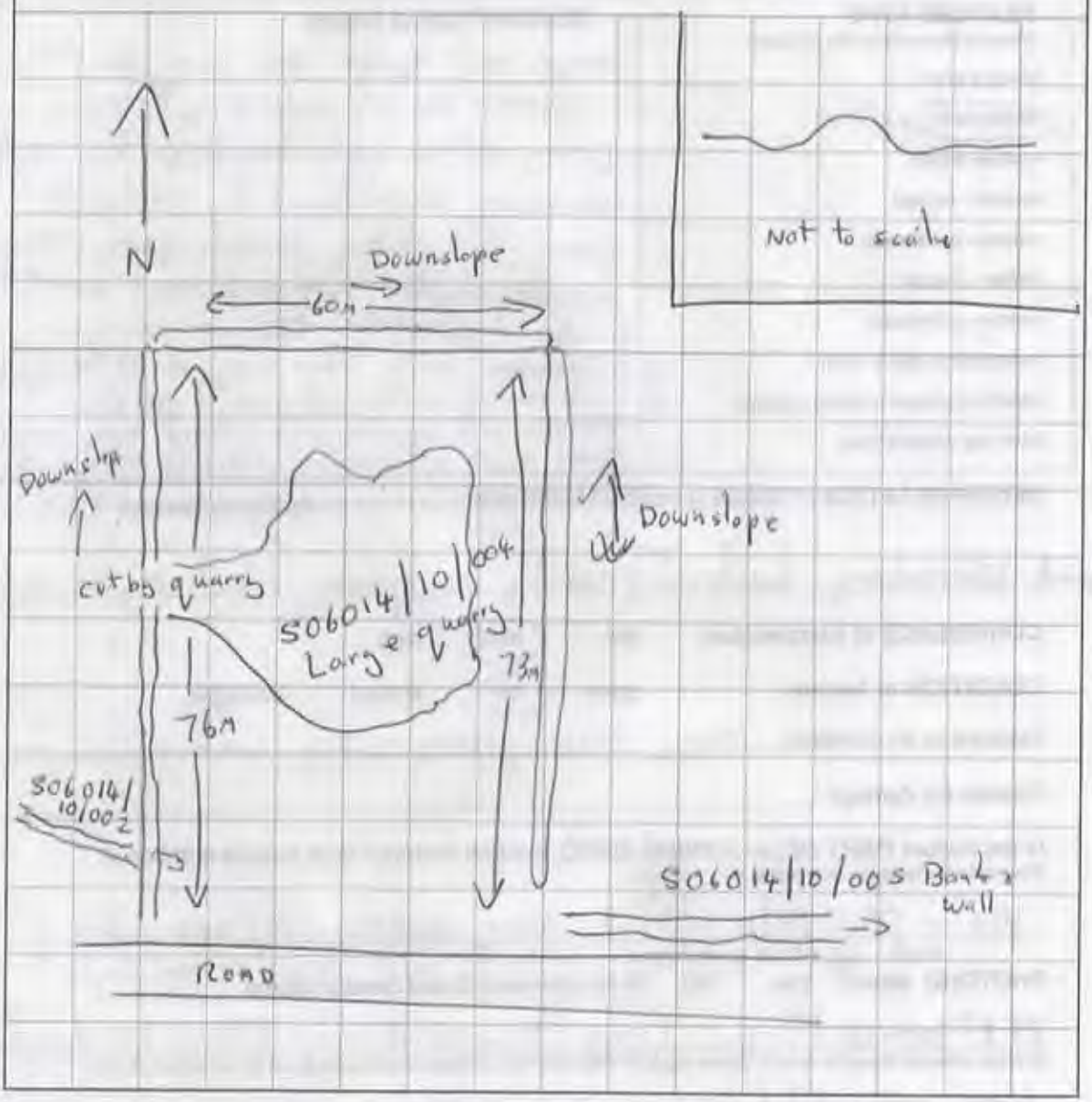
MEASUREMENTS *state whether estimated or measured*

	Length	Width	Height/depth	Diameter	Circumference
(1)	76M S-N	1m	0.5m - 1.5M		
(2)	60M W-E				
(3)	73M N-S				

Your sketch should show the dimensions of the feature.

