DPHIL

# A Study in Grey

## Grey Literature and Archaeological Investigation in England 1990 to 2010

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# Abstract

**Title:** A Study in Grey: Grey Literature and Archaeology in England 1990 to 2010

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## Abstract:

Through an examination of the processes and influences on the character of grey literature and its producers, this thesis explores the nature of archaeological investigation, how it is reported and the creation of archaeological data in England from 1990 to 2010 and the implications for future understanding of the English archaeological record. I intend to address broad research questions regarding grey literature and archaeology: What is grey literature? Who creates it and why? What is meant for? Is it fit-for-purpose?

My research objectives in studying grey literature reporting and archaeological fieldwork investigation in England are:

- To explore the nature of archaeological grey literature reporting and its producers, the framework of its production and communication, and its impact on archaeological research and knowledge production;
- To capture the developments and changes in English archaeological practice between 1990 and 2010 and their implications for the creation and understanding of the archaeological record; and
- To consider potential future directions for archaeological fieldwork and reporting.

I propose to achieve this using a combination of both quantitative and qualitative approaches including spatial analysis techniques, comparative analysis at a range of scales from England-wide to individual case study areas, and detailed analysis of the nature and

actual content of grey literature reports alongside a characterisation of the many creators of grey literature reporting. This study will illustrate and explore the process of producing grey literature reporting as well as examining the end product itself – grey literature reports.

This European Research Council funded DPhil research was undertaken within the context of the English Landscape and Identities Project, which analyses change and continuity in the English landscape from the middle Bronze Age (c. 1500 BC) to the Domesday survey (c. AD 1086).

**Keywords:** Archaeology, Landscape Archaeology, Grey Literature, Fieldwork, Investigation, England/English, Data, Big Data, Archaeological Record, PPG16,

To my parents, for all of their love and support, and always believing I had the ability to do whatever I chose to put my mind to. I know how much this means to you and I would not be here without you.

And most especially to Jay, for absolutely everything. You have been there every step of the way.

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# List of Abbreviations

| Abbreviation | Explanation |
|---|---|
| **AAA** | Allen Archaeological Associates |
| **AD** | Alison Deegan |
| **ADS** | Archaeology Data Service |
| **AIP** | Archaeological Investigations Project |
| **ALGAO** | Association of Local Government Archaeological Officers |
| **AMIE** | Archives Monuments Information England database |
| **AONB** | Area of Outstanding Natural Beauty |
| **ARS** | Archaeological Research Services |
| **AS** | Archaeological Solutions Ltd |
| **ASUD** | Archaeological Services University of Durham |
| **BIAB** | British and Irish Archaeological Bibliography |
| **CA** | Cotswold Archaeology |
| **CAA** | Centre for Applied Archaeology at the University of Salford |
| **CAP** | Cambrian Archaeological Projects |
| **CBA** | Council for British Archaeology |
| **CBM** | Ceramic Building Material |
| **CIfA** | Chartered Institute for Archaeologists |
| **CLAU** | City of Lincoln Archaeological Unit |
| **CRM** | Cultural Resource Management |
| **CTRL** | Channel Tunnel Rail Link |
| **DCLG** | Department for Communities and Local Government |
| **DCMS** | Department for Culture, Media and Sport |
| **ECC FAU** | Essex County Council Field Archaeology Unit |
| **EH** | English Heritage |
| **EI** | The Excavation Index |
| **EngLaID** | English Landscapes and Identities Project |
| **ERC** | European Research Council |
| **EU** | European Union |
| **FAME** | Federation of Archaeological Managers and Employers |
| **FLO** | Finds Liaison Officer |
| **GIS** | Geographic Information System |
| **GLAAS** | Greater London Archaeological Advisory Service |
| **GLL** | The Grey Literature Library |
| **GMAU** | Greater Manchester Archaeological Unit |
| **GQA** | Geoquest Associates |
| **HA** | Headland Archaeology |
| **HAT** | Hertfordshire Archaeological Trust |
| **HE** | Historic England |
| **HEA** | Historic England Archive |
| **HER** | Historic Environment Record |
| **HN** | The Heritage Network |

| Abbreviation | Explanation |
|---|---|
| **JSAC** | John Samuels Archaeological Consultants |
| **KDE** | Kernel Density Estimate |
| **LAS** | Lindsey Archaeological Services |
| **LB** | Listed Building |
| **MAP2** | Management of Archaeological Projects, Second Edition |
| **MoLA** | Museum of London Archaeology (formerly MoLAS, Museum of London Archaeology Service) |
| **MoRPHE** | Management of Research Projects in the Historic Environment |
| **NGR** | National Grid Reference |
| **NMP** | National Mapping Project |
| **NMR** | National Monuments Record |
| **NMS** | Newham Museums Service |
| **NPPF** | National Planning Policy Framework |
| **NRHE** | National Record of the Historic Environment |
| **OA** | Oxford Archaeology |
| **OAN** | Oxford Archaeology North |
| **OASIS** | Online Access to the Index of Archaeological Investigations |
| **OAT** | Oxford Archaeotechnics |
| **PAS** | Portable Antiquities Scheme |
| **PCA** | Pre-Construct Archaeology Ltd |
| **PCAL** | Pre-Construct Archaeology (Lincoln) |
| **PNPAS** | Peak National Park Archaeology Section |
| **PPG [16]** | Planning Policy and Guidance Note [number] |
| **PPS [5]** | Planning Policy Statement [number] |
| **PUNS** | From the Ground Up: The publication of archaeological projects, a user needs survey (Publication User Needs Survey) |
| **QA** | Quality Assurance |
| **RAO** | Registered Archaeological Organization |
| **RRSP** | Roman Rural Settlement Project (also known as the Roman Grey Literature Project) |
| **SCAUM** | Standing Conference of Archaeological Unit Managers |
| **SCCAS** | Suffolk County Council Archaeological Services |
| **SM** | Scheduled Monument |
| **SUERC** | Scottish Universities Environmental Research Centre |
| **TAP** | The Archaeological Practice (and Clive Waddington) |
| **TDAR** | The Digital Archaeological Record |
| **UAD** | Urban Archaeological Database |
| **UID** | Unique Identifier (database unique record key) |
| **WA** | Wessex Archaeology |
| **WAC** | World Archaeological Congress |
| **WEAG** | West Essex Archaeological Group |
| **WSI** | Written Scheme of Investigation |

# Glossary

| Term | Definition |
|---|---|
| **ADS** | The Archaeology Data Service (ADS) is an online digital archive. Their aim is to collect, describe, catalogue, preserve, and provide user support for digital resources that are created as a product of archaeological research. The ADS also has a responsibility for promoting standards and guidelines for best practice in the creation, description, preservation and use of archaeological information. |
| **AIP** | The Archaeological Investigations Project based at Bournemouth University and directed by Prof Tim Darvill ran from 1992 to 2012. |
| **AMIE** | The AMIE database was formerly part of the National Record of the Historic Environment (NRHE) and now forms part of the Historic England Archive (HEA). |
| **Big Data** | Datasets which exhibit the '3V's' behaviours; high volume, high velocity and high variety. |
| **CBA** | The Council for British Archaeology is an amenity society and charity for archaeology. |
| **CIfA** | The Chartered Institute for Archaeologists is the professional body which sets guidance and standards for archaeologists working across all sectors of the historic environment. Formerly known as the IfA, they were awarded a Royal Charter in December 2013. |
| **EI** | The Excavation Index is a digital dataset held and managed by Historic England and now forms part of the Historic England Archive. |
| **EngLaID** | The English Landscapes and Identities project is a five year ERC funded research project which is examining continuity and change across England over the period from the middle Bronze Age to the Domesday Survey, approximately 2500 years. |
| **English Heritage** | Formerly the Government Agency dealing with all aspects of the Historic Environment. Recently divided into two branches; English Heritage continues to deal with government owned heritage properties and public outreach activity, while Historic England represents the government for all statutory historic environment duties in England, as well as providing guidance and advice. |
| **GIS** | A geographic information system is a database with a spatial component, often managed through the use of specialist GIS database software, such as ArcGIS. |
| **GLL** | A digital library of grey literature, held and managed as a collection by the ADS and generated mainly through OASIS but also grown through other additional sources. |
| **HEA** | The Historic England Archive is the new archive which is inclusive of many previous separately indexed heritage archives, such as the EI, the NRHE and AMIE. |
| **Historic England** | Formerly known as English Heritage (see glossary entry above) and now the governments statutory consultee for all historic environment matters in England, as well as responsible for providing advice and guidance on historic environment matters. I have attempted to update all references in the text to HE where dealing with their role as government advisor and to EH where authorship is explicitly attributed. |

| | |
|---|---|
| **NRHE** | The National Record of the Historic Environment (NRHE) has now become part of the Historic England Archive (HEA). |
| **OASIS** | OASIS is method of uploading data into an online archive of grey literature reports (the Grey Literature Library) held by the ADS. The OASIS methodology uses an online proforma which links a report to an assigned UID and allows for digital uploading of documents. |
| **PAS** | The Portable Antiquities Scheme mainly operates in regards to metal detected finds. The PAS record locations of finds recovered by members of the general public. |
| **PPG 16: Archaeology and Planning** | PPG 16 was the main planning policy guidance relating to archaeology for the period 1990 to 2010. It has since been replaced by updated government policy. |
| **PPS 5** | PPS 5 replaced PPG 16 in 2010 as the main planning policy guidance relating to archaeology in England. PPS 5 has since been superceded by further changes to national planning policy. |
| **Preservation *in situ*** | The act of leaving archaeological remains undisturbed in the ground as a method of preservation; the concept of excavation as destruction is implicit in the concept of preservation *in situ*. |
| **PUNS** | A CBA run questionnaire survey intended to assess the needs of users of archaeological publications (the Publication User Needs Survey). Also known as From the Ground Up. |
| **RESCUE** | RESCUE is an organisation which advocates for archaeology in the UK. RESCUE came into being in the 1970s and continues to champion archaeological issues in the present day. |
| **Valetta Convention (1992)** | This is the EU Convention which specifies the EU position on archaeology. Formally titled the European Convention on the Protection of the Archaeological Heritage (Revised) and enacted in Valetta, Malta on the 16th January 1992, the Valetta Convention built on previous European wide legislation dating from the 1950s and the 1980s. The Valetta Convention is reflected in various country specific legislation and guidance throughout EU member states. |

# 1 Introduction

## 1.1 Introducing *A Study in Grey*

This research project started with an initial objective, put together during the early funding application stage of the associated English Landscapes and Identities Project (EngLaID) which was designed and submitted years in advance of my application to become part of the project team in 2012. This European Research Council (ERC) funded DPhil was intended to compliment the larger investigation of the results of modern English archaeological fieldwork being undertaken by the EngLaID Project by assessing the quality of grey literature in English archaeology. The implication was to determine why it was so poor; the result of the assessment of its quality was already pre-determined in the wording of the research design. From my perspective as someone who both produces my own and reviews others grey literature I was not certain I agreed with this basic assumption. What did we mean by grey literature and how were we determining its 'quality'? I decided to step back and approach the issue from a different perspective. I started with a very large dataset and some very basic questions: What is grey literature? Who creates it and why? What is it meant for and is it fit-for-purpose? These questions inevitably turned out not to be quite so basic after all and along the way to answering these questions, I encountered many more.

My research project as a whole has been a 'big data' project and it is situated within another even larger big data project (EngLaID). Big data is an increasingly used term to indicate datasets which can be described using the "3Vs" model; datasets which have increasing volume (amount of data), velocity (speed of data in and out) and variety (range

of data types and sources) (Baker 2014, p.2). What constitutes big data is a relative and flexible concept; some big datasets may only be measured in terabytes while others may be many petabytes of data. The size of the datasets described and understood as big data in archaeology and which form the basis of both the EngLaID project and my own research would not be understood as big data in the context of other disciplines or research paradigms but the huge increase in progressively complex records of fieldwork investigations in England since 1990 certainly fulfils the 3Vs concept of what constitutes big data for the field of archaeology, and these datasets will only keep growing in the future as investigative fieldwork continues to produce additional records.

This project is also strongly situated within a landscape archaeology approach to interpreting the archaeological record and the spatial component of these datasets provided a foundation for much of my analysis. Geographic Information Systems (GIS) techniques and tools provided an interpretive approach to visualising and understanding these extremely complex big datasets both spatially and temporally.

Many of the following chapters are very data driven in terms of their analysis and interest but I also tried to incorporate a qualitative approach. I wanted to move away from 'things that everyone knows about English archaeology' and properly consider what we do *actually* know about English archaeology; what we can understand about archaeological grey literature, who produces it and why, and to what extent grey literature fills its remit as I understand it - to communicate the results of archaeological fieldwork investigations. In order to do this, I relied on what an interpretation of various datasets related to grey literature, archaeological investigation and its dissemination in England might reveal. Some of my results did indeed confirm 'what everybody knows about English archaeology'. Some of my results were surprising. Through a consideration of my primary dataset, archaeological grey literature reports themselves, I was able to move

away from some of the biases and assumptions that we often harbour as archaeological practitioners about our own milieu.

This project also has elements of a historical review of recent archaeological practice. It covers the first twenty years of Planning Policy Guidance Note (PPG) 16 (1990-2010) which marked a large change in archaeological investigation in England including the growth in commercial development-led archaeology, the sheer volume of investigation and the growth of a detailed regional and national framework of archaeological knowledge.

There have been several excellent studies regarding 'being an archaeologist' which take an ethnographic approach to understanding the nature of participating in archaeological fieldwork, both in the UK and elsewhere. Although I cannot claim that this project is an ethnographic examination of archaeological practice in England in itself, it does make a contribution towards understanding what it means to be an archaeologist in the present day, how we create and share archaeological data and why, and also how these elements have evolved over the last several decades. Despite the fact that, in many ways, this project reviews the recent past, I also consider the future. What shape will archaeological investigation and reporting take in the coming years? Who is the audience for what is produced and how is this changing? How can we contribute to making future archaeological investigation and reporting even more useful and effective than it is today?

## 1.2 Research objectives

As described above, this project has been informed by a wide range of research interests and approaches which I am using to approach my initial broad research questions: What is grey literature? Who creates it and why? What is meant for? Is it fit-for-purpose?

My research objectives in studying grey literature reporting and archaeological fieldwork investigation in England are:

- To explore the nature of archaeological grey literature reporting and its producers, the framework of its production and communication, and its impact on archaeological research and knowledge production;
- To capture the developments and changes in English archaeological practice between 1990 and 2010 and their implications for the creation and understanding of the archaeological record; and
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I propose to achieve this using a combination of both quantitative and qualitative approaches including spatial analysis techniques, comparative analysis at a range of scales from England-wide to individual case study areas, and detailed analysis of the nature and actual content of grey literature reports alongside a characterisation of the many creators of grey literature reporting. This study will illustrate and explore the process of producing grey literature reporting as well as examining the end product itself – grey literature reports.

## 1.3 Outline

The initial chapters will introduce this research project and the topic of grey literature, before moving onto an England-wide national overview of the topic. This will be followed by three individual case studies and then will conclude with a discussion of the results and their overall significance.

Chapter Two asks the question, "What is grey literature?" alongside an introduction into development-led archaeology in England and a summary of the evolution of the legislative and policy framework regarding heritage protection in the UK. Previous investigations into the topics of grey literature, development-led archaeology and archaeological fieldwork in England are critiqued.

Chapter Three introduces the theoretical framework and methodological approach I have taken to my research design. This chapter details the reasoning behind my methodological approach and describes how this research project was undertaken.

Chapter Four presents my analysis of data relating to grey literature report production, development-led archaeology and archaeological investigation at the national scale. It examines broadly how archaeological investigation in England functioned between 1990 and 2010 and further introduces the three datasets that form the basis of much of my analysis throughout this thesis. This chapter also introduces further research questions arising from these initial results to be addressed by three individual case study areas; the Lea Valley (Chapter Five), the transect crossing the middle of England (Chapter Six) and north Northumberland (Chapter Seven).

Chapters Five to Seven follow a similar structure. They first present a broad analysis of development-led archaeological activity within each case study area and then consider the causes and implications of the observed spatial and temporal trends in archaeological investigation within each case study area. I then examine the results of a more detailed analysis of comparable sample areas before undertaking a detailed examination of a selected comparison group of grey literature reports. The final section of each case study chapter consists of my most comprehensive and detailed review of grey literature reports which had a different theme for each case study area. Within the Lea Valley I chose to look at grey literature which concerned the same period type of archaeological site, Iron Age settlements. For the mid-England transect case study area, I chose to investigate grey literature reports which shared the same specialist category of finds, human remains. Within north Northumberland, I chose to focus on grey literature reports which dealt with archaeological investigations arising from the same distinct type of modern development, large quarry sites.

Chapter Eight presents the discussion of the significance and implications of my results. I summarise my findings and present my conclusions regarding the strengths and weaknesses of grey literature reporting and archaeological fieldwork and investigation in

England. I also consider the potential impact this study has for the future of communicating the results of archaeological fieldwork and outline what form may be taken by the archaeological grey literature reporting of the future.

All figures and tables are presented as appendices in a separate volume.

"A discovery dates only from the time of the record of it,

and not from the time of its being found in the soil."

Augustus Pitt Rivers

Excavations in Cranbourne Chase (1887-98)

# 2 Grey Literature and Development-led Archaeology

## 2.1 Introduction

Archaeological research and practice in England over the last 30 years has experienced a rapid pace of change. The introduction and subsequent revisions of planning legislation regarding the protection of archaeology has resulted in the creation and expansion of a particular subset of archaeological fieldwork - development-led or commercial archaeology. Part of this growth in commercially funded archaeological practice has been the concomitant growth in reporting the results of this fieldwork (Darvill and Russell 2002, p.52). These unpublished reports are known as grey literature; in the archaeological world grey literature is widely considered to be both highly valuable and a problem.

Grey literature is the repository for a vast amount of data generated by archaeological fieldwork in England but which has often been previously considered to languish unread, un-investigated and ignored and there are certainly questions about whether or not this dataset has reached its full potential. Many feel that the 'problem' of the data within grey literature remaining untapped stems from the nature of grey literature itself. Professionals in different arenas of English archaeology have different ideas as to what grey literature should comprise. Consequently the output is highly variable and in many ways incompatible. Alongside this critique, however, the significant value of grey literature in terms of yielding fresh archaeological data long before it reaches circulation in the form of published monographs is receiving increasing recognition. A series of recent research projects (including the EngLaID project in Oxford) have attempted to synthesize and foreground the tremendous value of these data. As of yet, however, there has been no attempt to consider in detail the nature of grey literature and its viability as a research tool.

Through my research, I aim to characterize grey literature in England and the processes through which it comes into being. This characterization will form the basis for investigating the usefulness of grey literature for research purposes.

This introductory section will explore both the nature of grey literature and development-led archaeology and their interrelationship. It will begin with defining grey literature. The focus will then turn to an exploration of what has become known as development-led or commercial archaeology, starting with a brief review of the relevant heritage legislation and policy and moving on to the broad nature and character of development-led archaeology. I will examine the present framework of English archaeology and the typical life-cycle of a grey literature report. I will then review both ethnographic and critical explorations of grey literature and archaeological practice. Finally I will consider issues found in previous studies of archaeological grey literature and outline how my own study will contribute, both in terms of shedding new light on knowledge production practices in English archaeology and as the basis for developing new ways of using this possibly unwieldy dataset.

## 2.2 What is grey literature?

Grey literature occupies, as suggested by its name, a grey area between traditional edited formal publications, academic peer-reviewed articles and informal file notes, opinion pieces, plain documentation and original data. Grey literature is not limited to archaeology but can be found across all fields of inquiry, from sciences to the humanities. Increases in the volume and accessibility of research in all areas throughout the last century has resulted in the need to communicate breaking knowledge that may not be of enough significance to merit the expense and time of creating a full publication of a book or article. This current form of information communication has roots in earlier forms of communicating scholarship such as the extensive correspondence networks of dedicated

antiquarian scientists and scholars in the 17th century, and connects modern research practice to the evolution of scientific thought and enquiry over the last few centuries from the Scientific Revolution to now but the sheer volume of work now being reported in this fashion is unique to the modern day. Those concerned with knowledge, information and data management, and library and information science were the first to recognize that a sizeable amount of reporting was being created in this new informal style which showed an "ambiguity between temporary character and durability" (Auger 1975, p.3). However, usefully defining grey literature in a manner that accurately delineates its nature and extent has been surprisingly difficult for such a widespread reporting style.