Use the grid at a scale to suit the feature and note the scale. Each square = 10m
(for example: Each square = 10cm, 50cm, 1m, 2m)

Show the orientation by drawing an arrow pointing North (use the compass)



Appendix 4: Example Built Heritage submissions

Site Name:	**New Mills, Bay Head**
Grid Reference:	362955,204430
Description:	The site is right next to my garden and falling into disrepair. According to the book "A Look Back at Norchard" by Dr Graham Field, Page 26 reads "In October 1823 Mr James of Redbrook proposed to build mills between Upper and Middle Forges, on or near the site of an old furnace. The mills were to be called New Mills and the site was just above Norchard. To this day still exists part of the pond dam wall and a sluice, and a tram-road ran over the top of the dam wall. The mills commenced production in 1824". It goes on to state " The New Mills, which have been newly built by the lessee within the last twenty years contains a large water wheel driving a rolling machine, a Blowing Machine, a Forge Hammer and Wheel. There is a 60 horse engine with a shaft to work when the water is short. Also a Pudding House with three fires. There is a pond containing about 7 acres and the fall is good - three labourers cottages and one and a half acres of garden ground". My house is part of the three labourers cottages referenced. The tram-road noted in the transcript was known locally as the Bayhead. The site borders the railway line now run by the volunteers from Dean Forest Railway and the River Lyd runs through the Bayhead as a waterfall. Your monies could save a valuable piece of local history which is falling into disrepair.

Direction photographer facing: North West

Direction photographer facing: North

Direction photographer facing: North

Direction photographer facing: South East

Direction photographer facing: South East

Site Name:	**Stone lined stream bed between Soudley and Ruspidge**
Grid Reference:	365200,210800
Description:	To stop the water from the Cinderford brook flooding the Shakemantle Iron Mine, the Victorian engineers built a stone lined stream bed for over half a kilometre between the hod boy on the Blue Rock Trail and Ruspidge. This amazing feat of engineering has largely been ignored or is unknown. The stonework fits without any mortar and still performs perfectly with no apparent leaks. This remarkable construction is one of the few industrial sites that has not been destroyed over the years and I feel should have a higher profile. The Crawshay Family of South Wales ran the Shakemantle Iron Mine which closed in about 1910. The covered shaft is still visible on the bracken covered hillside above the lined stream bed. 95% of the construction is in good condition. The remainder needs trees removing, boulders removed from the stream bed and walls repointed or built in a couple of places. It is easy to walk the stream bed when normal flows are encountered, the cut stone stream bed is completely flat so the water across the width of the channel is never more than 6-8cm deep so could lend itself to a public walk along the channel bottom to view the amazing stonework.

Direction photographer facing: North

Stream bed needing stone removal and repointing. Direction photographer facing: South

Stream bed within tunnel needing stone removal. Note the lined stone base of channel..
Direction photographer facing: North West

Superb victorian engineering. Stream bed completely flat so water runs from side to side.
Direction photographer facing: North

Recent Beech collapse onto stonework. Needs fairly urgent removal as restricting channel.
Direction photographer facing:

One of the three tunnels needing stone removal. Direction photographer facing: North

A stone inlet entering the main channel. Direction photographer facing: North East

Direction photographer facing: South West

Direction photographer facing: South East

A Great Western boundary indicator alongside the channel. Direction photographer facing:

Remains of an old flow control gate. Direction photographer facing: East

A particularly fine stone inlet. Direction photographer facing: North East

Tunnel entrance needing repair. Direction photographer facing: North East

Great Western Railway boundary. Direction photographer facing:

Missing stonework from wall? Direction photographer facing: North East

Stream bed continues via tunnel, under road to Ruspidge
Direction photographer facing: North West

Appendix 5: Field School context information

Test pit 1

Length: 1.5m Width: 1m Orientation: East to west

Context summary:

Context	Feature	Context	Description	Height/ depth	Details
100	Topsoil	Layer	Loose dark brownish black loamy clay	0.11	
101	Subsoil	Layer	Moderately compact mid yellowish brown silty clay	0.31	
102	Pit	Fill	Moderately compact mid brownish yellow clayey sand	0.24	Freq Fe slag, occ charcoal and pottery frags. Gradual infill of feature- likely water borne siltation with dump of Fe industry waste
103	Pit/kiln base	Fill	Moderately compact mid brownish yellow clayey sand	0.2	Mod slag, occ charcoal, pottery frags and rim sherd. Dump of material after disuse of furnace-containing associated Fe waste and positive dating evidence in sherds: 13C med
104	Pit	Cut		0.4	Presumed furnace base dated to medieval period, surrounded by bank and ditch, also dated to med. Other test pits in area revealed no features
105	Pit	Fill	Moderately compact dark grey		Furnace base and slag left in situ after abandonment of furnace
106	Layer	Layer	Friable mid brownish yellow		Buried ancient subsoil