There are a number of projects both past and present which, as part of their wider remit, have explored the nature of so-called 'commercial' archaeology (explored in further detail in section 2.5 below) and which have also touched upon the issue of the character and quality of grey literature. The nature of planning law regarding archaeology means that grey literature is a key output of developer-funded archaeology and therefore a necessary element to any consideration of modern archaeological fieldwork undertaken in England. However, studies examining grey literature as a class of documents often seem to feel that an understanding of the term 'grey literature' is self-evident without properly considering the extremely ambiguous nature of this type of reporting.

Those investigating archaeological grey literature have come up with a range of definitions for grey literature many of which implicitly reveal what the authors consider to be the problematical aspects of grey literature making these definitions in turn problematical in themselves. Without some clear understanding of what grey literature is, it becomes difficult to usefully discuss issues arising from its existence within archaeology. The Roman Rural Settlement Project (RRSP), also known as the Roman Grey Literature Project, has variously described grey literature as, "written reports which whilst publicly

accessible, are in reality difficult to access" (Holbrook and Morton 2008, p.6) and as, "unpublished reports produced in very small numbers and with very limited distribution" (Fulford and Holbrook 2011), both of which put an emphasis on the lack of accessibility of the finished product as a delineating characteristic and neither of which actually clearly define the category. Fitzpatrick in the context of discussing the current state of development-led archaeology in the UK defines grey literature as comprising, "electronic and print format reports created by organisations for which commercial publication is not their primary activity" (Fitzpatrick 2012, p. 153). Again, this definition is couched in a manner which intends to describe grey literature but also alludes to potential issues with the item in question, arising from a product created by a group potentially lacking the expertise and resources that would be a matter of course to a traditional publishing company, such as a strong editorial team. A more neutral definition has been fielded by the group recently examining the role of development-led archaeology in north-west Europe who chose to define grey literature as, "a basic… (unpublished) report, deposited in a national or regional archive" (Vander Linden and Webley 2012, p.6). Bradley has produced a large body of research over the preceeding decades which engages with the unpublished results of archaeological fieldwork both in the UK and in Europe (e.g. Bradley 2007, Bradley *et al* 2016), and has also tended to define grey literature in neutral terms as being unpublished reports. Overall, grey literature has tended to be defined subjectively and framed in either a negative or neutral context but rarely in a positive manner.

The definition approved by the 12th International Conference on Grey Literature at Prague in December 2010 is probably the most precise and useful for the purposes of this body of research, although not specifically created in consideration of archaeological grey literature and its particular peculiarities of creation and dissemination. The Prague

definition of grey literature specifies that, “Grey literature stands for manifold document types produced on all levels of government, academics, business and industry in print and electronic formats that are protected by intellectual property rights, of sufficient quality to be collected and preserved by library holdings or institutional repositories, but not controlled by commercial publishers i.e., where publishing is not the primary activity of the producing body” (Schopfel 2010, p.17). This definition draws out the seeming conflict between a product considered to be ‘of sufficient quality’ to merit being retained as a resource for research and academic discourse but which also conversely is not produced through traditional publication channels and therefore without clear access to all the benefits of the publishing world, ranging from editorial control and review to specialised marketing and distribution.

In the realm of archaeology, grey literature can include a number of different types of documents including but not limited to:

- Masterplan Documents;
- Environmental Impact Assessment/ Environmental Statement Chapters;
- Desk Based Assessments;
- Survey Reports;
- Evaluation Reports;
- Excavation Reports; and
- Post-Excavation Reports.

These report types all capture different stages and elements of the interpretive process and many of them are linked to specific milestones in development and construction projects which extend beyond archaeology itself, such as the production of an Environmental Impact Assessment and submission of an Environmental Statement to the relevant planning authority. Each of these reports can have one or many authors and can even be agglomerated from smaller grey literature reports produced not only by many authors but also many different organizations. For example a post-excavation report could be comprised of many individual specialist reports that may have been produced by various

sub-contractors to the company responsible for assembling the completed report all of which may have been assembled in partnership with another organization.

As discussed above, many previous and on-going investigations into the nature and quality of archaeological grey literature have avoided giving a clear definition of grey literature, perhaps because it is so difficult to clearly define such a nebulous topic. However, without a clear understanding of what is under discussion, it becomes difficult to compare reviews of the topic and also to understand the genesis of common issues and problems within archaeological grey literature that are inherent to the genre.

By adding the word Archaeological to the very start of the Prague definition cited in full above, I would argue it is the most useful definition of archaeological grey literature. This definition has sufficient clarity in its precision to enable discussion of such a grey area and will be the definition I refer to throughout my research.

## 2.3 Contextualising grey literature

The topic of grey literature is often closely linked to that of commercially funded archaeological practice and developer-led archaeology and any investigation of the role and nature of grey literature in archaeology benefits from an understanding of these arguably primarily commercial systems which produce the majority of grey literature. A background to the evolution of archaeological practice and the increasing 'professionalisation' of fieldwork as well as an understanding of the legislative and policy framework underpinning archaeological requirements in a planning context are vital to any discussion of grey literature.

## 2.4 Heritage legislation and policy

The English legislative and policy background regarding archaeology has been well described in many previous works (i.e. Darvill and Russell 2002, Hunter and Ralston

2006, Everill 2009 and Fitzpatrick 2012). The key point is that heritage, specifically including (but not limited to) the built historic environment and below-ground archaeological deposits, is protected in law throughout England and has been for some time but the specifics of what is meant by both 'heritage' and 'protection', how the mechanism of protection operates and under what circumstances the relevant policy and legislation can be triggered has evolved over time and will continue to do so in the future. Additionally, the English approach to heritage protection is based on a two tier system where protection is achieved either through the maintenance of statutory schedules or registers of protected heritage assets including Scheduled Monuments (SM) and Listed Buildings (LB), or through the mechanisms of the spatial planning process.

The opening chapter of Everill's *Invisible Diggers* is a strong summation and review of the historic process by which commercial archaeology developed throughout the last century and up until approximately 2008, from the RESCUE archaeology of the 1970's to developer funded investigations (2009, p.21-39). He touches on the growth of bodies such as the Chartered Institute for Archaeologists (CIfA) and Historic England (HE, formerly known as English Heritage)[1], and their resultant influence on the increasing 'professionalisation' of field archaeology. Everill also usefully reviews the evolution of the planning framework regarding archaeology from the Ancient Monuments Act of 1882 and the early Town and Country Planning Acts of 1932 onwards up until the introduction of PPG 16 in 1990. However Everill does not consider the evolution of UK archaeological policy in the context of European Union (EU) legislation and there have also been several more recent changes in policy that occurred after the publication of his work which require some discussion.

[1] Please see glossary of terms for more details on the recent history of Historic England and its relationship to English Heritage.

Fitzpatrick describes the evolution of planning law and development-led archaeology from the first competitively tendered archaeological project in the UK (said by "oral history" to be 1987) up until 2010 and therefore includes some of the more recent changes to policy and legislation (Fitzpatrick 2012, p.140). Fitzpatrick also situates archaeology within the larger sphere of planning. Interestingly, he states that out of the many diverse non-archaeological topics to receive planning policy guidance notes, "Planners widely regarded PPG 16 as one of the most effective planning policy guidance notes issued." (*ibid.*)

The ongoing Archaeological Investigations Project (AIP) has published a number of interim reports, the most detailed being the 2002 *Archaeology After PPG16: Archaeological Investigations in England 1990-1999* (Darvill and Russell 2002). Through investigating the number, scale, and distribution of archaeological fieldwork events, the AIP has also managed to capture and characterise the recent changes in the nature and development of the organizations who undertake archaeological field work. Their introduction to the project contains a very useful thematic review of legislation and archaeology, with sections detailing the relationship of archaeological fieldwork to planning law, development and the archaeological roles that pre-dated and evolved into the currently existing frameworks and roles. Both planning in England and archaeology and planning application procedures are clearly and usefully summarized (*ibid.*, p. 12-16). However, until the updated following report covering 2000-2012 is published which will bring this highly significant and long-term research project to its conclusion, many of the observations regarding policy and legislation are now more than a decade out of date (see Darvill 2016 for a preview of the findings of the final AIP publication).

Hunter and Ralston's updated 2006 *Archaeological Resource Management in the UK: An Introduction* also covers the planning and legislative background to the formation and practice of developer funded archaeology with a clear UK focus which plainly situates

development-led archaeology within the larger planning framework (Hunter and Ralston 2006).

The newest RESCUE British Archaeological Trust edited volume (Everill *et al.* 2015) gives a multi-faceted viewpoint of the development of heritage sector, its history, current and past issues and future potentials. Many of the individual chapters within this volume provide a useful grounding in particular aspects of the historic environment in England. Cooper and Ralston's chapter on national legislation, policy and government agencies in Britain reviews their interrelated evolution into their present form and considers the impact this has on the present system which structures how archaeologists interact with the archaeological resource in Britain (2015). They consider the fundamental differences in how heritage legislation and policy developed within the different countries that form Great Britain, and especially contrast the complex locally based regional development of heritage infrastructure which formed in England with the more centrally controlled processes in Scotland and especially Wales. While heritage protection in England was originally envisioned by the RESCUE movement of the 1970's to be a state-funded service with financial support from both national and local government, the difficulties of defining regional responsibilities instead became one of the fundamental characteristics of the system. This local and regional basis to the development of the heritage protection system in England has important consequences for the character of grey literature which will be further explored in subsequent chapters.

Vander Linden and Webley (2012) briefly review planning policy across Europe and consider that as a result of a general movement towards increasing decentralization across Europe, development-led archaeology is mainly managed at the local level and emphasize that as a result there is wide range of variation in how planning policy and development control is applied.

Many of these reviews of the policies and legislation and how they have shaped the commercial archaeological sector fail to consider EU cultural heritage policy, with the exception of Vander Linden and Webley which is unsurprising given their study forms part of a synthesis work bringing together the results of development-led archaeology across northwest Europe (Webley *et al.* 2012). I believe an understanding of this broader context useful to understanding how and why heritage protection appears in its current form and to anticipate future developments. The manner in which the development of heritage protection in the UK is discussed in the literature, as summarised above, often considers the development of heritage protection and policy in the UK to have grown out of uniquely British concerns and history and arguably even to have grown out of uniquely English concerns somewhat differentially applied to Wales and Scotland, with Northern Ireland only rarely mentioned; while I do agree that there is clearly an uniquely 'English' set of policies and legislation which underwrites the evolution of English development-led archaeology, it is also important to note that many of these movements in heritage protection are not unique to England and do not occur in isolation but form part of a broader evolution in archaeological thought which connects the UK both to Europe and the rest of the world.

EU policy regarding cultural heritage is quite broad and high level in nature and the details of legislation and policy are in reality enacted at the national and local level in the various member states. This means the relationship between movements in EU cultural heritage policy and their realisation in England is complex. This has the result that EU directives regarding cultural heritage are formally endorsed by the UK government and then enacted through UK planning policy, which can be variously through Acts of Parliament, Bills of Parliament and planning policy guidance, statements and legislation at the national, regional and local level. Generally however, political trends regarding heritage apparent

within the UK are also often apparent more broadly across the EU which is why one of the most significant developments in archaeology and heritage law occurred fairly simultaneously but separately in both the EU and the UK, with the arrival of both the UK based PPG 16 and the EU based Valetta Convention in the early 1990s (European Union 1992, Secretary of State 1990). [2]

In brief, the Valetta Convention provided an updated definition of archaeological heritage, described measures for its protection and conservation and, more significantly to the topic of grey literature and the evolution of development-led archaeology, defined how these measures would be financed and included points on the collection and dissemination of the results as well as the promotion of public awareness of archaeological works.

In the first major rewrite to the Ancient Monument Act since the revision of 1979, a new Heritage Protection Bill was drafted with much input from a wide range of professional archaeologists and cross-sector organizations (e.g. the Heritage Alliance, CIfA, HE, the Association of Local Government Archaeological Officers (ALGAO), Federation of Archaeological Managers and Employers (FAME), Society of Antiquaries, as well as various consultancies and contracting fieldwork units) which addressed many of the perceived problems with development-led archaeology and defined an expanded and more rigorous understanding of statutory requirements for heritage protection such as Local Authority maintenance of Historic Environment Records (HERs). The importance of the

[2] Other specific developments in European heritage protection which are mirrored in the often concurrent development of UK policy and guidance include the consideration of the importance of setting to cultural heritage assets (e.g. Article 3 of EU EIA Directive 2011/92/EU and Greater London Local Plan 2015 Historic Environment Policy CS12 and Protected Views Policy CS13), an appreciation of historic landscapes as an important component of the historic environment (e.g. European Landscape Convention 2007 and EH Guidance note Golf in historic parks and landscapes 2012) and the increasing recognition of issues of maritime archaeology and heritage protection. Potentially the most significant pieces of EU legislation to the everyday practice of development-led archaeology in England is the EU Environmental Impact Directive (EIA Directive 2011/92/EU) and the associated English Environmental Impact regulations (The Town and Country Planning (Environmental Impact Assessment) Regulations 2011) which underpin much of the current framework for archaeological investigation currently undertaken in England. This directive has recently been revised and updated (EIA Directive 2014/52/EU) with the updated directive required to be adopted by EU member states by May 2017.

draft Heritage Protection Bill lies in the wide cross-sectoral involvement in its creation and the resultant clarification of what archaeology practitioners viewed as being the key considerations for heritage, many of which had potential implications for archaeological grey literature (e.g. the proposed statutory requirement for the maintenance of HERs).

The draft Heritage Protection Bill was intended to enter Parliament in 2008 but the draft Bill failed due to 'lack of time'[3] (Draft Heritage Protection Bill (Cm 7349) 2008). It was decided, however, that the accompanying supporting document *Planning Policy Statement 5: Planning for the Historic Environment (PPS 5)* would still replace PPG16 which officially brought the PPG16 era of 1990 onwards to a close on the 23rd March 2010 (Department for Communities and Local Government 2010).

While PPS 5 took a holistic approach to all elements of the Historic Environment, including archaeology, built heritage and historic landscapes and significant work was put in place to assist in the interpretation and implementation of policies within the PPS (English Heritage 2010), further rapid changes to the planning framework were subsequently made. PPS 5 was swiftly followed by the *National Planning Policy Framework (NPPF)* on the 27th March 2012 (Department for Communities and Local Government 2012). The key underpinning of the NPPF is its "significance-led approach to decision-taking" (English Heritage 2012, p.1). A new PPG titled *Conserving and enhancing the historic environment* has now been produced which replaced the PPS5 Practice Guide in March 2014 (Department for Communities and Local Government). The Enterprise and Regulatory Reform Act that was given Royal Assent in April 2013 includes some heritage protection reforms that were originally drafted as part of the failed Heritage Protection Bill in 2008 (Enterprise and Regulatory Reform Act (Ch 24) 2013).

[3] The failure of the draft Bill was an unfortunate consequence of the financial crash of 2008 which diverted the attention of Parliament during the crucial period.

The failure of the Heritage Bill in 2008 makes it unlikely that an opportunity to consolidate and update heritage policy will arise again for many years; alterations to heritage policy in the current and near future will most likely take the form of alterations to supporting policy and guidance documents and changes to or introductions of new Acts and Bills which touch on heritage but are not primarily concerned with heritage protection matters (e.g. *The Enterprise and Regulatory Reform Act 2013*). Significantly however, the recent UK referendum vote on remaining or leaving the EU returned a majority in favour of 'Brexit' (the popular term for leaving the EU) which will have significant and perhaps fundamental implications for English heritage policy and legislation as the UK uncouples from Brussels oversight. We are now facing a future where EU policy would no longer apply; in fact, for those who supported Brexit the opportunity to escape from the strictures of EU environmental and planning related policy is seen as one of the key positives to leaving and which could have substantial repercussions for archaeology in the UK. Despite the many critiques of English development-led archaeology, we may still come to look back on the PPG16 years as a 'Golden Age' of fieldwork.

The implications for English archaeology and grey literature as a result of all of this legislation and subsequent changes are profound. The introduction of PPG16 determined the structure of the majority of archaeological fieldwork undertaken in England since 1990. It explicitly encoded the principle of dissemination of the results of archaeological investigations to a wider audience, although who comprised the wider audience or specifically how this dissemination would be achieved in practice was not clearly defined. In the evolving legislative context of recent decades, grey literature reporting has come to represent the minimum standard for fulfilling our legislative and policy obligations to disseminate our results which has contributed towards its widespread nature. However, the planning and legal framework that underpins heritage protection and by extension the

world of developer funded archaeology and professional fieldwork is continually evolving and future changes could potentially have as large an impact on the profession as that demonstrated by the twenty years of change brought about by PPG16. Those twenty years resulted in a vast amount of grey literature; the next twenty could bring about changes in access to data equally significant to the creation and sharing of the archaeological record.

## 2.5 Development-led archaeology

In tandem with the evolution of the planning and legislative framework has come an evolution in the character of archaeological fieldwork in England and those individuals and organizations that undertake this work. Those who undertake work as part of the planning process or which has been funded via the 'polluter pays' principle by a developer are considered to be working in the field of commercial or development-led archaeology. This type of archaeology is also sometimes referred to as cultural resource management (CRM) archaeology (primarily in North America) or contract archaeology, referring to the range of organizations who undertake work relating to the supply of archaeological services required by the local planning authority on a contract basis (Hunter and Ralston 2006).

Development-led archaeology is widespread across England and encompasses a range of individuals fulfilling various and varied roles, from field archaeologists, finds, technical and environmental specialists to project managers, officers and consultants. Commercial archaeological organizations may be as small as one self-employed freelancer, a more sizable company with several hundred employees or a small number of archaeologists embedded within a larger multi-disciplinary consultancy.

Perhaps due to the fact that the professional lives of many (perhaps even the majority of) archaeologists in England will be spent within the sphere of commercial archaeology there

are many publications which describe and review the nature and evolution of development-led archaeology.

Again, Everill describes this evolution well, from the old 'digger's circuit' and the RESCUE archaeology of the 1970's up to the commercial archaeological units of today (Everill 2009). He details how some contracting fieldwork units have grown from local authority organizations, while others have come out of university departments or museums and how these different origins can have an impact on the aims and make-up of these new commercial organizations, including frameworks for the setting and achieving of research goals, payment methods and standards, and conditions of employment.

The AIP also covers the evolution of commercial archaeology and the strong influence of the introduction of PPG16 on the rapid growth and expansion of the development-led archaeology sector. The AIP analyses the progression of change within the profession over the decade of the 1990s, discussing the increasing number of development-led archaeological units, their distribution and their comparative turnovers. The AIP describes the various contributory roles archaeologists may have both within and without of the planning framework, and specifically reviews the role of non-planning related field work undertaken by volunteers, local societies and academics. The AIP also mentions the commercial archaeological work undertaken by archaeologists embedded within other primarily non-archaeological organizations, such as large multi-national engineering firms, which also form part of English development-led archaeology.

Several recent investigations regarding development-led archaeology have charted the rise of 'professionalization' or the rise of its significance within field archaeology (i.e. Cooper 2013, The Southport Group 2011). Certainly many discussions of development-led archaeology have an implicit professional / non-professional dichotomy in mind. Other binary divisions often made when discussing modern fieldwork in archaeology include

academic versus commercially driven fieldwork. The AIP manages to use the more neutral terms of planning and non-planning related archaeology. In *Prehistory in Practice: A Multi-Stranded Analysis of British Archaeology, 1975-2010*, Cooper explores the more nuanced and complex 'reality' of these reductive binary assignations and examines the changing nature of 'being a professional' in depth (2013).

The work of Aitchison and colleagues in his *Profiling the Profession* series (Aitchison 1999, Aitchison and Edwards 2003, Aitchison and Edwards 2008, Aitchison and Rocks-Macqueen 2013) is another invaluable resource when investigating the nature of English development-led archaeology. Although the work is primarily focused on individual archaeologists whose main employment role lies within the field of archaeology, Aitchison and his co-authors also consider a diverse range of roles to be professional and includes archaeologists who work in many stages and arenas of the planning process, therefore capturing some of the development-led sector who are not as fully considered in other reviews of the modern practice of archaeology, such as those who are primarily museum-based. Aitchison's latest figures (Aitchison and Rocks-Macqueen 2013, p.43) show an estimated 5,490 people directly earning their livings from archaeology. Of this group, Aitchison states that 59 percent of these archaeologists work for commercial private sector organizations focusing on development-led archaeology. The remaining 41percent of archaeologists are divided between roles in national government agencies, in local government, based within universities or embedded within other bodies such as civil society organisations or museums as shown in Figure 1 and discussed further in section 2.6 below (*ibid.*).