Test pit 2

Length: 1m Width: 1m Orientation: N/A

Context summary:

Context	Feature	Context	Description	Height/ depth	Details
200	Topsoil	Layer	Moderately compact dark blueish brown silt	0.08	
201	Subsoil	Layer	Moderately compact mid brown clay silt	0.28	
202	Subsoil	Layer	Moderately compact mid brownish yellow clayey sand	0.12	Ancient buried subsoil

Test pit 3

Length: 1m Width: 1m Orientation: N/A

Context summary:

Context	Feature	Context	Description	Height/ depth	Details
300	Topsoil	Layer	Moderately compact dark greyish brown loam	0.1	
301	Subsoil	Layer	Moderately compact mid orangey brown silty clay	0.13	Rare slag and pottery
302	Subsoil	Layer	Moderately compact mid orangey brown silty clay	0.2	
303	Posthole	Fill	Loose mid orangey brown silty clay	0.16	charcoal present. 2 stones found on east side, possible packing?
304	Posthole	Cut		0.16	
305	Subsoil	Layer	Moderately Compact light orangey brown silty clay		Possible natural deposit but some mottling seen in plan. Cut by possible posthole 304. Buried Ancient Subsoil?

Test pit 4

Length: 1m Width: 1m Orientation: N/A

Context summary:

Context	Feature	Context	Description	Height/ depth	Details
400	Topsoil	Layer	Moderately compact dark brownish black sandy loam	0.09	
401	Subsoil	Layer	Moderately compact greenish brown sandy clay	0.22	Occ Fe slag, rare med pot
402	Subsoil	Layer	Moderately compact mid orangey brown sandy clay	0.16	Rare slag and pot, possible interface between 401 and 403
403	Subsoil	Layer	Compact light orangey brown		Buried ancient subsoil

Test pit 5

Length: 1m Width: 1m Orientation: N/A

Context summary:

Context	Feature	Context	Description	Height/ depth	Interpretation
500	Topsoil	Layer	Moderately compact dark brownish black silty clay	0.08	c. C20 rubbish and slag
501	Subsidence	Layer	Friable mid orangey brown clay silt	0.25	occ slag and pottery
502	Subsoil	Layer	Friable mid brownish orange clayey sand	0.1	Ancient buried subsoil

Trench

Length: 15m Width: 1.75m Orientation: North to south

Context summary:

Context	Feature	Context	Description	Height/ depth	Interpretation
1000	Topsoil	Layer	Moderately compact dark brownish black loamy clay	0.14	
1001	Subsoil	Layer	Moderately compact light orangey brown loamy clay	0.32	Possibly same as 1010
1002	bank	Layer	Loose light orangey brown silty sand	0.56`	Redeposited material comprising of topsoil and natural: upcast from ditch 1016. Overlying buried topsoil/turf layer1008. Noticeably darker to SSE edge- presumably representing initial upcast of top/sub material from ditch area
1003	Ditch	Fill	Moderately compact mid brownish black loamy clay	0.2	Rubble dump of post med/ modern date in top of ditch 1016.
1004	Bank	Layer	Loose light pinky brown silty sand	0.36	Re dep natural from upcast during excavation of 1016 to form bank. Distinct from 1002- cleaner and stonier. Probably representing basal material from ditch digging deposited atop and subsequently slumping to
1005	Bank	Layer	Loose mid orangey brown sandy silt	0.44	Darker, organic rich soil on NNW side of bank, stretching back into enclosure (as' subsoil'/ occupation horizon?) to NNW end of tr10. Initially separated into 1009 and 1005 but no distinction is visible in section

1006	Ditch	Fill	Moderately compact dark blueish brown clay silt	0.05	Upper fill of ditch 1016 containing post med/ modern artefacts. Thin layer of silting that formed between rubble dump 1012 and 1003
1007	Ditch	Fill	Moderately compact mid orangey brown clay silt	0.12	Layer of gradual silting that formed above 1013 and abutting against rubble dump 1012. Post medieval in date due to pottery (although may be intrusive due to rooting)
1008	Bank	Layer	Loose mid brown silty sand	0.22	Buried turf/ topsoil beneath bank. Edge at SSE end unclear- diffuse boundary with 1002 and 1011, presumably as ditch cut and 'flipped' 1008, so part became lower SSE edge of bank and part subsequently slumped into
1009	Bank	Layer			see 1005
1010	Bank	Layer	Loose light orangey brown silty sand	0.28	Buried relict subsoil underlying 1008, clean and sterile. Possibly the same as 1001
1011	Ditch	Fill	Friable mid brownish orange sandy loam	0.4	Area of slumping or inwash of bank material down into ditch
1012	Ditch	Fill	Moderately compact mid orangey brown sandy silt loam	0.24	Rubble dump
1013	Ditch	Fill	Moderately compact mid orangey brown silty clay	0.52	Gradual silting in ditch over slumping 1014 and 1011, medieval
1014	Ditch	Fill	Moderately compact mid brownish orange silty clay	0.42	Area of slumping or inwash fo material down from the bank
1015	Ditch	Fill	Moderately compact mid brownish grey sandy silty	0.2	Basal fill of ditch containing medieval pottery and charcoal
1016	Ditch	Cut		0.95	Cut of ditch forming the enclosure visible on LiDAR. Visible as shallow earthwork to NE but not to NW. Good edge with natural to the north but to the south the natural is very unclear and irregular and has probably been overcut. Uncertain relationship with subsoil 1001 to south. Early fills contained small to moderate amounts of medieval pottery. Upper fills contained a large amount of c19/20th

Appendix 6: archive information

Lidar validation and built heritage submissions

1	CD-Rom/DVD containing all submissions

Field School (site code: P4588)

The archive consists of:

25	Context records AS1
1	Field progress form AS2 (Tomlin survey notes)
3	Photographic records AS3
178	Digital photographs
1	Drawing number catalogues AS4
1	Context number catalogues AS5
1	Sample number catalogues AS18
1	Levels records AS19
5	Scale permatrace drawings AS34
5	Trench record sheets AS41
14	Box of finds and flots
1	CD-Rom/DVD
1	Copy of this report (bound hard copy)

The project archive is intended to be placed at:

Dean Heritage Centre
Camp Mill
Soudley
Gloucestershire
GL14 2UB
Tel 01594 822170

Appendix 7: Field School feedback

Foresters' Forest Field School

Volunteer questionnaire

Thank you for volunteering with us. We hope you have had an enjoyable time and learnt some new skills. We would be grateful if you could answer a few questions to help us evaluate volunteering on community digs.

Do you live in the Forest of Dean?

YES

What other Forester's Forest activities, if any, have you taken part in?

Butterfly Surveys and Landscape Surveying

Have you taken part in an archaeological excavation before?

YES

What prompted you to volunteer on Forester's Forest and the excavation?

A chance to be part of the archaeological Survey of the Forest and to dig on local sites of interest to me and the group I belong to

Was it:

Very Good ✓ Good OK Poor Very Poor

What did you most enjoy about it?

Finding out what the feature we dug was all about historically and meeting other interested people who also volunteered

What have you gained from taking part in the dig?

I met people from all walks of life and got to work with a professional, enthusiastic group of archaeologists

What do you think could be improved in future?

More advertising of the work being done and better signage to the hard to find sites for the public visits

Is there anything else you would like to add, or tell us?

Thanks for your hard work in making it possible to take part in the project and good luck with the next stage

Thank you for your feedback!

Foresters' Forest Field School

Volunteer questionnaire

Thank you for volunteering with us. We hope you have had an enjoyable time and learnt some new skills. We would be grateful if you could answer a few questions to help us evaluate volunteering on community digs.

Do you live in the Forest of Dean? yes

What other Forester's Forest activities, if any, have you taken part in?

Lidar survey. welsh bury hillfort

Have you taken part in an archaeological excavation before?

yes

What prompted you to volunteer on Forester's Forest and the excavation?

To meet like minded people and to Learn more about the area I Live in.

Was it:

(Very Good) Good OK Poor Very Poor

What did you most enjoy about it?