The significance of development-led archaeology to English archaeology is immense; the vast majority of the fieldwork undertaken within England is now conducted by

commercially funded archaeological units and commercial private sector organisations produce by far the largest volume of archaeological grey literature in England (Figure 2)[4]. It is also important to understand that development-led archaeology exists within a particular financial context; these 'commercial private sector organisations' are businesses in varied formats with all the attendant responsibilities, obligations and constraints. As a business, it is likely that they must pay rent or a mortgage (or some other financial arrangement) for their physical premises; employ salaried individuals; provide for their operational overheads, from stationery to lighting to toilet paper; obtain, maintain and repair field and office equipment; potentially provide various levels of training, benefits and CPD to their employees. Whether these commercial organisations are successful or not, well-managed and well-positioned or not, long-lasting or short-lived, they all have both outgoing expenses and an imperative to at least cover their expenses if not make a profit. In this particular framing, grey literature reporting is a product, an essential output, a service that these development-led archaeology organisations provide. Grey literature is a deliverable required by the way in which the law is applied in England and which these businesses are being paid to create; and are often not paid *until* they create. Development-led archaeology in England is firmly situated within a capitalist free market economic environment[5]. Grey literature created within this development-led context is then a commercial product manufactured on behalf of a client, the developer, in order to fulfil their planning obligations or discharge a planning condition imposed by the local planning authority (as described by the legislative and planning archaeological context to

[4] The sources and significance of these figures will be discussed further in the following chapters.
[5] As opposed to the differing economic frameworks that development-led and/or preventive archaeology is situated within across other European nations broadly following the Valletta Convention. For further detail on the differences between the British system of development-led archaeology and other European perspectives, see for example the 2002 debates between DeMoule and Thomas (DeMoule 2002a, 2002b; Thomas 2002), recent summary by DeMoule (2012) and collected papers of sessions on European development-led archaeology held at Vilnius in 2007 (2004 EPAC Meeting) and again in 2016 (2016 EAA Meeting) (Bozoki-Ernyey 2007 and DeMoule 2016).

development introduced in section 2.4 above). This results in a situation where the demand for the product of grey literature comes from developers who generally have no interest *per se* in the product itself but rather in the fulfilment of planning conditions and the subsequent opportunity to proceed with their development which the grey literature report represents. This creates a situation where the content of the grey literature report, the actual presentation of the archaeological results of the developer funded fieldwork investigation, may have less significance to the client than the simple fact of the existence of the report. This disconnect between purpose and content and between the producers and funders of grey literature is a formative characteristic of this type of archaeological reporting and has an influence on structure, style and content which will be further explored in the following chapters.

The relationship between both heritage policy and development-led archaeology is essential to the consideration of archaeological grey literature, which would not exist at its current scale and spread without the combining factors of modern legislation and composition of the English development framework.

## 2.6 English archaeological framework

Archaeological investigation in England is conducted within a number of interrelated legislative and policy frameworks, as discussed earlier. A description of these frameworks at the most basic level is that currently the historic environment of England including archaeological remains are protected through both UK and EU law which is mainly applied in England through the planning and development process. The reality of that statement and the historical development up to the current legislative situation has been shown to be far more complex; this is a very basic description of the actual political, legal and social framework through which archaeological fieldwork is generally conducted within England. Although of great interest, the evolution and application of heritage law

in the UK is not the focus of this research but a further exploration of the complicated dynamic between construction activities and archaeological investigation as well as the various roles for archaeologists involved in this process is necessary to understand the generation of grey literature reports from the advent of PPG 16 onwards.

Planning law and its application is probably best described as an arcane and complex system in England, where decision-making responsibility is multi-layered with the basic 'unit' being the local authority, up to the county and then national level (Figure 3). Although designated archaeology and heritage in England is protected at the national level through the Ancient Monuments and Archaeological Areas Act (1979), this Act is filtered through different regional frameworks and local planning authority legislation and guidance which generally also include undesignated and locally significant heritage assets as well as those that are designated as being of national importance. For this purpose, most planning authorities need in-house archaeological advice; a role for those who interpret and mediate on behalf of the planning authority between an applicant and the planning office regarding planning decisions where archaeological remains may be a material consideration. At the time of the latest *Profiling the Profession* survey project covering 2012-13, there were approximately 364 local authority archaeologists in England which would include both HER officers and those advising on historic environment matters (Aitchison and Rocks-Macqueen 2013). This local authority archaeologist may be embedded within a single council, as with Southwark Borough Council, or may be shared between several planning authorities or embedded at the broader county level, a role generally described as being the county archaeologist as is the case with Norfolk County Council for example. These archaeologists generally have a curatorial role. They are often responsible for setting or approving the brief for proposed archaeological works or the written scheme of investigation (WSI), which can include specifications on the

appearance, content and archiving of any grey literature report that may be produced and which can specify particular standards or guidance that any associated grey literature would be expected to follow. They are often tasked with monitoring a project through to its final phases which should include the deposit of a finished grey literature report with the relevant Historic Environment Record (HER).

In addition to a responsibility to provide expertise in order to make informed planning decisions, local or county authorities also have a responsibility for the maintenance and updating of the HER for each area. The HER's are defined in the NPPF as, "information services that seek to provide access to comprehensive and dynamic resources relating to the historic environment of a defined geographic area for public benefit and use" (Department of Communities and Local Government 2012b) while EH describes HERs as being, "a public map-based data-set primarily intended to inform the management of the historic environment" (2008). This responsibility generally falls at a county level although not invariably, with each relevant county, borough or city having one or more responsible Historic Environment Officers. Again, there are exceptions such as London where HE maintains the Greater London HER as a combined London-wide record (with the exception of Southwark) on behalf of the county. Grey literature reports are often deposited with the local relevant HER. Although this is more commonly becoming an action set by the brief or WSI and therefore required for the fulfilment of the brief (and removal of any associated planning restriction), this is by no means mandatory and there may be many previously investigated sites where the expected associated grey literature report was never completed and never deposited with the HER.

In addition to the various curatorial roles for archaeologists within a local authority, there are also a number of roles for archaeologists employed by national government. HE is the overarching national heritage organization in England. HE is an executive non-

departmental public body (more familiarly known as a 'quango') of the Department of Culture Media and Sport (DCMS) and HE is both the statutory advisor and a statutory consultee on all aspects of the historic environment and England's heritage assets to the UK Government. Although also responsible for the stewardship of a number of properties through their partner organisation English Heritage, HE additionally has oversight of certain planning applications, either in consultation with local authority archaeologists or in specific areas; HE are statutory consultees on Grade I and II* Listed Buildings, all Scheduled Monuments, and Conservation Areas in Greater London. Beyond HE archaeological officers, many of the designated National Parks, the Ministry of Defence, the Environment Agency and other national organizations and executive bodies often have their own archaeological officers who oversee and monitor archaeological resources and consider the impact of planning and development decisions from a quasi-governmental perspective. There are additionally other varied and unique agencies, such as the Portable Antiquities Scheme (PAS) run through the British Museum and funded by DCMS which employs a number of archaeologists as Finds Liaison Officers (FLOs). Aitchison and Rocks-Macqueen have estimated there are approximately 300 archaeologists working in various roles for national government (2013). Many of these organizations produce grey literature themselves but they may more frequently have a monitoring role on the grey literature produced by other organizations. Again this would be in a similar manner to a county archaeologist, achieved through setting the brief or the WSI for intended archaeological investigation and monitoring the progress of the project across all stages of work.

As discussed in section 2.5 above, there is additionally a large sector of commercially driven archaeological work in England which employs the largest group of archaeologists as determined by role within the country. The fieldwork they undertake is conducted

across a wide range of scales from miniscule watching briefs to large-scale open area excavations and has in turn generated a huge amount of archaeological data of varying degrees of complexity. In relation to grey literature, the primary role of archaeologists within this category is as a producer, and they produce by far the largest volume of archaeological grey literature in England.

However the commercial sector is not the only arena in which archaeological investigation occurs and archaeological grey literature reporting is produced. Profiling the Profession (2013) places 582 archaeologists based in universities in England at least some of whom will be involved in fieldwork and research in England (rather than elsewhere in the world) and a further 60 who are museum based. Not only are some archaeological businesses focusing on development-led archaeology also situated as part of a university department, a museum or are run as a charity (with all the associated differences in tax, finance and personnel regulations) but many volunteer based non-commercial groups also engage in archaeological fieldwork and grey literature reporting. Aitchinson and Rocks-Macqueen estimate there are 130 archaeologists in civil society organisations (2013). These groups are of particular interest as to their implementation (or not) of recommended standards and guidance relating to conducting fieldwork investigation and grey literature report production or other aspects of conducting 'professional' archaeology.

It is important to note that these roles are not mutually exclusive; an archaeologist employed by a commercial organisation may moonlight in their own time with a volunteer driven archaeological group such as the Thames Discovery Programme. Cooper (2013) contains a much broader exploration of this issue. Additionally, the auspices under which an archaeological fieldwork project are conducted are also not mutually exclusive; an archaeological investigation may form part of a charity or not-for-profit educational project where a commercial archaeological organisation is then made responsible for the

generation of grey literature reporting and archive deposition in order to properly fulfil stated research goals and outreach obligations, as is the case with Wessex Archaeology and Channel Four's Time Team programme.

This is the general framework within which archaeological investigation and reporting has been conducted in England from 1990 onwards. These different archaeological roles all form a part of the larger complicated national archaeological network that archaeological grey literature is created within and they all impact upon the nature, style, content and presumed purpose of grey literature reporting in a variety of ways.

## 2.7 Grey literature lifecycle

HE in their Management of Research Projects in the Historic Environment (MoRPHE) series of standards and guidance documentation have identified the typical stages an archaeological fieldwork project may progress through and noted the stages at which various forms of project documentation may be generated (Figure 4).

The typical life-cycle of even a single project may produce a number of different grey literature reports authored by different agents; grey literature exists in a complex network of actions, influences and producers as shown in Figure 3. Grey literature may also go through several iterations from the first draft and subsequent circulation to relevant parties before the final version is released, as encapsulated in the various stages illustrated in Table 1, or it may be produced *alla prima* in one sitting.

Any of these 'typical' investigation stages may be addressed by different organisations or different individuals within the same organisation. Although there may be little or no continuity in the participants and producers of the various stages of the project this may or may not have an impact on the results depending on the strength of quality control, adherence to standards and communication across various different organisations (see Jones 2002 for an in depth exploration of the idea of interpretive disjunction in/during the

reporting process). Many devices are currently in place in the systems of English archaeology in order to address difficulties relating previous work to subsequent activity. Initiatives like the Online Access to the Index of Archaeological Investigations (OASIS) project and the HERs play a key role in linking across various archaeological investigations and the data they have generated.

Grey literature has here been shown to be produced by a variety of agents in a variety of organisational settings and associated frameworks across England. The lifecycle of the production of a grey literature report is embedded to varying degrees within a larger cycle of an archaeological fieldwork investigation, which in turn is situated by its relation to planning law in England and the relevant framework of standards and guidance. Any characterisation of grey literature in England must be understood within this context. This understanding forms the basis of my more detailed investigation into grey literature in England.

## 2.8 Grey literature and publication

Of course, grey literature is not the only form of output for sharing data generated by archaeological investigations. A proportion of archaeological fieldwork does get disseminated through formal traditional publication, by academic, traditional and popular presses. In the reverse of the definition of grey literature, formal publication denotes production by a publishing press whose primary function is publication, who should have a wide range of specialist personnel and resources in order to produce, market and distribute their publications. The functions of a publisher include acquisition, editorial control, review including formal peer-review for academic presses, design, marketing, printing and distribution, although they may not retain all of these functions directly in-house. Archaeological publications can take many forms including as a brief journal note or published as part of a periodical ‘round-up’ gazetteer of sites; as a peer-reviewed journal

article; as a monograph, either focused entirely on a particular site alone, or on a series of sites linked thematically, spatially or temporally; or as a chapter in an edited volume. There are also many and varied forms of more informal publication ranging from articles in print newspapers or magazines to online web logs ('blogs') or a wide range of social media sharing platforms such as twitter, facebook, Instagram or snapchat. It certainly has been and will continue to be[6] debated to what extent these more informal avenues of publication count towards obligations for dissemination. It is interesting to consider which methods may be more successful in reaching different audiences, and many of these debates require some reflection on why development-led archaeology is undertaken and for whose benefit. It is difficult to compare numbers of formally published archaeological fieldwork sites to those more informally produced through grey literature. Although various figures relating to publication of archaeology books are available, it is difficult to select only books relating to English archaeological sites. For example, Oxbow Books is a primarily academic publisher with a focus on archaeological and heritage related publications. Between September 2015 and August 2016, Oxbow Books published 28 volumes in their British Archaeology category but in addition to including volumes devoted to Scottish, Welsh and Irish archaeology this category also included, for example, a volume titled *A History of Boston in 50 Artifacts* (Bagley 2016) which may be thematically related to British archaeology but does not represent a publication of any archaeological fieldwork investigation undertaken within England (Oxbow Books 2016). In addition to not being certain of being able to compare only relevant books on English archaeology, it would be extremely difficult to trace every single relevant publication in all the various formats and outlets for dissemination in order to collect data on the rate of publication in comparison to grey literature since 1990. The British and Irish

[6] C.f. Read all about it: reporting, publication and engagement (session organisers: Donnelly and Park), an accepted upcoming session at the CIfA2017 Annual conference and training event.

Archaeological Bibliography (BIAB) does represent a thorough and very successful attempt to do just that, but has now been offline for an extended period as it is in the process of being moved from its former online home of the Council for British Archaeology (CBA) webpages to being hosted by the ADS as part of its online searchable database[7]. In the absence of explicit figures, a review of the annual output of various archaeological publishers still clearly indicates that the rate of formal publication is far lower than the production of grey literature. In terms of sites which are published, it is also extremely difficult to determine how often they are released as both grey literature and publication or by publication only. Anecdotal reports from various development-led archaeology organisations indicate that both cases can happen, e.g. the grey literature report can be skipped if the publication is already decided and agreed, or conversely the grey literature report is required as a separate deliverable to a published volume so both will be produced.

More importantly to the topic of grey literature is a consideration of which particular archaeological sites are published. A formally published book is a product which requires an audience to make a profit and so the sites selected for publication tend to be worthy of attention or scholarly debate; publication selects for the spectacular and the special. Editors can 'cherry-pick' the best and most relevant sites to publish for whatever value of 'best' and 'relevant' they choose to apply. This has the duel effect of both reinforcing the dominant archaeological narrative by focusing on traditionally popular sites, methodologies and regions (e.g. castles or hillforts) to the detriment of less attractive archaeologies and overemphasizing distinctive and unusual sites (e.g. spectacular and unique finds) so that an understanding of the more 'typical' baseline of English archaeology can be difficult to discern through a review of publications alone.

[7] The newly refurbished BIAB is expected to be online by early 2017 (after the submission date of this thesis).

Conversely, although grey literature reporting is influenced by many factors as this thesis explores, it is not particularly selective in terms of the content of the archaeology itself, a theme which will be further explored through the case study chapters.

This leads to considerations about both audience and access. The Valetta Convention and PPG16 both encoded a need to share the results of archaeological investigation but did not specify how or to whom. Do (and should) grey literature reports and formal publications share the same audience? How does the method of sharing these forms of reporting impact the size and composition of that audience?

Here, the work of the CBA run survey project From the Ground Up: The publication of archaeological projects, a user needs survey (known as PUNS) in informing on the views of archaeological practitioners on the use of both publication and grey literature reporting is particularly valuable (Jones *et al.* 1999). This project was initiated to "ascertain, analyse, and report on the archaeological community's use and expectations of fieldwork publications." Although the phrase 'fieldwork publications' is repeated throughout the report, the authors do specify that their definition of publications does actually also include unpublished grey literature as well as more conventionally published volumes. The aim of the project was on moving away from what they perceived as being a focus on the production of publications over the needs of the users of publications. PUNS wanted to understand what the requirements and expectations of the end users of fieldwork reporting actually were, especially as these requirements and expectations could be pertinent to creating frameworks, standards and guidance for archaeological fieldwork and reporting in the future. As a user needs survey, PUNS was an unrestrictive review of both the uses of archaeological publications and the audience, as determined by those who actually used the end product. PUNS showed that there was "widespread dissatisfaction" with the structure of reporting, with delays to publication, lack of editorial support and training and

standards of preparation regarding publications in archaeology. PUNS indicated the primary use of archaeological publications of all types was to share the results of archaeological fieldwork.

## 2.9 Grey literature and the interpretive process

The creation and production of grey literature reporting is inextricably linked to archaeological fieldwork, especially as conducted within the English commercially based development-led discipline. Conducting fieldwork and creating grey literature can be considered mutually structuring interdependent actions. Even when considering situations where they might appear to exist in isolation of each other, for example a desk based assessment or fieldwork which is never 'written up', the missing element is either implicit or evident in its absence; a desk based assessment reviews evidence provided by earlier fieldwork investigations on the site or within a defined radius while fieldwork which is never 'written up' is defined by its negative relation to an issued grey literature report. Generally the presence of one suggests the presence of the other; so much so, that we often use evidence of one as a proxy for the other. This is evident in the entire research design of the AIP where grey literature reports were catalogued as a method of identifying the location and extent of (associated) archaeological fieldwork investigations.

Accepting that archaeological fieldwork investigation and grey literature are closely interrelated means that a characterisation of grey literature also to some extent includes a characterisation of fieldwork. Implicit in our understanding of 'what is grey literature?' is an understanding of 'what is fieldwork?', 'what is data?' and 'what is archaeology?'. Archaeological fieldwork has a materiality that pervades our understanding and interpretation of the past. Various recent works usefully explore the interrelated topics of materiality and agency of objects as applied to archaeological thought (e.g. Gosden 2001, 2005, Jones and Boivin 2010) but which also has relevance for understanding the present

day actions of undertaking archaeological fieldwork and the creation of archaeological grey literature. Recent theory regarding the practice of archaeology has a distinctly constructivist perspective where archaeological knowledge is created not found and where there is a 'mutually constitutive relationship between people and things' (Lucas 2012, p.228; Yarrow 2003). Through a transformative process, the archive comes to represent the site and encodes the data generated by fieldwork; in turn, grey literature comes to encode the data contained within the larger site archive. During the process of excavation, archaeologists create a material record which in turn replaces and effectively becomes the site which now no longer exists in its previous (undisturbed) form; the site archive becomes a temporal passage or time-travelling device to the moment of excavation or even the moment of understanding and interpretation. It becomes a tangible material object which forms part of the assemblage of tangible material objects which construct the archaeological record or the site archive.

The archaeological record is an actual physically present object, a collection of artefacts, notes, plans, drawings and photographs generated, created and materialised through the process of archaeological fieldwork but it is also the existence of observable traces of past human activity, behaviours and environment found throughout our surrounding environment which can be perceived through application of archaeological techniques so that we consider the archaeological record to exist outside of our observation of that record. Thus the archaeological record is both a thing and a more abstract concept. The dual nature of the archaeological record as both a product which is created and an object to be observed creates a tautological ontology: The archaeological record is created through encounters with the archaeological record. The concept of the archaeological record encompasses both a performative creative act and a static entombed 'window to the past' which is legible and can be read by those with the correct training (i.e., 'archaeologists'

and ‘professionals’). This approach owes much to the theoretical work of Foucault on epistemologies of history (i.e., Foucault [1969] 2002) and to Latour’s philosophical and anthropological investigations of science and technology studies (i.e., Latour 1993 and 2005).

Lucas describes this dialectic or hermeneutic between analysis and synthesis in archaeology as being the tension between material disaggregation and assembly, where excavation is the material disaggregation of archaeology and the archive including grey literature reporting becomes part of the (re)assembly process where the archaeology is reconstituted into data (Lucas 2012, p.233).