Bieng hands on and gaining more experience

What have you gained from taking part in the dig?

Learning how to record, photograph. Process. Finds and do more than just dig.

What do you think could be improved in future?

Nothing comes to mind.

Is there anything else you would like to add, or tell us?

All the team were great, and a good Laugh.

Thank you for your feedback!

Foresters' Forest Field School

Volunteer questionnaire

Thank you for volunteering with us. We hope you have had an enjoyable time and learnt some new skills. We would be grateful if you could answer a few questions to help us evaluate volunteering on community digs.

Do you live in the Forest of Dean?

Yes

What other Forester's Forest activities, if any, have you taken part in?

None

Have you taken part in an archaeological excavation before?

No

What prompted you to volunteer on Forester's Forest and the excavation?

Hearing about it at the Foresters' Forest stall at the Lydbrook R

Was it:

(Very Good) Good OK Poor Very Poor

What did you most enjoy about it?

The professionals shared so much of their knowledge, expertise & enthusiasm so I learned a lot.

What have you gained from taking part in the dig?

Doing something new

What do you think could be improved in future?

Can't think of anything

Is there anything else you would like to add, or tell us?

I experienced hostility from a local resident over the parking of my van. The lead professional dealt with him which was nice, that I didn't have to deal with it.

Thank you for your feedback!

Foresters' Forest Field School

Volunteer questionnaire

Thank you for volunteering with us. We hope you have had an enjoyable time and learnt some new skills. We would be grateful if you could answer a few questions to help us evaluate volunteering on community digs.

Do you live in the Forest of Dean?

Yes

What other Forester's Forest activities, if any, have you taken part in?

Lidar.

Have you taken part in an archaeological excavation before?

NO

What prompted you to volunteer on Forester's Forest and the excavation?

After years of watching Time Team on the T.V. Wanted to experience an actual dig & all it entails from Start to finish. Wasn't disappointed

Was it:

(Very Good) Good OK Poor Very Poor

What did you most enjoy about it?

Learning new skills & meeting other people.
Finding a fragment of medieval pottery.

What have you gained from taking part in the dig?

A better understanding of how a dig is done.
From start to finish

What do you think could be improved in future? Longer timescale of
Three weekends instead of two

Is there anything else you would like to add, or tell us?

Good choice of biscuits.
More funding will be available for future digs

Thank you for your feedback!

Foresters' Forest Field School

Volunteer questionnaire

Thank you for volunteering with us. We hope you have had an enjoyable time and learnt some new skills. We would be grateful if you could answer a few questions to help us evaluate volunteering on community digs.

Do you live in the Forest of Dean?

YES

What other Forester's Forest activities, if any, have you taken part in?

[redacted]
- "ANCIENT TREE SURVEY"
- "UNEARTHING THE DEAN"

Have you taken part in an archaeological excavation before?

NO

What prompted you to volunteer on Forester's Forest and the excavation?

INTEREST IN LOCAL HISTORY
+
EPONYMOUS LINK TO "TOMLIN" SITE VIA OWN SURNAME!

Was it:

Very Good Good OK Poor Very Poor

What did you most enjoy about it?

LEARNING ABOUT THE OVERALL APPROACH TO THE DIG, PLUS TECHNIQUES OF EXCAVATION

What have you gained from taking part in the dig?

DEEPER(!) UNDERSTANDING OF ACHAEOLOGICAL METHODS

What do you think could be improved in future?

PROVIDE EXAMPLES OF TYPICAL CROSS SECTIONS, AND POSSIBLY SHOW VARIOUS LIKELY LAYOUTS FOR CURRENT 'DIG', WHILST NOT PRE-JUDGING THE OUTCOME.

Is there anything else you would like to add, or tell us?

EXCELLENT STAFF, GOOD EQUIPMENT AND WELFARE FACILITIES.

Thank you for your feedback!

Foresters' Forest Field School

Volunteer questionnaire

Thank you for volunteering with us. We hope you have had an enjoyable time and learnt some new skills. We would be grateful if you could answer a few questions to help us evaluate volunteering on community digs.

Do you live in the Forest of Dean?

Yes

What other Forester's Forest activities, if any, have you taken part in?

None

Have you taken part in an archaeological excavation before?

No

What prompted you to volunteer on Forester's Forest and the excavation?