Lucas also reviews the evolution of archaeological investigation from antiquarian fieldwork and the ‘father’ of modern excavation and proponent of the Total Archaeological Record (General Pitt-Rivers) to the general mode of practice prevalent in England today (Lucas 2001). Part of the appeal of Pitt-Rivers’ ideal of the ‘Total Archaeological Record’ were the concepts of completeness and the perfectibility of data; that it was possible to both create and understand a Total Archaeological Record, an attractive but ultimately misleading concept. Later reflections on the nature and purpose of archaeological practice moved away from this concept. Petrie and Wheeler, for example, distanced their understanding of archaeological investigation from the pursuit of the Total Archaeological Record by explicitly stating that, as archaeologists, we choose what to record otherwise there is simply too much data to generate, record and understand. The map is not (and can never be) the territory. Fieldwork moved towards a more systemic encoding of data through the use of pro-forma sheets which categorized context and more widely standardised systems of planning and drawing sections. Archaeological fieldwork has transitioned from a practice which was primarily concerned with the retrieval of artefacts to the modern stratigraphic excavation, incorporating the use of

structuring homogenising formal elements such as the Harris Matrix and (often) the single-context recording system. The Harris Matrix is a tool which describes the sequence of archaeological deposit formation, termed the stratigraphic sequence; the creation of the matrix represents the relative seriated positions of each observable stratigraphic unit (or context) and their relationship following Harris' laws of archaeological stratigraphy (Harris 1989). The single-context recording system builds on the use of the Harris Matrix by using proforma sheets to record observations for each individual context which appears in the Harris Matrix; the most widespread single-context recording system is the Musuem of London Archaeology Service (MoLAS) Site Manual (1994) although there are a variety of systems in existence.

Despite more recent attempts to redesign the 'standard' approach, including moving towards a more multi-vocal, reflexive and interpretative fieldwork experience (e.g. Hodder 1997, Andrews *et al.* 2000, Hodder and Berggren 2003, McAnany and Hodder 2009), the majority of development-led archaeology continues to be based upon MoRPHE and its predecessor system the Management of Archaeological Projects second edition (MAP 2) EH designed approach (English Heritage 1991). MAP 2 was a systemic staged approach to designing and conducting archaeological fieldwork and encouraged a standardized response to sites. It was replaced in 2008 with updated guidance known as MoRPHE (English Heritage 2008b). The majority of grey literature reporting that forms the basis of this thesis was generated within this original MAP 2 framework.

Heritage protection in England is predicated on two basic approaches: preservation *in situ*, achieved through designations favouring avoidance and limiting interventions, and preservation by record where sites which cannot be preserved must instead be 'rescued' prior to their destruction, with development-led archaeological fieldwork the primary method of preservation by record. Here, archaeology is both destruction but also the

(noble) act of rescuing knowledge from destruction. Within this system, the grey literature report both preserves and replaces the physical site. Lucas considers both that "the archive makes the analysis of the site iterable – through the archive or the publication, we can revisit the site over and over again" (Lucas 2001, p.212) but that through this iterative process, the creation and use of the archive comes in turn to define the limits and extent of the site which no longer exists: "The material form a site takes could be said to be produced as much by the archive (reversing the conventional chain of causation) as the other way around" (Lucas 2012, p.232). In this manner, "Archaeological discourse is primarily about… the copy, not the original" (Lucas 2012, p.244).

Archives are now increasingly seen as monuments and part of the archaeological record in themselves as shown by the concerns to preserve and maintain older datasets as shown by digital archive organizations such as the UK-based ADS and the USA-based Digital Archaeological Record (TDAR). The categories of fieldwork, archive, data and grey literature are shown to be fuzzy categories, both ambiguous and overlapping. Grey literature is both a product of and a window into the interpretative process and the transition from site to archive.

## 2.10 Critiquing grey literature

As discussed above, fieldwork and grey literature are inextricably linked and often considered mutual proxies. Critiques of archaeological fieldwork practices are also often linked to critiques of resultant fieldwork reports. Grey literature in archaeology has increasingly become an explicit topic of interest to a number of investigators in recent years. Many (but certainly not all) of these works often share a common theme of regarding grey literature as somehow problematical.

### *Past critiques of archaeological grey literature*

Although there are several more recent critiques of grey literature that focus specifically on the topic, earlier critiques of unpublished reporting were usually embedded within larger critiques of archaeological practice. These critiques of practice became especially prominent with the development of postprocessualism and a move towards a more reflexive archaeology in the 1980's. Hodder for example championed the idea of interpretative archaeology and that archaeological interpretation was a negotiation between various readings of the past, putting archaeological writing at the forefront of his theoretical advances (Hodder 1986, p.31). Hodder also identified what he felt were issues with archaeological writing arising from the misplaced effort to keep writing neutral and report only 'the facts'; Hodder felt that archaeological writing would benefit from stronger dialogues relating uncertainty, controversy and interpretation (Hodder 1989, p.272). Later explorations of grey literature and development-led archaeology are often strongly based in the reflexive arguments of Hodder and other postprocessual archaeologists who concerned themselves with the nature of archaeological practice such as Shanks and Tilley (1987), the application of phenomenological approaches to fieldwork and the development of embodied archaeologies (Bender *et al.* 2007).

Grey literature was specifically addressed in earlier publications such as the Frere and Cunliffe reports (Frere 1975, Cunliffe 1983) which first identified issues with a growing backlog of unpublished site reports as a result of the many Rescue fieldwork investigations undertaken in the preceeding decades. Guidance for producing archaeological site reports was issued, such as Grinsell's 1974 volume on *The preparation of archaeological reports* which explicitly states that the guidance was required in order to improve the quality of archaeological site reports. The preparations for the introduction of PPG 16 at the start of the 1990's ushered in a new awareness of issues surrounding grey literature reporting

described by Cunliffe as ‘an entirely new publication crisis’ (Cunliffe 1990). Cunliffe was concerned with the increase in archaeological investigations as a result of developer funded fieldwork, and the possibility of an associated increase in a backlog of sites remaining unpublished without even a grey literature site report being released to summarise the investigation. The connections between grey literature, developer funding of archaeological fieldwork and policy was further developed in Thomas’ response to Cunliffe (1991) which expanded upon Cunliffe’s central premise that developer funding would result in an increase in archaeological data; Thomas presents an informative and prescient view of the potential issues for publication surrounding a transition to developer funded system with his five measures to address ‘Drowning in Data’. Amongst these, Thomas points to a key need for ease of access in dissemination of results in order to make excavation and reporting meaningful. He also notes that an appropriate level of basic dissemination and publication should be determined, observing that not all sites merit a full publication process, explicitly tying grey literature as a minimum standard to all fieldwork. Finally he makes it clear that analysis and synthesis of the results of developer funded archaeology should be a priority but that developers should not be funding those activities and other sources of funding should be identified. Accordingly, synthesis was not considered to have a place within the basic site report but should be produced elsewhere. His final point is that we must be able to structure, control and use the information produced from developer-funded archaeology and that grey literature fulfils an important function to preservation by record.

As discussed in section 2.8 above, one of the earlier major systematic evaluations of grey literature arose from PUNS and was focused on the views of those who actually used archaeological reports. Because of this focus on actual use, PUNS has a role to play in determining whether or not grey literature could be considered fit for purpose. It is one of

the few investigations into what the purpose of grey literature is considered to be by a wide range of archaeological practitioners. The conclusions of this project are especially interesting as they discover that many different subsets of archaeologists created and used grey literature in different ways; there is no universal response to grey literature. PUNS showed that while grey literature was used to a certain extent by all types of archaeologists, the primary creators and consumers of unpublished reports were consultants, contractors and those working for local government (Jones *et al* 1999, Section 4.4.1). Although PUNS was based on a sample survey of the archaeological community in Britain and Ireland through a self-administered mail questionnaire, PUNS additionally conducted 40 semi-structured face-to-face interviews. The final PUNS report focused on the use of bibliometrics and quantitative analysis of the questionnaire results, leaving the more discursive results contained within the interviews mainly to one side. However, courtesy of Professor Sian Jones (University of Stirling, who designed the survey methodology and was responsible for the interview analysis for PUNS) I had an opportunity to review the transcripts of this anonymised interview data which certainly added further depth and context to the survey results. Common themes arising from these interviews in specific reference to grey literature reporting covered the limiting impacts of current fieldwork practice on reporting; conflicting and unclear definitions of publication, grey literature and archiving; links between the scale of research and the use of grey literature (grey literature was generally considered only useful for small scale sites, while publication was favoured as a basis for larger synthesis projects); and difficulties arising around accessing grey literature and understanding the true spread and scale of this resource. The interviewees also expressed their difficulties with producing grey literature themselves, with the main complaint being limits of time and resources (e.g. “I don’t have time for that”, “If I had the time I would do that” or “I only refer to those reports when I

have the time"). Despite the wide use of grey literature indicated by the PUNS survey, the results also indicated users considered grey literature to have some problematical aspects. It would be interesting to conduct a similar survey of user needs now, more than a decade later, to observe whether or not the visibility and use of grey literature as a resource has risen across the different categories of archaeologists identified by PUNS. The results of the PUNS project were very useful to framing my own investigation into grey literature but where PUNS was narrowly focused on researching the needs of the consumers of reporting without critically reflecting on the nature of reporting, my own research is intended to more fully characterise and contextualize grey literature and consider the wider implications for archaeology in England.

The AIP project on the other hand had a broader remit, drawing on the earlier Assessment of Assessments project and the resulting publication of the three volume *Planning for the Past* (Darvill *et al.* 1995). The AIP can be understood as a project with both a characterizing and a critical approach to understanding fieldwork in England. It not only characterized the nature of archaeological fieldwork investigations across England since the inception of PPG 16 in 1990 but also the interrelated topic of fieldwork reporting and can therefore provide insight into the evolving nature of grey literature reporting. The methodology of the AIP relied on the collection of unpublished grey literature to be used as a proxy in order to discuss fieldwork interventions, with the main source of information on projects carried out obtained through visits to archaeological contractors and consultants and systemically working through their consolidated archive of client reports (Darvill and Russell 2002, p.10). The AIP emphasized that there was no previous central listing of all fieldwork interventions undertaken throughout England, although there were several regional or period-specific annual round-ups which ran sporadically throughout the last century. A key observation by the AIP was that researchers noted a general increase in

the quality and usability of grey literature reports over time (*ibid.*). Another key point made by the AIP was the recognition that archaeological assessments completed as part of larger Environmental Impact Assessments (EIA) were often overlooked by many annual gazetteers and round-ups and therefore may not be representationally documented, showing that a complete understanding of the grey literature record is difficult to obtain. The upcoming publication of the latest edition of the AIP, covering the last decade of archaeological interventions in England, will be of extreme interest regarding trends in development and the impact of planning and the economic recession upon archaeological field work and reporting. The latest version of the AIP also promises to take their analysis of grey literature reporting further than in the past with an emphasis on bibliometrics such as studying trends in the citing of grey literature reports; the intent is to capture the complete period from 1990 to 2010 (Darvill 2016). However, until that publication is released, the current published AIP is now over 10 years out of date; in the meantime my own research has benefitted from access to the unpublished AIP dataset, allowing me to analyse more recent trends in the production of grey literature reporting. This will be discussed further in Chapter Three Methodology.

Hunter and Ralston's 2006 text on archaeological resource management covers the gamut of archaeological professional roles and also the impact of legislation on commercially funded work. Although their focus is more generally on development-led archaeology, they do devote some space to discussing grey literature specifically. They describe grey literature as being a product of the planning system and thus shaped by legislative requirements rather than the needs of archaeologists. They review issues with the accessibility of grey literature, which they conclude are rightly considered poor, and also with the quality of grey literature, which they conclude is variable. Although they do feel that concerns with the quality of grey literature are credible, they also discuss the role of

standards and guidance in improving quality of reports so their view is perhaps not as negative as some of the other critiques covered here. They also briefly touch on the topic of whether or not standards and guidance are followed in report production and who (if anyone) is responsible for their enforcement, an important point that few other considerations of grey literature have made explicit.

Others have examined the social aspects of the production of grey literature. In this context, many view it as an act of political violence; the 'erasure' of the many voices of the field team who have experientially co-created a multi-vocal, multi-layered interpretation of the site into one authoritative overriding narrative of the site (i.e. Lucas 2001, p.13). The aim of Everill's research for example is to give these 'Invisible Diggers' a voice and restore their visibility (2009), while McFadyen has stated:

> In terms of the excavation work that we carry out, we cannot find the words, and this is literally speaking, to describe to you how painful the process of cutting ourselves out of an archaeological imagination is? Or describe what a dangerous shattering of subjectivity there is in drawing and interpreting where you and others made something, but without you? And yet everything else is sectioned, planned and given a context. Do you know what it is like to always focus the camera in the shadows that reside after you deliberately push a colleague out of the frame, making them wipe out their footprints and pick up their work tools in the process of leaving. What kind of archaeology are these forced experiences for and who is it for? Why are we so professional about creating an archaeology devoid of us? (Lucas 2001, p.13).

Everill's publication of his ethnographically influenced PhD research forms a strong introduction into the working lives of commercial archaeologists (2009). Although throughout his study Everill concentrates on discussing commercial archaeology and developer-funded fieldwork, he does not focus on the nature of grey literature other than noting it "is a deeply misunderstood phenomenon" (*ibid.* p.33). His understanding is that criticisms of grey literature stem mainly from the academic world where the context and purpose for which grey literature reports are produced is not understood, which appears to match his wider feeling that commercial field archaeologists and academic professionals

are also at odds in their context and purpose. This mirrors an observation made by Vander Linden and Webley that, "University-based archaeologists have sometimes criticised the reports generated by development-led archaeology, the complaint essentially being that they do not resemble academic research publications" (2012, p.6).

Both of these comments reflect the implicit assumption that grey literature is a commercial product shaped by commercial pressures and requirements which academically based research professionals will not be able to recognize or understand. Considering the vast and difficult undertaking which is planning, funding, conducting and writing up any academic based archaeological fieldwork project within the constraints of the current higher education system, this is a somewhat naïve position. University-based archaeologists must also deal with commercial pressures and requirements, although admittedly of a different character and focus to those experienced in the contract archaeology sphere. Regardless of this, the division between 'academic' and 'commercial' archaeologists is not so clear cut. As Cooper noted in her research, distinctions between amateurs, professionals and academics were not as well-defined as they often appear to be on the page and several of her interviewees discussed how they had belonged in several of these categories at different moments of their working lives (2013, p.102); archaeologists may move between different categories throughout their careers and bring their knowledge and understanding of previous modes of practising archaeology to their current endeavours. One interviewee considered that being 'professional' in archaeology meant attempting to be more academic and, "doing what universities do" rather than being more corporate in nature (Cooper 2013, p.105). It would be fairer to note that archaeological grey literature is cosmetically quite different in character to a monograph or full publication of an archaeological site but still contains necessary archaeological detail that

can be recognized and understood by any archaeological practitioner, whether their primary role is academic or commercial in nature.

Bradley's work in particular is of interest to this point (2006), as he started out with the understanding that grey literature was a problem and ended convinced that grey literature was instead an opportunity. Bradley has frequently explored the nature of grey literature within his own efforts to more closely integrate academic research aims with the vast array of results provided by commercial archaeology and has produced a wide range of work on the topic (e.g. Bradley 2006, Bradley 2007, Bradley *et al.* 2016). His work looked beyond the cosmetic differences in both the form and focus of the content and instead found that the raw data produced from archaeological field work was readily apparent and available for interpretation. Following on from his initial critical investigation into grey literature and archaeology (2006), Bradley has continued to champion grey literature reports as an invaluable source of raw data from hitherto archaeologically unknown areas and regularly surveyed the available grey literature reporting to form the basis of wide synthesis projects tying together the archaeological record of the British Isles (Bradley 2007, Bradley *et al.* 2016). Bradley has also continued to be reflexive regarding the process of creating and accessing grey literature, with a particularly relevant observation about viewing grey literature reporting as a style of genre writing with his comment, "like a folk tale or a three act play, the excavation report has become a literary genre, a conventional kind of writing to which most authors conform" (Bradley 2006, p.664).

Last usefully summarizes the largest issues regarding archaeological grey literature; both its current and increasing volume and apparent lack of accessibility with his statement that, "It may be somewhat unfair to criticise PPG 16 for generating vast amounts of grey literature which are essentially a product of its success; in the heyday of rescue archaeology, as acknowledged by the Frere and Cunliffe reports (AMB 1975; Cunliffe

1983), many sites did not even make it to an archive report, leading to a backlog that is still being addressed today. In contrast there are numerous initiatives underway to make the PPG 16 grey literature archive more accessible (e.g. http://ads.ahds.ac.uk/catalogue/library/greylit/index.cfm )" (Last 2012, p.130). Last holds a more positive view of the usefulness and range of grey literature to archaeological research than many others and notes that although access has been an issue in the past, archaeologists were aware of the problem and were working to correct the situation. Many of the concerns surrounding grey literature are focused on accessibility and although these are valid concerns, as discussed below, there are now numerous projects currently underway which seek to tie archaeological data generated by commercially funded fieldwork closer to wider research based initiatives.

Fitzpatrick has viewed the role of grey literature as part of the process of 'mitigation' from a more curatorial perspective, an embedded concept from planning policy and archaeology where archaeological fieldwork is conducted to mitigate for the proposed destruction of archaeology by development (Fitzpatrick 2012). His review of what mitigation in terms of archaeological destruction really means touches on the production of knowledge; mitigation in these circumstances does not replace like for like (archaeology in the ground with other archaeology in the ground) but rather is the replacement of the irreplaceable, the archaeology itself, with an increase in knowledge and scientific inquiry through the site archive and report (*ibid.*, p.151). Grey literature here is presented as a transformative process similar to the earlier ideas of Shanks and Tilley (1987) whereby the physical archaeological record, although excavated and no longer *in situ*, lives on in the form of the archive and site report. This view echoes the well-known quotation of Pitt-Rivers that opens this thesis referring to what became known as the Cranbourne Chase tradition (Pitt Rivers 1898) and was further promoted by Mortimer Wheeler, who felt

publication was both a moral and scientific duty and non-publication amounted to wanton destruction of archaeological sites (Wheeler 1954, p.182).

The perception of grey literature from within the field of archaeology has begun to change in recent years. Papers presented at the 2008 World Archaeological Congress (WAC) symposium in Dublin as part of a session titled, "Black and White Issues about the Scientific and Technical Grey Literature," were collected together in a thematic volume of the WAC journal *Archaeologies* (Seymour 2010a) as well as in a 2009 issue of *The Grey Journal* (Seymour 2009, p.63-110). This diverse group of papers considered many aspects of grey literature in archaeology and, although not unanimously approved of (i.e., see Roth 2010, 337-345), many participants agreed that grey literature was not a problem but an opportunity (Seymour 2010b, 228). Papers published in this collection identified particular issues regarding grey literature and the 'practical applications' which would bring the contents of archaeological grey literature to a wider audience in the future (Seymour 2010b, 231).

Evans has recently reassessed archaeological grey literature in terms of a 'grey revolution' as a result of its increasing access and wider dissemination (Evans 2015). Evans feels that even the terminology grey literature is outdated and no longer represents the outputs of planning-led investigations stating that, "the use of the term 'grey literature' seems more and more like the relic of an obsolete vernacular" (Evans 2015); instead these outputs should now be driving research agendas forward. The strength of Evans analysis lies in his situating the recent history of grey literature within a larger digital revolution. This is supported by the findings of the GLADE survey which explored perceptions of the quality of information in grey literature reports (Hardman and Evans 2010) which showed that grey literature was now considered a valid method of publication and a rapid and effective method of dissemination. Evans also points out the difference between the value of data

and data itself, and questions if the modern cultural collecting pattern is now being applied unreflexively and merely adding volume without value. Evans continues to investigate trends in access to grey literature reporting, and the continued uptake of the OASIS system (i.e. Evans 2013, 2015). However, Evans' focus on issues of digital archiving, meta-data, syntax and curation means that in some ways Evans fails to critically engage with underlying character of grey literature and its relation to the wider world of archaeological investigation. For example, Evans only briefly discusses geographical lacunae in database entries which I identify as being highly significant, and which forms a common theme between chapter four and each of the case study areas (Evans 2015). Although my own research shares an overlapping basis in the data provided by the Grey Literature Library of the ADS, our approaches are markedly different. I have attempted to both contextualise and characterise grey literature within archaeology more broadly, as well as examining issues made visible through spatially mapping this dataset and by conducting more detailed textual analysis.

## *Discussion*

Many of these earlier considerations of grey literature and its links to archaeological field work investigations share some common views on unpublished reports. There is a definite sense that there are unanswered questions about the viability of using grey literature for research purposes. Part of this may be what Darvill described as a reaction to changes brought about by the introduction of PPG 16 that have been "swift to harden" (Darvill and Russell 2002, p.4). Despite increasing evidence that grey literature is becoming more easily accessible, more widely recognized, more guided by adherence to standards and more informed by research frameworks and intelligent briefs (i.e. Last 2012, p.131), and therefore arguably more useful, the perception still persists that grey literature is unwieldy, inaccessible and doubts remain about its variability and quality.

Some of these perspectives may be so prevalent in the literature reviewed above because of the nature of those who are doing the critiquing. There is a strong bias towards mainly academic (and mainly male) reviews regarding the practice of archaeology and report writing, although grey literature is mainly produced outside of academia by both male and female authors. Many of the above critiques were produced in the 1990s or early 2000s and so may reflect past professional and academic hierarchies and research interests. This bias may also partly exist as academics would have more professional interest in undertaking a critique of practice, whereas those who regularly produce grey literature would not have the same opportunity through their employment to be so reflexive. This bias towards an academic analysis of the fruits of commercially driven archaeology is also changing in recent years. More 'professional' viewpoints have begun to be gathered and communicated such as at the roundtable discussions held at Leicester University in 2012 regarding development-led archaeology across Europe (Webley *et al.*, 2012) or the European Archaeological Council symposium hosted by the Cultural Heritage Agency of the Netherlands (RCE) in Amersfoort in 2014 (Schut *et al* 2014). Many of the academic authors discussed above have moved between employment in academia and in commercially funded fieldwork, such as Cooper, Webley and Everill, while others hold curatorial or custodial positions in local authorities or within Historic England, such as Last and Thomas. The increasing diversity of those examining issues related to archaeological practice, fieldwork, research and reporting is a positive development and will help bring wider perspectives to the topic including this body of research.

Another point is that the majority of this work has been undertaken by archaeologists examining their own discipline which inherently embeds a conflict of interest between observation and participation. There are a limited number of studies by archaeologists using a more ethnographically informed approach (i.e. Edgeworth 2003, Gero 1996,

Holtorf 2002, 2006 and Everill 2009) or which have been created by anthropologists looking at archaeology and the processes of fieldwork and report production as 'outsiders' to the discipline[8] (i.e. Hamilton 2000, Erdur 2006 and Yarrow 2003, 2006a, 2006b). The methodologies of these studies varied; for example, Erdur (2006) did not participate in excavation but observed her subjects from within the trench and through informal conversations both on and off site while Edgeworth (2003) actively participated in development-led archaeological fieldwork. In both of these examples, the investigations focused more on the nature of conducting archaeological fieldwork and did not specifically address the creation of archaeological grey literature. Cooper reviews ethnographic studies of excavation in more detail, stating that most ethnographic studies of archaeological practice have been more concerned with raising points of analytical interest rather than, "directly outlining problems and putting forward solutions" (2013, p.15) and so are limited in their use towards understanding the effectiveness (or otherwise) of grey literature reporting.

There are very few studies which focus on the process of creating grey literature reports, an activity which tends not to be externally observed or monitored to the same extent as the product (grey literature reports) which emerges as a result of this process or as the more visible process of undertaking archaeological fieldwork. As discussed above, Jones (2002) represents one of the few critiques of the post-excavation process in archaeology, and highlighted issues around lack of communication, engagement and contextual understanding between specialists, scientists and field archaeologists which negatively impacted the resultant reporting. As Lucas discusses, fieldwork is viewed as the fundamental activity to the act of being an archaeologist (Lucas 2001). Fieldwork *is* archaeology while the act of generating a report is not always viewed as embodying

[8] Although it can certainly be argued that archaeology cannot be separated from anthropology and therefore that anthropologists can never truly be 'outside' observers of archaeological fieldwork.

archaeology in quite the same way but rather as part of the larger interpretative process. Fieldwork is literally more visible, more able to be internally viewed by its many participants, central or peripheral, and by outside observers such as the general public; dog-walkers, commuters, children playing. Although many sites will be in more remote, isolated or rural locations, many others are conducted in urban centres or other populated areas. On the other hand, writing a grey literature report is a sedentary office based activity generally requiring a desk and computer which is conducted out of the eye of the general public and, in fact, out of view of many other archaeologists as well. Specialist and scientific analysis is also generally lab or office based and requiring access to particular equipment for various techniques which may be restricted to those with certain specialist skills which again results in this process being less widely observable than archaeological fieldwork. The structure of the modern development-led archaeological field unit includes many archaeologists who spend all of their professional working time in the field and do not observe or participate in any office-based activity at all; being assigned office-based tasks and duties may be viewed as more managerial, a promotion and as a reflection of seniority. As field archaeologists progress in their career, they may gradually move indoors towards more specialised supervisory, specialist or management related roles. This may contribute to a perceptual division between office based and field based archaeologists whose daily activities are mutually invisible to the other, and which may contribute towards resultant interpretative disjunctions in grey literature.

Finally, many of the above studies concentrated on one area of archaeological employment or activity over another. Although Everill's work, for example, proposed to give the 'invisible' diggers a voice, there still remained a large portion of the professional fieldwork practitioner population that went unexamined and unrecorded by his work, focused as it was on the those with a long-term career in fieldwork (characterised as the

'old lags') rather than the young professionals recently graduated according to his own selection of interviewees in his published results (although he may certainly have interviewed far more extensively than those selected to be explicitly referred to in his text). Even within his study of development-led archaeology which was meant to correct a perceived oversight of a substantial component of the archaeological population, the eponymous Invisible Diggers, Everill concentrated on the views and experiences of a smaller subset of the population. In order to gain a true understanding of grey literature and its role in archaeology, the initial perspective needs to be as wide and inclusive as possible in order to gain the broader views relating to the topic.

## 2.11 Conclusion

In this chapter I have examined what grey literature actually is and provided a broad systemic and interpretive context for its production. I reviewed existing analyses of grey literature reporting and highlighted their strengths and shortcomings. Through my consideration of previous research on the topic of grey literature in archaeology I encountered a variety of perspectives regarding archaeological fieldwork in England which helped draw the distinction between previous work and my own research focus.

My own study will further explore the nature of archaeological grey literature reporting and its producers, the framework of its production and communication, and its impact on archaeological research and knowledge production. By capturing the developments and changes in English archaeological practice between 1990 and 2010 I will review their implications for the creation and understanding of the archaeological record. I also consider potential future directions for archaeological fieldwork and reporting.

This is approach is timely in a number of ways. Many of the previous investigations of grey literature were actually concentrated on other arenas within archaeology, with comments and critiques of grey literature forming a brief aside to the main conversation. I

found this especially noticeable with those that gave grey literature a negative critique but without expanding on the reasons why. Making my own focus primarily on the topic of grey literature and unpublished report production within archaeology gives me the opportunity to present a stronger discourse on the topic and the opportunity to develop a deeper understanding of the problems and strengths of grey literature.

In addition, situating my research in the context of 'big data' allows for a complex and multi-scalar analysis and broad perspective on the topic of grey literature. Many of the previous studies were based upon detailed analysis of one dataset, while I am privileged to have access to wide range of datasets from across England contributed by a range of sources (further detailed in Chapter 3 Methodology). This represents an opportunity to examine patterns and trends in these datasets on a nation-wide scale. It allows me to view grey literature reporting alongside many other sources and not only in the context of development-led fieldwork, leading to a fuller understanding of the nature of the processes of its production and how it contrasts with other forms of knowledge dissemination within the archaeological sector.

This also gives me the opportunity to examine grey literature in the context of its creation, as it is embedded into the knowledge production networks of archaeology, both commercial and non-commercial. I will be able to investigate the interrelated roles of various commercial and non-commercial organizations, legislation, planning and development bias within the larger context of the English historic landscape.

Finally, the replacement of PPG 16 on 23rd March 2010 with new planning policy guidance marks the end of an era. Although archaeology continues to be protected as part of the planning and development process, the failure of the Heritage Bill in 2008 and the subsequent introduction of the Localism Bill (2011) and the NPPF (2012) have marked a change in focus and development. Further changes to legislation and planning policy as a

result of the recent vote to leave the EU can be anticipated. Development-led archaeology continues but PPG 16 shaped the working lives of many archaeologists over a span of twenty years and also greatly influenced the production and nature of grey literature in England. This is an opportune moment to consider the recent evolution in the nature of grey literature and archaeology.

"We do not invent or create our data; it is not a fiction of our minds or a social construction. However, neither is it just given."

(Lucas 2012, p.231)

"Interpretation occurs at the trowel's edge."

(Hodder 1997, p.693)

# 3 Methodology

## 3.1 Introduction

This section will detail the framework and the methodological techniques which structure this investigation into archaeological grey literature. To begin, I will present the wider investigative context which informs my approach. I will then describe the specific methodology used to identify and collect data relating to grey literature reports both at the national level and within the more detailed case study areas, as well as introducing the case study areas themselves and the methods for collecting actual grey literature reports. I will then describe the methodology employed to analyse the collected data at the national level and also within the case study areas, primarily using GIS and database management software packages as well as a more qualitative textual analysis.

## 3.2 Methodological context

As presented in Chapter One, my research is aimed at addressing broad questions about the character and uses of grey literature, the context of its production and understanding its effectiveness in communicating the results of archaeological fieldwork investigation in England. These questions form the basis of my specific research objectives in studying grey literature reporting and archaeological fieldwork investigation in England which were also outlined in my introduction. My methodological approach has been designed with these research objectives in mind and is intended to address characterising and contextualising grey literature and its producers, understanding developments and changes in English archaeological practice between 1990 and 2010 and capturing the impacts and implications for archaeological research and knowledge production.

My research questions and objectives allow for a broad scope of investigation which required careful research design in response in order to maintain relevance and focus. In

addition, the nature of my primary datasets required particular considerations in designing my methodology. Like all researchers, I made choices in my methodological design which I decided would be beneficial to addressing my research objectives but which could perhaps have precluded other fruitful avenues of research; the topic is vast and there is certainly room for further and different analyses on grey literature reporting and archaeological investigation. Issues I attempted to address within my methodological approach include difficulties stemming from working with big data, the inherent conflict of conducting a desk-bound investigation of archaeological fieldwork and engaging with the iterative process of conducting research.

This research was initially designed to complement the EngLaID project and shares many of the same investigative values especially in relation to dealing with large amounts of internally and externally variable datasets. Certainly, the incredible volume of archaeological data generated in the post PPG16 era has created an opportunity to consider archaeological data at a broad scale but considerations of the common problems found in information science and the impossibility of the 'perfectability' of data still apply. In working with a variety of externally produced datasets, I was required to make choices regarding the extent and nature of any modifications to the source data such as identifying and correcting errors, duplicates and omissions. I needed to retain the maximum amount of useful data whilst allowing a wide variety of datasets produced in different contexts, for different purposes and by different agencies to be broadly comparable. This is discussed in further detail when introducing my main data sources in section 3.4 below.

Additionally, although advances in computing software, hardware, programming, analysis and technique have created a situation where we are potentially closer to being able to produce and understand something approaching a 'Total Archaeological Record' than we have ever previously been (regardless of the doubtful wisdom of pursuing this goal), the

difficulties with data resolution and producing functional results from 'big data' continue to be problematic. There are specific methodological issues when working with 'big data' as shown by the work of Cooper and Green (Cooper and Green 2016, Green Forthcoming). In order to understand the complexities of analysis using 'big data' Green has developed the Uncertainty Principle model (Green Forthcoming, Figure 5) which usefully describes a relationship between the scale and grain of analysis where the larger the scale of analysis, the coarser the grain of detail which is usefully visible while smaller scale analysis allows for a finer grain of detail; an understanding of this relationship should guide research design and methodology when dealing with 'big data' projects. In order to address this issue, I have therefore incorporated analysis at various spatial scales throughout my research, ranging from a nation-wide perspective, to smaller case study areas, and even smaller ten by ten kilometre squares to allow an exploration of the data at various granularities. I also compare grey literature reporting broadly through form and more specifically through detailed textual analysis.

The design of this project does not include conducting any fieldwork; for the most part, it does not even include many in-person visits to off-site archives as most data was collected in a digital form. The project was almost entirely desk-bound and conducted through the computer screen with a focus on synthesising and analysing data produced by others and yet this project is entirely concerned with both archaeological fieldwork investigation and the results and communication of this data. I am not unaware of the irony; there is an inherent tension in conducting an investigation into systems of knowledge production without participating directly in the associated fieldwork and data production. However, although my primary datasets are largely records of the results of archaeological fieldwork investigation they also include vast amounts of 'meta-data' which details how, why, where and when this data was produced. I did not only have the data contained within the grey

literature report itself but also the data about the grey literature report and the associated archaeological investigation; who produced it, when and under what circumstances. By contextualising my datasets as thoroughly as possible, I retained awareness of the wider framework of archaeological fieldwork investigations which this data was produced within.

Finally, when initially designing my methodological approach to this research I cast a wide net; characterising the recent milieu of archaeological fieldwork and grey literature reporting is a vast topic with many and varied potential starting points. My research design was very broad at the start and I collected a wide range of data, not all of which was ultimately useful. As the project progressed, my research objectives and questions became more focused and precise and so my data collection also became more focused and precise. The methodology presented below was arrived at through adjustments and alterations as I came to understand what specific data I required to inform my investigation and address my research questions. This reflects the iterative and reflexive process of designing and conducting research.

## 3.3 Methodological approach

My approach has been informed by the above framework of understanding data as both scalable and relatable, and a consideration of the limits and the opportunities provided by working with so-called 'Big Data'. Archaeology in England is both generating and recording data at a rate and volume previously never experienced and which is substantially in the form of grey literature reporting; an examination of grey literature in England is also an examination of 'Big Data'.

This thesis takes several different routes towards understanding grey literature in archaeology all of which are briefly listed here and then described in more detail in the relevant sections below. I chose to examine pre-existing large datasets generated by a

variety of organisations and projects which are concerned with either archaeological investigation or grey literature reporting in England with a focus on three datasets in particular that I thought would be most useful; I also had access to the large agglomerated dataset which forms the basis of the EngLaID Project and which provided useful contextual information throughout my research; I collected (mainly digital) copies of individual grey literature reports following a methodology described below; and I analysed these individual reports using a variety of methods. I chose to examine archaeological investigations and grey literature reporting at several different scales; at the national level, within three distinct geographical case study areas and within even smaller sub-sample areas. These different scales of investigation allowed me to employ a variety of techniques for each of these study areas. The following sections describe these different elements of my methodology in more detail.

## 3.4 Datasets relating to grey literature and archaeological investigation

Even a brief initial review of the topic of grey literature reporting and archaeological fieldwork investigations reveals many questions which require supportive data to answer. In order to address basic questions such as 'How many grey literature reports are known to exist?', 'How much archaeological investigation has been undertaken in England? And where?', and 'What is the relationship between records of grey literature reporting and records of fieldwork investigations?' it was necessary to obtain data on both of these interrelated topics. However, collecting this amount of data from scratch would be both extremely time consuming and completely unnecessary as several extremely useful large datasets already exist which can be adapted to address my own research objectives. As discussed in Chapter Two, there are many previous research projects and organisations tackling the topics of either archaeological investigation or grey literature reporting in England and I identified three datasets in particular to be most valuable for my research.

These three pre-existing datasets which form a large basis to my own investigation in grey literature reporting and archaeological investigation in England are the Archaeological Investigations Project (AIP), the ADS Grey Literature Library (GLL) and Historic England's Excavation Index (EI). The AIP was collected via the AIP website on 30th October 2012 (Bournemouth University 2012). The GLL was initially accessed through the online ADS website from October 2012 onwards and then received as a separate extracted dataset from Tim Evans of the ADS on 6th January 2014 (Archaeology Data Service 2014). The EI was collected from HE via the ADS on 26th November 2013 (Historic England 2011).

The AIP dataset was created as a result of the AIP. It is the underlying data which forms the basis of the published results of the AIP (e.g. Darvill and Russell 2002) and interpretative figures and charts produced by the AIP which is based on this data can be viewed online at the AIP website, where the raw dataset itself may also be downloaded. Archaeological investigations were indexed in the AIP dataset through the associated grey literature report and the dataset includes information on authorship, reporting release dates and associated fieldwork investigation dates and location amongst other useful data. The AIP dataset was intermittently updated between 1990 and 2012 as new data was collected until the project came to a close.

The GLL is a continually updated archive held by the ADS and which is composed of grey literature reports obtained from a variety of sources although the main source for the GLL is the Online Access to the Index of Archaeological Investigations (OASIS) project[9]. OASIS is an initiative designed to address issues of tracking and sharing grey literature reporting and functions via an online portal which records basic data regarding the associated fieldwork project and report producing organisations. The GLL is continually

[9] OASIS is currently in the process of being replaced by a new updated system, the Historic Environment Research Archives, Links and Data (HERALD).

updated both as newly generated reports are uploaded through OASIS and also as the backlog of older grey literature held by the ADS and other repositories are digitized and added to the collection.

The EI is an agglomerated dataset comprised of 'archaeological event' data held by HE and now maintained by the ADS. This dataset concerns known archaeological fieldwork investigations and includes data on the locations, the basic fieldwork design, the results (if any) and the organisation responsible for undertaking the investigation. This dataset was originally used a method of tracking data related to fieldwork investigations undertaken by HE (and their predecessor organisations) themselves only but which now attempts to track all known fieldwork investigations within England regardless of responsible organisation. The EI is now also continually updated as information regarding fieldwork investigation undertaken in England is shared to HE and the ADS from a variety of reporting channels. Broadly, these three datasets all datasets reflect both the 'known' archaeology and also the changing nature of modern archaeological practice within England and so all three datasets are strongly pertinent to my research. Both the AIP and GLL datasets are primarily concerned with grey literature reports, while the EI dataset deals with locations of known archaeological investigation. All three datasets are geo-located; the EI with the site itself and both the AIP and the GLL, more indirectly, with the site location that is the subject of the associated grey literature report that is the source for the dataset. This geographic information has allowed me to examine patterns of spatial distribution and data production and understand how these patterns are linked to actual individual grey literature reports. Examining all three datasets in tandem was necessary as these datasets represent different views of the larger picture. Comparison between them is both useful in itself and also because combined together these three datasets give a much fuller and stronger understanding of archaeological investigation and grey literature reporting in England. For

example, a better geographic coverage was provided by using all three datasets in combination and questions on archaeological investigation and reporting in specific regions could be better addressed where reliance on one dataset alone would not have provided enough information; this will be explored in more detail within each of the following case study chapters and is especially apparent in my north Northumberland case study area which is the basis for Chapter Seven.

There are important differences between the three datasets which must be considered when using them as a basis for analysis. The reports indexed in the AIP were collected through in-person visits by the AIP research team to as many different organizations and archives as possible; the organizations did not have to actively contribute to the program and the AIP made every effort to make their list of organizations as thorough and inclusive as possible. The GLL is mainly created through the OASIS project, which generally relies on self-reporting, with producing organizations filling in an OASIS form online and (these days) uploading a digital copy of the report in question, which is then stored in the GLL. Both systems for indexing grey literature reporting have advantages and disadvantages; the ease of digital upload to the GLL using OASIS, for example, can be contrasted with its reliance on self-reporting and potential issues regarding bias that may create. In contrast, the EI was originally based on event records held by HE on work they (and their predecessors) had carried out themselves, but has now been expanded to include archaeological investigations by any organization as compiled by both the AIP and the GLL via OASIS alongside other channels of reporting. This means that the EI should, in theory, be the most complete and useful record of archaeological investigation and associated grey literature reporting in England. A useful exploration of the value of this dataset is presented by Evans (2013) where he explicitly seeks to compare coverage and

completeness of the EI in contrast to other national datasets regarding archaeological investigation.

These datasets all illustrate different aspects of the excavation and reporting process; their methodologies, aims and outputs are different, although together they form an informative window into current archaeological practice and grey literature in England which will be discussed in detail in Chapter Four.

Each of these datasets was stored and managed through the use of FilemakerPro database management software and then also transformed into a Geographic Information System (GIS) using both spatial and attribute data. Using the ArcGIS software package, each dataset was spatially represented. In all three datasets, the location data which was spatially mapped referred to the associated archaeological fieldwork site. In the case of the EI, it was the site itself recorded as being excavated; for the GLL, it was the location of the site which was the subject of each grey literature report in the database; and similarly for the AIP, it was the location of the archaeological investigation as recorded by the collected associated grey literature report. This GIS formed the basis of the spatial and temporal analysis undertaken.

Additionally, I have further adapted each of these datasets for my own research to ensure that all three datasets contain records that are spatially located to the archaeological site they relate to and to only display records relating to sites and reports investigated and created from 1990 to 2010 so that they can remain broadly comparable; the AIP came to a close in 2012 and while the other two datasets are continually updated, there is a data-entry lag between the most recent datapoints generated and their incorporation into the dataset. Each dataset also contains only records relevant to the time periods of investigation of the EngLaID project as whole (1500BC to AD1086). This was to ensure that the results of my own investigation would be easily applicable to the EngLaID project which it was

designed to support. This means that the dataset I am working from does not represent archaeological investigation and reporting in England from 1990 to 2010 as a whole but is instead filtered to focus on the grey literature relating to the 2500 year period from the middle Bronze Age to the time of the Domesday Survey.