I am keen on history (studied local history for part of my degree) and have always wanted to be involved in an archaeological dig.

Was it:

(Very Good) Good OK Poor Very Poor

What did you most enjoy about it?

Everything! The actual digging, learning new skills, (photographing sites, completing context records, stratigraphic descriptions) and actually finding pot sherds.

What have you gained from taking part in the dig?

New skills - as described on certificate and meeting new people

What do you think could be improved in future?

I would have liked to see examples of pots that we might find before we started digging. I'm not sure I didn't throw some sherds away as I thought they were just sandstone!

Is there anything else you would like to add, or tell us?

Thank you to the team, Andy, Jesse, Nina + Rob, for explaining processes clearly and letting us get stuck in. They were very patient, helpful + great fun

Thank you for your feedback!

Foresters' Forest Field School

Volunteer questionnaire

Thank you for volunteering with us. We hope you have had an enjoyable time and learnt some new skills. We would be grateful if you could answer a few questions to help us evaluate volunteering on community digs.

Do you live in the Forest of Dean?

Yes - Aylburton

What other Forester's Forest activities, if any, have you taken part in?

None So far, but I will look out for More after this.

Have you taken part in an archaeological excavation before?

Yes, I was a Contract field Archaeologist for 15 years in the USA. I have Volunteer on Several different Roman Sites in this Country

What prompted you to volunteer on Forester's Forest and the excavation?

I really miss being out in the field. Yet, family Commitments holds me back a bit to do Archaeology Professionally any More. Plus, it was the possibility of the Time Periods I am Most interested in this Country

Was it:

(Very Good) Good OK Poor Very Poor

What did you most enjoy about it?

Being dirty! The professional Crew was great. They were very open, supportive, helpful and helped me understand and learn new things.

(I love children and Dogs on Site! But if that should'nt be mentioned block it out.)

What have you gained from taking part in the dig?

A bit of quiet joy I take with me through my little day. No, no really it gets my brain thinking looking stuff up and reading again.

What do you think could be improved in future?

More of it and longer!

Is there anything else you would like to add, or tell us?

The Crew were really good with everyone - Public, kids, the Volunteers.

Thank you for your feedback!

Foresters' Forest Field School

Volunteer questionnaire

Thank you for volunteering with us. We hope you have had an enjoyable time and learnt some new skills. We would be grateful if you could answer a few questions to help us evaluate volunteering on community digs.

Do you live in the Forest of Dean? Yes

What other Forester's Forest activities, if any, have you taken part in?

LIDAR survey

pruning workshop

Have you taken part in an archaeological excavation before?

No

What prompted you to volunteer on Forester's Forest and the excavation?

I wanted to find out more about local history. Taking part in the excavation was something new – a learning experience.

Was it:

Very Good (Good) OK Poor Very Poor

What did you most enjoy about it?

Trowelling for finds.

What have you gained from taking part in the dig?

Experience of archeology techniques.
A little more knowledge of our local history.

What do you think could be improved in future?

Is there anything else you would like to add, or tell us?

I'd like do be involved in another dig!

Thank you for your feedback!

Foresters' Forest Field School

Volunteer questionnaire

Thank you for volunteering with us. We hope you have had an enjoyable time and learnt some new skills. We would be grateful if you could answer a few questions to help us evaluate volunteering on community digs.

Do you live in the Forest of Dean?

No, but very near - Sedbury - near Chepstow

What other Forester's Forest activities, if any, have you taken part in?

None. I did sign up for other projects but time pressure meant that I could not follow through and undertake the work.

Have you taken part in an archaeological excavation before?

Yes. Every Summer Since 2011.

What prompted you to volunteer on Forester's Forest and the excavation?

I will always take any opportunity to do practical field archaeology.

Was it:

(Very Good) Good OK Poor Very Poor

What did you most enjoy about it?

Being part of a team to deliver new archaeological information against a clearly defined objective.

What have you gained from taking part in the dig?

Gained more practical field experience particularly in regard to surveying

What do you think could be improved in future?

We ran out of forms towards the end of the survey phase and I think some of the proforms could be simplified: but this statement may be coloured by the fact we found so many charcoal platforms.

Is there anything else you would like to add, or tell us?

A very well run and well ~~organ~~ organised project. I hope you secure the contract for phase 2.

Thank you for your feedback!