There are advantages and disadvantages to this decision. This filtering of the overall data will inevitably effect the spatial and temporal distribution of the datasets; distributions will not be exactly the same as if I was using a dataset which contained all records from all time periods. The focus on fieldwork investigations with archaeological evidence from the time periods of interest to the EngLaID project results in the omission of datapoints relating only to the medieval, post-medieval and modern periods with the result of an overall underrepresentation of modern urban settlements within each dataset. However, I believe that the sheer volume of data provided means that most overall spatial patterns will not be hugely altered by this filtering and that general patterns to modern archaeological practice will still be observable (i.e. the sheer volume of archaeological fieldwork and grey literature produced within Greater London as compared to the rest of the country is still clearly visible). Excavation sites are more normally multi-period so this filtering for later prehistory and early historic periods in England will also include sites that are from earlier or later periods, so excluded sites are not as numerous as might be supposed. A large amount of my analysis has been designed to consider the relationship between individual reports and sites; this methodology is unaltered by whether or not all archaeological sites in England are included in the overall analysis or a particular sub-set. Finally, the focus on the formation and continuous or broken use of field boundaries and enclosures which forms part of the research interest of the EngLaID project allows for a focus upon intrusive fieldwork investigations across a variety of landscapes. This investigative focus on the time periods of interest balances out some of the bias towards towns and urban

archaeology which might come from the overt inclusion of later periods of industrial and modern archaeology; this allows some of the more rural areas which can be overwhelmed by the sheer volume of reporting produced in, for example, London to come forward into view.

I was also aware of the work of other researchers utilising (and generating) the same datasets and designed my investigation in order to compliment rather than to duplicate their efforts. The forthcoming AIP volume for example will produce patterns of distribution of the AIP dataset and present figures relating to the number and region of major report producing organisations as they have done in the past (e.g. Darvill and Russel 2002) whereas my own research additionally contextualises these patterns of distribution in relation to other sources of data, and further characterises the producers of grey literature reporting. The new AIP publication will also focus more on the science of bibliometrics and other numerically driven markers for analysing the use of grey literature reporting (Darvill 2016, p.13) which I decided against reproducing myself; instead I have included more qualitative textual analysis in my research design. Evans has also conducted a wide range of research focused on the use of grey literature reporting which shares many of the same data sources as my own research (e.g. Evans 2013, 2015). Evans' work however is much more focused on the mechanics of digital archiving, database creation and management and the use of semantic web and software applications to increase digital access. Evans presents a detailed understanding of the design, generation and upkeep of the GLL and ideas for future improvements and modifications to improve access and use of this particular archive, all of which have been enormously helpful to my own research. My own research focus however has been much broader in order to understand the wider systems of archaeological fieldwork and drivers of archaeological investigation. Through the use of GIS, my own work adds both a spatial and temporal

element to the analysis of data held within the GLL and which further contextualises this resource through other sources of data.

The data I use at the national level is generally coarser, less filtered and mostly 'uncleaned' (where cleaning is the process of correcting errors, duplicates and omissions in the source data but which may also introduce further errors or bias) while working with case studies allowed me the opportunity to filter and examine data at a more reasonable scale. Using both methods together brings a more nuanced perspective and combines 'rough' or more 'raw' data with 'smoothed' data.

## 3.5 Grey literature report identification methodology

In addition to data relating to grey literature reporting held by the AIP, the GLL and the EI, I also collect and classify additional grey literature reports. Reports are identified using the AIP, HER databases, online digital map-based searches of the GLL and other online repositories and also through site visits to County Archaeology offices, HER offices, County Archives and Local Studies Libraries that cover the relevant study areas. Grey literature reports are initially classed according to what type of archaeological work was undertaken, such as keyhole investigations, evaluation trial trenching or open-area excavation. Categories for grey literature reports are created based primarily according to the relevant categories used in the AIP dataset to ensure comparability and include pre and post determination events. Historic building survey and archaeological desk based assessment reports without any associated fieldwork investigation are not included in the final collection in order to focus explicitly upon the relationship between archaeological fieldwork and grey literature reporting. Relevant categories are any fieldwork intervention reports including but not limited to test pit evaluation, trial trench evaluation, phased evaluation, open area excavation and post determination reporting.

## 3.6 Grey literature database creation

All known reports identified through the identification methodology described above are then entered into a database adapted from the design of the GLL database in particular but also with reference to the AIP and other data sources (Table 2). Again, this dataset was stored and managed through the use of FilemakerPro database management software. This is considered to be the baseline reporting assemblage for the purposes of the investigation and is England-wide. The baseline database identifies the title, author, company, date of release of the report, site name and site location, both by address and national grid reference (NGR) if available. It also identifies investigation type using AIP defined categories, cross reference database identifications, which regional HER holds the associated record and a brief description of the report contents. Each report is also given a unique identifier number (UID). At minimum, this database is inclusive of all information provided by the GLL.

## 3.7 Case study area selection

Although nation-wide analysis of grey literature and archaeological fieldwork investigations was undertaken, I also identified particular case study areas in order to allow for a more detailed investigation of grey literature reports and the context of their production (Figure 6). My first case study area is focused on the Lea Valley near to London, my second is a coast-to-coast transect across the middle of England stretching roughly from the Wirral peninsula to the Wash and my third and final case study area is positioned in north Northumberland. Overall I chose to situate my case study areas in regions that may be expected to be archaeologically rich through their topography and geology in order that they should contain sites relating to a diverse range of archaeological interventions by a wide range of participants. This ensures that each case study area

should have a number of grey literature reports in order to better investigate significant patterns and relationships within the dataset. I was also interested in capturing both the diversity of grey literature reporting and producers across England and in identifying potential drivers of this diversity so I chose my case study areas to provide a suitable cross section across England including variations in current geographic, economic and settlement patterns. These study areas were also chosen in tandem with the development of the EngLaID Project case study areas which has allowed integration and communication between the findings of this research and those of the EngLaID research project. The introduction to each case study chapter includes more detail on the rationale behind the selection of each particular case study area.

## 3.8 Grey literature collection in case study areas

Although the GLL does of course contain copies of reports from across England it is not a whole and complete representation of every single grey literature report produced in England; however, ensuring a complete collection of grey literature reports for the whole of England is beyond the scope of this project. Instead, collection of the individual grey literature reports in contrast to collecting data about grey literature reports was only actively pursued for each of the case study areas and not for the whole of England. If the total number of identified grey literature reports in the case study area allowed, one hundred percent sampling (or as close to one hundred percent as possible) was pursued such as in the north Northumberland case study area. However, where the total report number in the baseline reporting assemblage was far too high for reasonable collection of each individual report, a sampling strategy was employed in support of collecting as much as possible. This was helpful for example where the Lea Valley case study area overlapped with the dense grey literature reporting found within Greater London. This sampling strategy sought to identify key reports that fell into a cross section of easily

observable categories (i.e. large commercial archaeological contracting units, independent local volunteer run societies, etc) and a broad geographic distribution in order to ensure the widest possible range of report types within the sample.

Copies of full reports were first sought out via online digital archives, then through visits to county archaeologists and local and county level paper archive repositories, as well as visits to commercial field unit premises if necessary. Time and financial constraints limited some of these forms of collection. Once complete, the report database for each study area was converted into GIS shapefiles in order to further analyse patterns and relationships within grey literature production and dissemination using the ArcGIS software package.

## 3.9 Detailed grey literature report database creation in case study areas

The baseline database was then expanded as additional copies of reports were obtained, and more detail relating to each collected grey literature report was included in the database for the case study areas. All grey literature reports from within each case study area were reviewed for a series of markers which were entered into the detailed grey literature report database using a proforma I designed based on my detailed database structure design (Figure 7 and Table 3). My intent was to explore through these specific markers whether or not it is possible to identify a consistent mode of grey literature report production for unique producing organisations and to identify the underlying structural nature of grey literature reporting. This database was designed to complement the further detailed textual analysis of selected grey literature reports within each case study area. These markers were chosen in order to attempt to usefully categorize and describe the mechanics and design of each grey literature report, rather than attempting an in-depth analysis and comparison of the archaeological data contained within each report. I selected these markers in order to capture a wide range of potentially significant data

points and included space for both objective quantitative data (i.e. number of identified authors) and also more interpretative qualitative data (i.e. comments on the strengths and weaknesses of conclusions). I divided this detailed data collection into many thematic data categories; report identification, basic data, cover details, authorship, organisation information, date, abstract, quality assurance, navigation and sections, acknowledgements, specialist reporting, maps, figures, photographs, conclusions and discussion, and general comments. Within each thematic category, specific variables and reflexive comments were recorded for each grey literature report. These variables were chosen as being relevant to identifying any potential underlying structure of grey literature reporting. This detailed grey literature report database was created for each case study area and used to support further detailed and comparative analysis of grey literature reporting within the case study areas as further described in section 3.13 below.

## 3.10 Additional data collection

My analysis and interpretation also utilizes the many other datasets collected by the EngLaID project in order to better understand the nature and distribution of archaeological field work and associated reporting across England. These datasets include the PAS, AMIE, NMR and HER data and is mainly reviewed using ArcGIS software; these datasets are more fully defined in the attached glossary of terms.

Additional data regarding commercial archaeology and grey literature reporting has been sourced as necessary to elucidate detail and perspective. For example, PUNS (Jones *et al.* 1999) contains much useful information to assist in creating an understanding of archaeological field work and publication in England since 1990, as does the CIfA's Profiling the Profession series (1999, 2003, 2008, 2013).

## 3.11 Analysis methodology

My data analysis methodologies were designed to reflect the optimal granularities of data analysis from coarse to fine which were best utilised at the national level or within each case study area, resulting in a multi-scalar approach to understanding the data. My analysis methodology was based on the categories of the detailed report database and the use of GIS spatial analysis, as well as a functional review of grey literature form and additional textual analysis through detailed reading of individual reports within the case study areas. These analyses explore significant patterns and relationships regarding grey literature reporting and archaeological fieldwork.

## 3.12 England-wide analysis

At the national level, my analysis primarily focused on the nature and distribution of archaeological organizations which produce grey literature. Through this analysis I sought to gain a broad understanding of the breadth and range in types of archaeological organizations conducting fieldwork in England, the amount and kind of fieldwork that has been undertaken across the country and the volume and distribution of associated grey literature reporting.

The AIP, GLL and EI datasets were spatially mapped across England and their distribution, concentration and fluctuations of production over time were compared. Top producers of archaeological reporting were analysed through simple count of report numbers per organization. Spatial mapping was conducted to examine the spatial and temporal patterns of the producers of archaeological reporting relating to the broad themes of regionality (or territoriality), density and range of archaeological fieldwork and reporting.

Initial mapping was done using simple point pattern analysis (the traditional 'spots on maps' distribution figure). Further analysis was achieved using ArcGIS analytical tools and techniques which address point pattern analysis. This included the use of the Kernel Density Estimate (KDE) tool in ArcGIS to create 'heat maps'. KDE modelling is based on the concept that a spatial point pattern has density between recorded point locations. This density is estimated through summing the number of events which are multiplied by a numeric variable (known as the 'population') within a region (known as the 'kernel') around each point. This results in a continuous density surface which shows the spatial variation in the underlying 'population'. KDE plots usefully represent areas of higher and lower 'population'. KDE plots are one of the most useful ways of moving from a point pattern to a more realistic surface model of a variable (O'Sullivan and Unwin 2010, p.68-71). Other additionally useful spatial analysis techniques were also employed such as spatial binning, sometimes referred to as a form of Quadrat analysis (Wheatley and Gillings 2002, p.128). Spatial binning relies on constructing a grid to overlay the study area which can be based on a wide range of shapes such as squares, rectangles, triangles or hexagons. It should be noted that it is not a requirement for the grid or spatial bins to be regular, depending on the nature of the data and goal of the analysis, but for the purposes of my own analysis using a regular tessellated grid is the most applicable approach. The relevant category of data is then recorded in aggregate for each grid space or spatially representative bin (i.e. Bin 1 = 12 data points, Bin 2 = 24 data points, etc.). This method of spatial binning allows for the construction of a spatial histogram, where the data presented is first spatially sorted and agglomerated. The resultant figure would indicate the overall data value within each bin. This method has several advantages including that it operates well at scales where individual point pattern is too difficult to visually discern and that it allows for a combined spatial pattern analysis of datasets with different

underlying characteristics. For example, data in one dataset might have been collected to be spatially accurate to the nearest metre, while data in another dataset might have been collected to be spatially accurate to the nearest kilometre. A simple point pattern distribution of both datasets would be fundamentally flawed by presenting different values of accuracy without any differentiation between them. By combining both datasets and spatially binning them in squares of one kilometre (the lowest limit of spatial accuracy), both datasets can be spatially mapped accurately and usefully together while also addressing their differences in a form of exploratory data analysis (Wheatley and Gillings 2002, p. 142). While both of these techniques provide underlying statistical data which may be used for further analysis, they also usefully visualise the data where data visualisation is a technique reliant on the manipulation of data presentation which allows new methods of viewing and therefore understanding underlying patterns and trends within large datasets. I have found these methods to be particularly useful for understanding my own dataset.

## 3.13 Case study areas analysis

Case study areas continue using this spatial analysis approach but allowing for greater detail and going beyond the broad national level themes of regionality, density and range in order to examine significant patterns and relationships within the dataset. Case study areas allow a more focused examination of the data by cross-referencing a number of important variables such as the unique archaeological organization, the type of grey literature report and when the report was released to obtain a greater understanding of the relationships between grey literature production and archaeological fieldwork. Grey literature reporting is contrasted with the known archaeology as recorded in the other available EngLaID datasets such as the HER and PAS for each case study area. Grey literature reporting is also compared to known excavation and visible trends in planning

and development to illustrate the relative completeness or otherwise of expected and achieved holdings of grey literature reports.

Further analysis was conducted in order to compare and contrast the various available datasets in terms of their distribution within each case study area against various elements such as county divisions or modern land use. I used squares measuring 10 km by 10 km as a sampling strategy in order to make these internal comparisons within each case study area more directly comparable in terms of density and activity levels within each sub-region. These smaller sub-sample areas within each case study also allowed me to address some of the issues surrounding merging multiple datasets, location uncertainty and duplicate entries for these 10 km square areas. I first explore my three main datasets as represented within each 10 km square area and discuss identified issues and trends in the data.

Based on the results of this more detailed analysis within each case study area, I then select several individual report producing organisations which are grouped into two comparison groups. These grey literature reports were reviewed for a series of markers which were described in section 3.9 above. The results of this review are analysed and presented, along with my assessment of the implications of the results.

The final analytical stage for each case study area was an in-depth comparative textual analysis of grey literature reports selected through a different common theme for each case study area. Within the Lea Valley case study area, I chose to review grey literature reporting which concerned the same type of archaeological evidence from the same period; Iron Age settlement sites. For my second case study area across the middle of England, I focused on grey literature reports with a shared specialist category of archaeological evidence; human remains. In my final case study area in north Northumberland, I chose to focus on grey literature reports which dealt with archaeological investigations arising from

the same distinct type of modern development; large quarry sites. I wanted to capture some of the complexity and diversity of grey literature reporting by examining grey literature reports with a varied thematic focus. For each grouping of grey literature reports, I then conducted detailed textual analysis comparing form, methodological approach, presentation of archaeological evidence, specialist reporting and discussion and conclusions. I conclude by presenting my assessment of the significance of the results of this detailed textual analysis for each case study chapter.

## 3.14 Conclusion

The methodology detailed above allows for an investigation into the creation and distribution of archaeological grey literature across England as a whole, while the inclusion of the case study areas permits a more detailed examination of the nature and embedded relationships of archaeological grey literature. My multi-scalar, iterative methodological approach is designed to address my broad research questions regarding the nature, production and effectiveness of grey literature reporting. This methodology allows for a wide range of evidence and creates a broad base of investigation. This approach has enabled a critical evaluation of the evolving processes contributing to the nature archaeological fieldwork and grey literature reporting in England in recent decades.

# 4 National Overview: Grey literature and Archaeology in England

## 4.1 Introduction

In this chapter I will discuss the relationship between grey literature and archaeological investigation in England and the changing context of the wider archaeological framework between 1990 and 2010. I will first examine the three main datasets I have used for this project and the information they portray at the national level as a basis for characterizing the nature of archaeological investigation and reporting in England. I will examine factors which impact their spatial and temporal distribution, and assess how this contributes to our understanding of the English archaeological record. As a reflection of the grey literature production process from fieldwork to reporting, I will then review archaeological fieldwork investigation in England as represented in the data, followed by a consideration of the producers of grey literature in England and their character, and concluding with an appraisal of patterns in archaeological grey literature reporting across England over recent decades.

## 4.2 Comparing the datasets nationally

In order to begin to explore grey literature in England, it is necessary to first evaluate the current knowledge of archaeology, archaeological investigations and grey literature reporting as provided by the most relevant available data. The GLL, AIP and EI datasets as I have adapted them as described in Chapter Three contain more than 40,000 records between them relating to archaeological activity in England. As an entry point to

exploring these massive datasets I began by comparatively mapping their spatial distribution across England which allowed me to identify resultant patterns of interest and difficulties arising from each datasets unique character.

## 4.3 Problems in spatial distribution

In an ideal world, each site that has been the subject of an archaeological investigation should appear in all three datasets and therefore produce identical overlapping spatial patterning when mapped: once in the EI indicating that a site has been investigated using archaeological methods; once in the AIP indicating that a report has been produced under the auspices of a particular organization; and finally, once in the GLL indicating that a digital (or digitized) copy of that report is now held in the ADS Grey Literature Library. However, as the comparison of all three datasets indicates, there is considerable variation in spatial patterning between each dataset (Figure 8). When the makeup of each dataset is examined more closely, it is clear that they contain vastly different numbers of records with the EI containing more than three times the amount of records than the GLL (Figure 9).

When the coverage of these three datasets is comparatively analysed using the technique of spatial binning as described in Chapter 3, the contrast between known archaeological investigations and known archaeological reporting (whether noted in the AIP records, contained within the GLL or appearing in both datasets) makes it apparent the two different kinds of elements do not match up (Figure 10). When viewing figure 10, the ideal colour for all spatial bins (the 'cells') would be the darkest shade of blue indicating data from all three datasets; however, out of all the 4267 cells which contain some data only 1345 cells (just 31 percent) fall into this category. The lighter blue indicates one of the grey literature based datasets (either the GLL or AIP) and the EI sharing a spatial bin which at least signifies areas of known archaeological investigation matching up with

locations described in known archaeological grey literature within each five km area although not agreement between all three datasets; this category accounts for a further 1502 cells or 35 percent of total cells with data. Finally, the grey areas indicate no overlaps between the datasets at all; this category accounts for the remaining third of all populated cells. These datasets are the closest thing the English archaeological community has to a comprehensive record of grey literature reporting and archaeological investigations within England and so it is important to understand what is causing these clear disparities.

In the worst-case scenario, the explanation for the visible differences between each dataset is that the differences are real. Sites are dug without generating any known archaeological reporting. Reports are collected that do not relate to any known archaeological site (other than through the record of the report itself). Reports are noted to exist but a physical or digital copy of the report cannot be found. This would be an alarming view of the state of archaeological practice over the last twenty years and it is a concern that has been voiced before (i.e., Webley *et al.* 2012).

There are, however, several classes of possible mitigating explanations for these disparities, which can be linked to broader questions regarding the nature of archaeological data in England.

### *Differences in Methodology*

Each dataset has been collected and created in different ways, by different organizations, and with different aims, some of which could impact on the information each database contains. For example, the AIP relied on the data collector's knowledge of archaeological organizations in order to assemble a list of locations that required a visit, meaning that despite efforts to be as comprehensive as possible some organizations could still be overlooked. The GLL on the other hand relies on self-reporting from archaeological

organizations, requiring a widespread knowledge and uptake of the OASIS system amongst different groups. Despite efforts by HER officers and County Archaeologists to make OASIS reporting a condition of the brief for commercially driven archaeological projects, this means that some grey literature producers may not participate which may be the biggest issue between these datasets. Finally, both the AIP and the GLL feed into the EI, which will then inherit any issues from the original dataset.

### *Differences in Content*

Each dataset is not measuring identical inputs, making direct comparisons inaccurate. For example, one archaeological investigation may generate multiple reports, or one report may be linked to several sites (such as a long-distance pipeline with excavation areas spaced at regular intervals), resulting in disparate totals between datasets and possibly giving one location the appearance of more investigation than another. These datasets are all updated, shared or released on different schedules, meaning that perhaps most recently generated records may be present in one dataset but not another.

### *Differences in Design*

Each dataset has been designed to their own specifications. They have created their own categories and use their own terminologies. For example, what is classed as early medieval in one dataset may be classed as medieval in another, again resulting in disparate totals between datasets and a visible difference in distribution patterns when the data is filtered down to the time periods relevant to my own research.

### *Simple Errors*

Finally, each dataset may be subject to simple errors. For example, the geo-location of an individual entry could be at fault, effectively removing the relevant record from being visible within the study area, such as by mistakenly placing a site meant to be within England somewhere in the North Sea instead. The sheer size of the combined datasets

makes it impractical to 'clean' each dataset to an extremely high level so it is inevitable that errors of this kind will persist. This category would also cover data reported to differing levels of spatial precision such as to the nearest sub-metre, metre or kilometre which would also impact on the resulting spatial patterning of the data.

### *Are these datasets relatable?*

These explanations illustrate why we would not expect to see identical results from each dataset and indicate that different methods must be used in order to make a more meaningful comparison between them. Some of the above listed confounding factors can be reduced or eliminated by looking at the spatial distribution of each dataset in a different manner than simple count and presence/absence in an identical location. In order to better understand the relationship between these three datasets, I used the KDE tool in ArcGIS as described in Chapter 3 in order to create a continuous surface for each dataset within England which I then used to generate 'heat' maps (Figure 11).

These 'heat' maps use gradations of colour to illustrate the relative density of activity for each dataset, with areas of intense activity shown in red and gradating down through to areas of no activity shown in yellow. These 'heat' maps make it apparent that although the specific data within each dataset is quite different, as already observed, the overall spatial patterning of each dataset is broadly comparable, with the exception of the area including Lincolnshire and some of the surrounding middle England region which is much more heavily represented within the GLL than in either the AIP or EI dataset. Despite the marked differences in distribution shown in Figures 8 and 10 and total numbers of records graphed in Figure 9, these maps illustrate the largely similar broad general pattern between each dataset; although clearly *not* identical, these maps reassure that the data contained in each dataset is broadly comparable and relatable with the exception of the Lincolnshire region (where the high amounts of data generated by the City of Lincoln are not equally

represented in all three datasets, resulting in a non-matching distribution). Areas of significant archaeological investigation and reporting are similar across all three datasets, as are areas with a paucity of archaeological investigation and reporting. From north to south, each map illustrates similar areas with high concentrations of archaeological inquiry and grey literature; near Newcastle and along Hadrian's Wall to Carlisle; York and, to the north, along the Vales of Mowbray and York; around both Manchester and the historic city of Chester a little further to the south; the area of Birmingham and a large swathe from Worcester up to Leicester; Norwich, Cambridge and Colchester in the east; Oxford, Cirencester and Bristol to the west; London and large area to the north of London between Oxford and Cambridge; Canterbury and the nearby coast, as well as along the southern shoreline and the South Downs between Chichester, Brighton and Lewes; Southampton, Salisbury and Salisbury Plain; and finally Dorchester and Exeter in the south-west. Interestingly, these three datasets clearly show archaeological investigation and grey literature are not uniformly distributed across the country which could be a reflection of the uneven spread of past human populations or instead linked to more modern causes. Perhaps unsurprisingly, these dataset distributions also illustrate that the majority of concentrations of archaeological investigation and reporting are near modern urban centres and these trends are most likely driven by the development and expansion of these populated areas. Overall an analysis of these datasets as illustrated in Figure 11 shows that although the visible differences in spatial point pattern distribution are clearly present, the data distribution between each dataset remains broadly comparable and further analysis using these three datasets would produce viable results.

## 4.4 Affordance, opportunity, bias and obscuration

These heat maps also illustrate some of the shared biases contained within each of these datasets which can also impact the visible spatial patterning of archaeological

investigations and grey literature reporting and therefore influences any attempt at characterizing grey literature in England. Issues such as visibility, obscuration and opportunity can impact upon the discovery and study of archaeological material. The term affordance has been adopted here as encompassing the interaction between the evidence that forms the archaeological record and its recovery in the present day through archaeological investigation. Affordance is a method of modelling the relationship between potential and recovery. Where there is high affordance, then there should also be a high correlation of archaeological data; where there is low affordance, then there should also be a low amount of archaeological data. Affordance studies and landscape archaeology were originally linked by Ingold (1992) and my adoption of affordance as a useful paradigm for conceptualising bias and opportunity follows the work of Gillings (Gillings 2007, p.38-9) and Green (Green *et al.* 2016).

Undertaking archaeological investigation requires opportunity. Developer funded archaeology can only take place where development is happening, for example, while metal detecting is more productive where the ground has been recently ploughed. A shared bias towards archaeological investigation occurring in areas of known development can be viewed in Figures 8, 10 and 11. For example, the series of archaeological works undertaken in advance of the construction of the Channel Tunnel Rail Link (CTRL, also known as High Speed 1) railway linking London and Folkstone in Kent is visible across all three datasets, indicated by areas of intense archaeological investigation and reporting creating the appearance of a line running north west to south east connecting London and the south east coast. The areas with a highest visible concentration of excavation and reporting across all three datasets are also all surrounding major urban areas, illustrating the link between urban growth and development and archaeological inquiry. It follows

that London and its immediate environs is visibly the most significant and densely archaeologically investigated area of excavation and reporting across all three datasets. The continued present-day visibility of archaeological sites also impacts the patterning of modern archaeological investigations; a shared bias towards reinvestigating already known archaeological sites as a focus of study can also be traced in these maps. For example, when all three datasets are spatially mapped as in Figures 8, 10 and 11 they each show evidence of a visible line connecting Carlisle and Newcastle in the north. This visible feature in the data follows the line of the Roman monument Hadrian's Wall where the continued interest in exploring the nature of this highly visible monument, as well as its protected heritage status, has resulted in a concentration of archaeological activity and associated reporting.

Obscuration of the archaeological record is a more difficult bias to visibly discern. There are many factors which can contribute to obscuration including woodland cover, built-up areas and the presence of peat or alluvium, for example. Some of these factors can be difficult to quantify in a meaningful way and the bias that they create may not be as clearly observable as the other biases discussed above. The current presence and historically long-term continuous survival of the New Forest, for example, may provide an explanation for why that particular location within England shows a relative paucity of data regarding archaeological investigations and associated reporting compared to neighbouring areas. Mapping known constraints to archaeological fieldwork like ancient woodland areas of historic forestation can assist in visualizing these types of bias but the relationship between some types of obscuration and the current level of archaeological investigation can be difficult to conclusively ascertain.

Work undertaken by Green *et al* in support of the EngLaID project has attempted to quantify and map some of these constraints as discussed above in order to create an

understanding of archaeological affordance in England (Green *et al.* 2016, Figure 12). Using a variety of publically available mapping (as detailed in Green *et al.* 2016, p.10-13), Green combined relevant constraints as layers which were then used to measure areas of high and low affordance for archaeological results. This map illustrates more archaeologically dense areas of the country in yellow and red with clusters of high affordance around historic towns and cities and lower affordance in the north west, around the Wash and across the Weald which generally matches respective areas of both higher and lower densities of known archaeological sites indicating this model of affordance (although imperfect) is useful. As Green has stated, "We can begin to understand variation in the archaeological record as an artefact of modern archaeological opportunity and practice. The most interesting areas are those with an apparent high affordance but with a low number of sites or those with an apparent low affordance and a high number of sites" (Green et al. 2016, p.13).

An understanding of the various influencing factors and inherent biases of these datasets is necessary in order to discuss the distribution of archaeological investigation and reporting within England. Even once these factors and biases are accounted for, the spatial patterning of the data illustrates that archaeological investigation and associated reporting are not evenly spread. Some areas within England have no or relatively little investigation while others have a large amount. This may reflect genuine patterns of (pre)historic human habitation in the past in England but they may also be a result of modern constraints upon archaeological investigation.

## 4.5 Characterising archaeological investigations in England

Archaeological fieldwork in England has clearly increased over the last few decades, which is perhaps best illustrated by looking at the complete unfiltered EI dataset from 1970 until 2010 (Figure 13). This figure clearly illustrates the PPG 16 effect with a

noticeable increase in archaeological investigation in England after 1990. As discussed in section 4.4 above, while there are clearly areas where a consistently higher amount of archaeological investigation has occurred over the decades than in other locations, such as along Hadrian's Wall, there is also visibly far more diversity in the locations of archaeological investigation after 1990 then in the preceding decades. This is a positive result of development-led archaeology for the English archaeological record; development has led archaeology into previously less investigated territory. This clear increase in archaeological investigation is also what has fuelled the large post-1990 increase in grey literature reporting.

There are additional aspects of the general character of fieldwork which also influence the related character of grey literature reporting. Spatially mapping the EI by method of archaeological investigation reveals interestingly diverse patterns (Figure 14). When intrusive investigation techniques such as evaluation trial trenching and open area excavations are compared, they show very similar areas of increased application. When these intrusive types of fieldwork are contrasted with non-intrusive survey techniques such as fieldwalking and geophysical survey however they show very different density distributions. Some explanation for this diverse patterning can be attributed variations in affordance for each type of investigation. For example, areas with the right conditions to be favourable for geophysical survey work may then see an increase in the application of geophysical survey techniques for evaluation purposes in contrast to intrusive evaluation trenching. There are cost differences between conducting intrusive and non-intrusive investigations, with excavation generally being the most expensive down to much cheaper alternatives such as fieldwalking survey. This may also reflect differential norms of archaeological practice across the country; it may be more common in some areas to perform archaeological trial trenching than geophysical survey simply for reasons of

locally accepted conventions for example. In terms of grey literature, Figure 14 illustrates that the majority of evaluation and excavation investigations are concentrated in the south east while geophysical survey has areas of more concentration in the south west and the north which would be reflected in the types of grey literature found in each area. Although these are all techniques of archaeological investigation, they focus on different aspects of archaeological evidence and have different strengths and weaknesses. Some regional variability in grey literature across England should be expected as a direct result of communicating the results of different methods of fieldwork investigation.

## 4.6 Characterising producers of archaeological grey literature in England

Those undertaking the archaeological investigations may also have an impact on the resultant grey literature report. It is possible to better understand the producers of grey literature in England through a closer examination of the data; by reviewing the GLL, AIP and EI datasets it is possible to characterise the organizations producing grey literature in England and examine how the differences between grey literature producers impacts upon grey literature reporting.

### *The top grey literature producers*

By combining the GLL, AIP and EI datasets and through using simple count, it is possible to rank grey literature contributors by the volume of reporting they produce and also to spatially map their location (Figure 15). This does not measure the comparative length or complexity of the reporting but merely provides a general marker to understand which organizations are most active in the creation of grey literature. Although best efforts were made to track various changes of name and organizations from 1990 onwards in order to attribute grey literature reports to the correct respective organization this ranking should be

understood as an exercise in portraying the nature and composition of grey literature producers in England rather than as a definitive listing.

Along with Figure 2, this exercise clearly demonstrates that commercially driven archaeology organizations produce the majority of grey literature reporting in England as they form the majority of the upper rankings of the list. This is supported by Darvill and Russell (2002) who produced a similar analysis but which is now 15 years out of date. Although development-led archaeology dominates this list, a closer examination of those who contribute the largest amount of grey literature does however show some variation in the type of responsible producing body and reveals interesting contrasts in spatial distributions.

Based on the above described methodology the five organizations that produced the greatest amount of grey literature reporting from 1990 to 2010 are Museum of London Archaeology (MoLA), Oxford Archaeology (OA), Suffolk County Council Archaeological Services (SCCAS), Cotswold Archaeology (CA) and Wessex Archaeology (WA)[10] (Table 4). By making a closer examination of the five biggest contributors of grey literature it is possible to identify a number of significant themes which illustrate the range of different types of archaeological organizations which in turn influences the nature of grey literature reporting that is produced. By using the KDE tool in ArcGIS to generate surface density mapping of the archaeological investigation site locations associated with the grey literature records for each of the top five report producing organizations I was able to examine the interrelated issues of range, density and regionality in archaeological investigation and grey literature reporting.

[10] Please note that this 'top five' list is not definitive as these numbers are based on the datasets as adapted and modified as described in Chapter Three but is instead a useful basis for comparative analysis.

### *Range*

Although each of these organizations generates high volumes of grey literature reporting, their comparable geographical ranges of operation are significantly different. For example, a comparison of OA and SCCAS illustrates two very different approaches to conducting archaeological field work in England (Figure 16). Oxford Archaeology (in their own words) is, "one of the largest and longest established independent archaeology and heritage practices in Europe. With over 250 specialist staff, and permanent full-service offices in Oxford, Lancaster and Cambridge, we provide heritage services to both public and private clients" (Oxford Archaeology, 2016). OA has a broad spread of archaeological investigations that cover a large proportion of England and beyond. They have produced a high volume of grey literature reporting centred on the Oxford region where their head offices are situated but additional foci of production are noticeable near the locations of their two satellite offices in Lancaster and Cambridge. OA produces grey literature reporting that draws upon work conducted over a broad area of England. In keeping with their company description and stated aims, their range is large. In contrast, although SCCAS produced a comparable amount of grey literature reporting, their archaeological investigations were almost entirely sited within the county of Suffolk. The SCCAS archaeological field team were until 2015 a 'self-financing unit' which was embedded within the archaeological service provided by Suffolk County Council; they have since been divested and formed the Suffolk Archaeology Community Interest Company (Suffolk Archaeology CIC, 2016). The connection with Suffolk County Council may have impacted the remit of their operations; the range of their archaeological investigations is clearly defined as the borders of the county of Suffolk. Interestingly very few other archaeological organizations operate within the county of Suffolk; this lack of competition

is perhaps a beneficial effect to SCCAS from their narrow focus of operations by allowing them to capitalise on their deep specialist knowledge of the region.

Despite being similarly placed in terms of the volume of reporting they produce, the different underlying nature of these two companies demonstrably has a significant impact upon where they undertake archaeological investigations; this in turn may also have a significant impact upon the nature of grey literature reporting they produce. This is a theme that will be further explored through detailed examination of grey literature in the case study areas.

### *Density*

The range of operations of each of these high volume grey literature producers is associated with another aspect of archaeological investigation which may influence the nature of the grey literature that is produced, namely the density of archaeological investigation in any given area. For example, CA and MoLA have a roughly comparably sized geographical range of operations with a city at the centre when the fieldwork associated with each grey literature report is spatially represented, illustrating their respective focus on archaeological investigations in Cirencester and the surrounding area and in Greater London (Figure 17). MoLA however has produced almost three times as much grey literature reporting than CA has over a similar time period and covering a roughly similar sized geographical range; in fact, CA has the larger range of the two. The extreme density of archaeological investigation conducted by MoLA has made them by far the biggest producer of grey literature in England despite the majority (although not all) of their fieldwork being conducted within Greater London. Despite having a more focused area of work than perhaps other report producing organizations operate within, MoLA demonstrates that the Greater London area, unlike the rest of England, supports an extremely large volume of archaeological investigation. Unlike the veritable monopoly on

archaeological investigation in Suffolk demonstrated by SCCAS however, a wide range of other grey literature report producing organizations also operate within the London area. Despite the extremely high volume of reporting produced by MoLA there are a number of other organizations with a high reporting volume that also operate within the London region showing that London is a particularly rich field for archaeological grey literature reporting.

There are a number of factors that may explain how and why the London region appears to support such a large volume of archaeological investigation and associated reporting. One obvious explanation is the combination of development pressures and economic power and growth centred in the London area as both the UK capital and economic centre. Large-scale development has continued apace in London despite the economic recession of 2008 onwards unlike in many other regions of England where development and therefore any associated development-led archaeology had slowed or stalled as a result of the economic downturn. London has also attracted a number of high profile large-scale engineering projects such as Crossrail, the Thames Tideway Tunnel and the creation of the Olympic Park, all of which also created opportunity for large amounts of archaeological investigation and the resultant large volume of grey literature reporting focused on the Greater London region. Additionally, the focused and centralized nature of both the curatorial Greater London Archaeological Advisory Service (GLAAS) and the GLHER may result in stronger archaeological monitoring and planning control than it may be possible to achieve elsewhere in the country which may also influence the high volume of grey literature reporting. All of these factors combine to make London a strong base for any commercial archaeology organization to operate from.

The intensity of archaeological investigation and the resultant density of reporting produced may also have an impact on the nature of grey literature in such an area. Such a

comparably high volume of reporting produced in one localized area would inevitably require higher levels of oversight and control than other areas of England with less activity. Although this could produce a decline in quality as overstretched resources are overwhelmed this is not an inevitable conclusion as conversely such a high density of development and associated archaeological investigation may benefit through the creation of centralized systems such as GLAAS that can share resourcing and more rapidly develop highly experienced agents which could reasonably result in a higher quality of grey literature reporting.

### *Regionalism*

Finally, as is clearly demonstrated by the above comparisons of the varying geographic range and densely focused high volume of investigations being undertaken by grey literature producing organizations across England, an element of regionalism forms part of the nature of archaeological investigation at the national level. A review of the top five grey literature producers in England illustrates that different producing organizations effectively work within their own 'territory' although the territory of many organizations may overlap or be shared (Figure 18). No grey literature producing organization, large or small, appears to work across the whole of England. Furthermore, all of the organizations which contribute the highest volume of grey literature reporting appear to be focused on a similar overlapping territory of the south and east, especially including London and the Thames Valley region. There are only a few exceptions where large grey literature producing organizations regularly conduct archaeological investigations in the northern or western-most regions of England, such as OA. These areas however are demonstrably not devoid of archaeological investigation. These investigations must be undertaken by organizations operating at a different scale of production and territorial focus which is less

visible at a national scale and therefore requiring further investigation at a more detailed case study level to understand.

This regional element has interesting repercussions for any large-scale synthesis works undertaken within England. If the nature of the producing organization may impact the character and content of grey literature then the regionalism of these organizations would essentially translate into a regionalism of archaeological reporting where visible trends may not be a product of the archaeology but instead a reflection of the modern-day practice of archaeology. Gaining an understanding of the patterns of past human behaviour becomes much more difficult when there is a widely varying standard of available data. Bradley encountered these difficulties in the process of researching his own synthesis work *The prehistory of Britain and Ireland* (Bradley 2007). In describing some of the problems he encountered in the process of researching and writing *The prehistory of Britain and Ireland*, he stated that, "In regions where a small number of organisations had undertaken fieldwork it was possible to gain an overview" but that in areas where a larger number of different organizations had undertaken fieldwork it became "difficult, and sometimes impossible, to compare them between different parts of the study area" (Bradley 2012, p.174).

Overall, a wide variety of groups are shown to be producing grey literature in England although clearly the main producers are commercial archaeological organizations specializing in development-led archaeology. These groups have different ranges of activity from a focus on one city or one county to operating across several counties or regions, although no one group appears to work universally across all of England. These commercial groups also appear to experience differing levels of intensity of archaeological investigation and related grey literature reporting, whether they operate with a large or small geographical range. Finally, these groups all appear to work within their own

boundaries or self-determined territories but the larger commercial groups generally share an interest in the central south area of England; very few of the archaeological investigations that take place in the very north or north-east (such as Cumbria or Northumberland) or that take place in the far west (such as Cornwall) are undertaken by any of the most active grey literature report producing groups.

## 4.7 Characterising grey literature reporting in England

Through this initial characterisation of both archaeological investigations and the producers of archaeological grey literature in England it is already possible to better understand how and why grey literature is created in England. This characterisation also allows for further exploration of what drives the phenomenon of grey literature production in archaeology. Although grey literature may be produced for a wide variety of reasons and by a wide variety of participants the reality shown by examining the data at the national level is that the majority of grey literature is produced by commercial organizations within the framework of English development and planning law.

The AIP has in the past usefully examined the relationship between planning applications and archaeological fieldwork although this has been made more difficult as there is no statutory requirement to keep records on the archaeological monitoring of planning applications (Darvill and Russell 2002, p.9). Patterns in planning applications can be related to patterns in archaeological investigation. Year-on-year cyclical changes in planning applications are indicated by peak periods followed by troughs with a profile of rapid decline and slow recovery and these cyclical changes would be expected to be reflected within development-led archaeology as well, meaning that volumes of grey literature should also increase and decrease cyclically over time as a response to variations in development pressures. Interesting analysis has been conducted using statistical packages made available from DCLG concerning more recent planning applications (e.g.

Evans 2015) but the release of historical data is uneven and not currently readily available for the years prior to 2010, so it is not possible to make such a comparison for this study. When archaeological investigation and reporting are viewed over time however some elements of this cyclical pattern can still be observed, although some disparities within the three datasets again emerge (Figure 19). All three datasets tail off towards the end of the time period under review which clearly reflected the result of the economic downturn in 2008. The EI and AIP roughly mirror each other with a peak in investigation and reporting around the turn of the century, which reflects the prior economic boom. In contrast, the GLL instead shows a rather flat profile with a clear uptick when the OASIS system is more widely adopted in 2003 reflecting more of its internal character than that of the external forces of planning and development cycles. A more recent updated version of the GLL would most likely more closely mirror the pattern currently visible in the AIP and EI as the number of older grey literature reports requiring digitisation is constantly being reduced through diligent updating which will mask the effect of the 2003 increased user base. Grey literature has a broad spatial distribution across England, although there are clearly areas of sparsity and concentration which however generally reflects the spatial distribution of known archaeological investigations in England as shown in section 4.3. When this spatial distribution is considered in terms of regional or administrative boundaries interesting patterns emerge (Figure 20). When densities of archaeological grey literature are matched against county boundaries, there is no clear correlation. However, when these same densities of archaeological grey literature are mapped against HER regions, many areas void of data are visibly related to specific HER territories. Rather than suggesting that no grey literature exists for these particular areas, this implies that grey literature from specific HER regions is not being connected to the ADS Grey Literature Library. This signifies a clear linkage between the activities of regional HERs

and dissemination of the results of archaeological investigation. However, this may also reflect the state of the grey literature library at the time of my own data collection and no longer be a current concern; the digital backlog of grey literature reporting being added to the ADS archive is continually being addressed and reduced using a regional based methodology so that geographic sections are brought up to date in sequence.

The underlying affordance for archaeological investigation in England influences the production of grey literature so that areas where there is opportunity for greater survival and modern encounters through development of archaeological remains are also areas of increased grey literature reporting. The general character of grey literature can be related to its geographic location through an understanding of the spatial variations in investigation types or report producing archaeological organisations; a grey literature report from Gloucestershire for example will be more likely to be a geophysical survey report or to be produced by CA.

## 4.8 Conclusion

In this section, I have attempted to better understand grey literature in England at the national level. I have observed the available data and the nature of the main datasets that deal with grey literature in England; the GLL, the AIP and the EI. Problems with the relationships between the various datasets were identified and discussed especially with regards to any potential impact on further investigations using these datasets. The national distribution of grey literature was then mapped and analysed, showing evidence for various biases and obscurations which were identified and explored in terms of the underlying affordance for archaeology in England. The producers of grey literature, their natures and the patterns of their report production at the national level were explored, focusing especially on themes of geographic range, density and volume, and regionalism. Finally, an initial view of the national character of grey literature reporting was discussed.

Through this exploration and analysis of grey literature at the national level, I attempted to characterise and understand the patterns and underlying forces impacting grey literature report production. This detailed the connection between planning law and grey literature report production through the visible impact of PPG 16 on the (increasing) amount of archaeological investigations undertaken in England from 1990 onwards. This also confirmed that the majority of grey literature reports are produced by commercial archaeological organizations engaging in developer-led archaeology. By assessing the results of spatially mapping these three datasets, clear underlying patterns in the character of both archaeological investigation techniques and the organisations which produce grey literature reporting were exposed. This has revealed and made explicit the regional bias underlying the data which is the foundation of the English archaeological record. Although engaging with grey literature production at the national level has clearly produced valuable and interesting results about the spatial and temporal patterns of distribution of grey literature and about those who create grey literature and their operational milieu, it was not possible to deeply examine the grey literature itself in any depth at this scale. In order to further investigate the nature of grey literature and explore questions of value, quality or apparent fit-for-purpose it is necessary to make a more detailed examination of grey literature using a series of case studies to investigate results at a more intimate scale. The first of these case studies will be the Lea Valley.

# 5 The Lea Valley: Diversity in Practice

## 5.1 Introduction

In this chapter I introduce the Lea Valley and the reasons why it makes a particularly rich area for archaeological study and a strong producer of archaeological grey literature reports. I then briefly characterize archaeological investigation and grey literature reporting as represented within the Lea Valley case study area since 1990. I make a more detailed cross-county examination of archaeological fieldwork and reporting using three 10 km square sample areas as a comparative basis. I investigate in detail the grey literature produced by different organizations operating across several county divisions. I then discuss the results of an analysis of the efficacy of four different reports addressing the same broad site type, an Iron Age settlement site.

## 5.2 The Lea Valley case study area

The Lea Valley makes an interesting archaeological case study for almost any kind of research. Its geology makes it archaeologically rich, not only through deposits known to be favourable for archaeological preservation from earliest prehistory but also as fertile, well-drained ground for agriculture, pastoralism and development with the power of the lower Lea to support water-based industry, which has made the area attractive for a variety of human activity over the centuries. Its location to the east and north of London has strongly impacted its history and also makes it easily accessible for research and favourable for modern development, resulting in the Lea Valley being a fairly well-explored archaeological landscape. Interestingly, there are very few synthesis works treating the river valley as a whole; perhaps the county divisions running along its length have deterred the area from being studied as a cohesive unit in the past? The amount,

history and variety of archaeological investigation taking place throughout the Lea Valley make it a useful case study to explore in more detail the character of grey literature.

### *Lea Valley character and form*

The case study area I have chosen captures the majority of the river valley catchment system which covers 925 square kilometres and a topographically varied route from the River Lea's hilly source, along its fertile floodplains and onwards into its highly canalized route carved through London's past industrial heartland (Figure 21).

The current form of the River Lea itself, beginning outside Luton in the Chiltern Hills, running down through south-east Hertfordshire and western Essex, into East London and the Bow backs and then emptying into the River Thames, is in many ways substantially different from the shape of the River Lea in the middle Bronze Age when field systems first began to make an appearance. Whereas now the lower reaches of the Lea are canalized and controlled with the force of the channelled river carefully managed through the Lee Navigation, in the past the lower Lea would have been a broad and marshy landscape, prone to flooding and overflow and subject to tides, with the many branches of the Lea meandering towards the Thames (Barton 1992, p.83; Corcoran *et al.* 2011). Although the specific form of the River Lea has changed over time, much of it through human intervention, the river valley itself has remained broadly the same, with the River Lea continuing to carve its path from the relative heights of the Chilterns into the London Basin and out towards the sea. The landscape of the north and east of the study area consists mainly of upland areas, generally open and rolling enclosed farmland but with patches of forested ground made of the remnants of ancient woodlands. The west and south of the study area is made up of flatter, wetter lowlands, with the dense urban area of London dominating the lower landscape.

The underlying geology of the River Lea system can be roughly divided into the north and south; the upper Lea erodes into Till and Glacial Sands and Gravels, while the lower Lea is channelled through London Clay and River Terrace deposits (Figure 22). Alluvium is also found the entire length of the River Lea but in larger concentrations along the lower Lea (Corcoran *et al.* 2011).

Like many river systems, the Lea is a mutable force. It acts as a natural boundary between east and west, echoed in the form of older parish boundaries and now used as the modern county boundary between Hertfordshire and Essex; but it also acts as a natural route, shepherding people and goods from north to south, a gateway from the Chilterns to the Thames. The Lea provides fresh water for consumption and for irrigation but also serves as an industrial power source and by-product dumping ground. This contradictory but inherently flexible character of the Lea has been reflected in the human adaptations within the valley from prehistory onwards (Edgeworth 2011).

Although both the nature and history of the Lea Valley are of interest in themselves, the significance they hold for my own research into grey literature is in the manner in which they have contributed to the creation of archaeological interest in the region through forming an attractive landscape for many kinds of human activity both in the past and the present and therefore providing a particularly strong case study area to examine grey literature reporting.

### *Why the Lea Valley?*

The Lea Valley is a particularly interesting case study for several reasons. It is an area that has been densely archaeologically studied over the last twenty years, driven by the impact of PPG 16 on planning and development within its archaeologically rich landscape. These archaeological investigations have taken place in a wide variety of locations ranging from dense urban stratigraphy to open rural settings and under the auspices of different county

authorities allowing contrasts in working practices between regions and in different environments to be explored. A wide assortment of archaeological organizations have undertaken these investigations, ranging from large groups with many contributing members to independently operating individuals, and including both commercial enterprises and non-commercial not-for-profit volunteer groups, providing a highly diverse group of archaeology practitioners for analysis. These factors all combine to create an excellent opportunity to examine diversity in archaeological fieldwork and grey literature reporting practice, from the different site conditions and political frameworks influencing the nature of the archaeological investigation to the diverse character of those undertaking the work.

### *Archaeological framework of the Lea Valley*

The political, legal and social framework through which archaeological fieldwork is generally conducted within the Lea Valley tends to be organized at the county level. Both Hertfordshire and Essex have County Archaeologists (or an equivalent position) who oversee and regulate archaeological investigation within their region. London presents a more complicated picture as each borough council acts as the relevant local authority; however, English Heritage established the Greater London Archaeology Advisory Service (GLAAS) as a cross-borough organization to oversee and advise each local authority within Greater London (with the exception of Southwark and the City of London) on archaeological matters, meaning that GLAAS representatives operate as an equivalent position to a County Archaeologist.

The maintenance and updating of the Historic Environment Records (HERs) for each area also falls at a county level, with each county having one or more responsible Historic Environment Officers; again, London maintains the Greater London HER as a combined London-wide record.

Although designated archaeology and heritage in England is protected at the national level through the Ancient Monuments Act (1979), this Act is filtered through different regional frameworks and local planning authority legislation and guidance which also cover undesignated and unidentified heritage assets; a movement to establish regional research frameworks within different areas of the country has been in progress for several decades (Pye Tait Consulting 2014). These regional research frameworks are intended to inform the aims and objectives of archaeological investigations. The Lea Valley case study area is primarily covered by East of England regional research framework, originally published as two separate volumes with the first being a resource assessment to understand the then current state of knowledge and understanding of the archaeological resource in Hertfordshire, Essex, Cambridgeshire, Norfolk and Suffolk (Glazebrook 1997) followed by volume two which specified the research agenda and strategy for the East of England (Brown and Glazebrook 2000). These two volumes were the relevant documents for the majority of the Lea Valley case study time frame (1990-2012) but a new volume updating both the resource assessment and the agenda and strategy for the region, which now also includes Bedfordshire was published in 2011 (Medlycott 2011). For the London region, *The archaeology of Greater London* was published in 2000 (Museum of London 2000) while *A research framework for London Archaeology* was published in 2002 (Nixon *et al.* 2002). The major useful synthesis work for the area is detailed geoarchaeological deposit model produced by the Museum of London (Corcoran *et al.* 2011).

## 5.3 Characterising fieldwork investigations and grey literature reporting in the Lea Valley

In order to begin to explore grey literature in the Lea Valley, it is necessary to first evaluate the current knowledge of archaeology, archaeological investigations and grey

literature reporting as provided by the most relevant available data. To gain an understanding of current 'known' archaeology within the Lea Valley, data from the Hertfordshire, Essex and Greater London HERs was combined with information from Archives Monuments Information England (AMIE) database and the PAS records for the area and spatially plotted (Historic England 2005, PAS 2016, Figure 23). Upon even such a brief, high-level review of archaeology in the Lea Valley, it is quickly apparent that archaeology is ubiquitous across the region with a spatial distribution mainly focused on urban areas and the valley of the River Lee itself.

### *Spatial distribution*

Following the methodology outlined in Chapter Three, I spatially mapped the distribution of the GLL, AIP and EI datasets. Clearly archaeological evidence in one form or another can be found in almost all parts of the valley and unsurprisingly, both archaeological investigations and associated grey literature are also widespread across the area (Figure 24). Similar to when these three datasets were viewed together at the National level as shown in the preceding chapter, there is an expected variation in their spatial patterning; however, together these datasets are an informative window into recent archaeological practice and grey literature report production in the Lea Valley. This variation in spatial patterning is clearly related to the underlying differences in the composition of each dataset (Figure 25) and when these three datasets are displayed using the spatial binning technique, the contrast between the lower densities of the GLL in comparison to the AIP and EI datasets is clear (Figure 26). However, I then also used the KDE tool in ArcGIS to process each dataset within the Lea Valley in order to generate 'heat' maps with areas of denser activity shown in red and gradating down through to areas of no activity shown in yellow (Figure 27). Collectively, this series of mapping illustrates that although the specific point distribution is quite varied across each dataset as shown in Figures 24 and

25, the overall spatial patterning of each dataset is actually broadly comparable as shown in Figures 26 and 27. Areas of significant archaeological investigation and reporting are similar across all three datasets, as are areas with a paucity of archaeological investigation and reporting. From north to south, each map illustrates similar concentrations of investigation and reporting near Bishop's Stortford, Hertford, Ware and Harlow, along the west bank of the Lea and with the greatest density for all three datasets appearing in London to the south.

Archaeological investigations and reporting driven by development pressures in the Lea Valley area can be observed using Figure 27. The series of archaeological works undertaken in advance of the construction of the A10 Wadesmill bypass in the north west of the study area is visible across all three datasets, indicated by areas of intense archaeological investigation and reporting at staggered intervals creating the appearance of a dotted line running south west to north east, from Wade towards Braughing. The site of the Olympic Park in the bottom south west corner of the study area, subject to an intense level of development and regeneration works in the years preceding the London 2012 Summer Olympics, is visibly the highest concentration of excavation and reporting across all three datasets.

Some variation in the density of archaeological investigation and reporting may be explained by variations in the Lea Valley environment. The current presence and historically long-term continuous survival of Epping Forest, for example, almost certainly provides an explanation for why that particular location within the larger Lea Valley study area shows a relative paucity of data regarding archaeological investigations and associated reporting compared to neighbouring areas.

Overall, it is clear that an understanding of the various influencing factors and inherent biases of these datasets is necessary in order to discuss the distribution of archaeological

investigation and reporting within the Lea Valley. Even once these factors and biases are accounted for, the spatial patterning of the data illustrates that archaeological investigation and associated reporting are not evenly spread. Some areas within the Lea Valley have no or relatively little investigation while others have a large amount.

### *Temporal distribution*

The temporal distribution of these three datasets also clearly illustrates the inherent differences between these datasets in terms of volume of records, but interestingly illustrates that the GLL, AIP and EI datasets do all follow roughly the same pattern of peaks and troughs in fieldwork and reporting over the two decades (Figure 28). All three datasets clearly share very similar early period sources but after around 2000 they start to diverge. In addition, the increasing uptake of the OASIS system for reporting archaeological investigation and grey literature production is clearly shown in the steep climb of grey literature reports included in the GLL from 2003 onwards. The impact of the 2008 economic crash is also illustrated by the downward slope of all three datasets towards the end of the period, although that may also reflect the time lag between events and data entry.

## 5.4 Cross county comparison

To attempt to explain these differences and in order to gain a more detailed understanding of the types of archaeological investigation and reporting taking place in the Lea Valley, I made an in-depth study of three 10 km square areas, one randomly chosen in each county (Figure 29). Following the methodology described in Chapter Three, I made a more in-depth analysis of the archaeological investigations and grey literature within each 10 km square area. I found that each 10 km square area had a distinctive character and produced different types of results.

The Hertfordshire 10 km square reveals a largely rural farming landscape of enclosed fields, although sandwiched between larger conurbations with Stevenage located to the west outside of the 10 km square and Hertford and Ware to the south (Figure 30). Like much of the Lea Valley, this is an archaeologically rich area with sites ranging from cropmarks visible on aerial photographs to known Roman roads fanning out across the area from the ancient crossing at the River Rib (a tributary of the River Lea).

The Essex 10 km square covers a more mixed urban and rural landscape, with the urban settlement of Harlow in the north and the market town of Epping in the south bounding a mixed rural landscape in the middle which includes both farmland and woodland remnants of the larger historic Epping Forest (Figure 31). The 10 km square was also bounded by the M11 to the east and the M25 to the south. This area appears to be less rich in known archaeological sites than the other areas of the Lea Valley, perhaps due to increased obscuration, although the range of site types, from visible cropmarks to identified lengths of Roman Road, is broadly similar to those found in the Hertfordshire sample area.

The London 10 km square, in contrast, is a densely populated urban landscape with a correspondingly dense spread of known archaeology, including the results of the extensive work undertaken within the Olympic Park (Figure 32). Identified Roman Roads are again highly visible, as well as a vast array of archaeological findspots and building and settlement remains. Here the potential impact of increased obscuration from urban sprawl appears to have been countered by a much higher occurrence of development bias than is apparent in the sample areas outside Greater London, as the London region consistently renews and regenerates itself through development, resulting in a widespread pattern of known archaeology.

When the known archaeological interventions are mapped against the known archaeological reporting, a similar pattern to what was visible across the Lea Valley as a

whole becomes apparent in each 10 km square (Figures 33, 34 and 35). There are clear disparities between the data held within the AIP, GLL and EI datasets in each region. By undertaking a deeper analysis of the nature of the responsible bodies for the archaeological investigations and grey literature reporting in each 10 km square area, I was able to further investigate these disparities and compare the resulting data.

### *Hertfordshire*

Starting with an examination of the Hertfordshire sample area, 40 grey literature reports in total have been produced since 1990 under the auspices of six different organizations based on data from the AIP and the GLL (Figure 36). However, an analysis of the EI entries for the same sample area in Hertfordshire indicates only nine archaeological investigations are recorded as having taken place since 1990, much less than the 40 investigations suggested by the amount of recorded archaeological reporting generated within the same timeframe (Table 5). The nine recorded archaeological investigations are attributed to four different organizations, all of which are already identified as operating within the sample area according to the AIP and GLL datasets. This emphasizes once again the disparities between the three datasets.

When the six unique organizations are compared it is apparent that one group, the Heritage Network, is responsible for almost half of all the reporting from the sample area with 17 grey literature reports. This is followed by Archaeological Solutions Ltd who, with 11 grey literature reports, account for a little over a quarter of the total reports from the sample area. This shows that the vast majority of archaeological reporting within the sample area, almost 70%, has been produced by Hertfordshire-based independent archaeological contractors who undertake commercial archaeological services and fieldwork (Heritage Network 2014, Archaeological Solutions 2014). In fact, with one exception, all of the organizations responsible for grey literature report production within

the Hertfordshire sample area are commercial contracting fieldwork archaeology groups based in either Hertfordshire or a county in close proximity such as Buckinghamshire or Essex and are either independent contracting companies or a self-financing subset of local government (i.e. based within a County Council). The sole exception is Braughing Archaeology Group which is a volunteer-run community archaeology society associated with the Braughing Local History Society (Braughing Archaeology Group 2014). The group is composed entirely of unpaid volunteers who undertake archaeological investigations with a community focus and do not engage in commercial archaeological work.

The Hertfordshire sample area gives an overall picture of very locally driven archaeological activity. The active volunteer community is locally based and the commercial archaeology sector appears to draw mainly from a variety of contracting archaeology units indigenous to the county, with no one organization having a pronounced monopoly over the area although some groups are notably more active than others.

### *Essex*

An investigation into the 10 km square sample area within Essex shows similar disparities between the datasets but reveals a different character of archaeological activity within the area. AIP and GLL data for this area indicates there are 33 archaeological grey literature reports in total contributed by 13 different organizations (Figure 37), while the EI counts only 13 archaeological investigations conducted under the auspices of five different organizations (all of which are already identified as operating within the sample area according to the data for grey literature reporting) (Table 6). Taken altogether and omitting duplicates, the records indicate that 38 unique archaeological investigations have taken place in the sample area since 1990 and involved the work of 13 different organizations.

However, more than 50% of the grey literature reporting (17 reports) in the Essex sample area has been produced by the Essex County Council Field Archaeology Unit[11] who dominate both the grey literature reporting and the recorded archaeological investigations in the area. The next largest contributor to grey literature reporting, Archaeological Solutions Ltd, produced only 3 reports (6%) with the 11 remaining organizations contributing only one or two reports each. This provides a very different cross-section of archaeological reporting practices than that illustrated by the Hertfordshire sample area. Here, although the region appears to have a more diverse range of archaeological practitioners in total active in the sample area, the majority of archaeological investigations and grey literature reporting in the region were actually produced under the auspices of one organization, the commercial archaeological field unit embedded within the relevant local authority, Essex County Council.

The Essex sample area, similar to Hertfordshire, indicates a strong element of localism in conducting archaeological investigations but past investigations and reporting are here dominated by one organization in particular. This could be the result of being more deeply embedded within the planning and development process as a result of the relationship between the Essex County Council Field Archaeology Unit and Essex County Council itself. There is no comparable local authority field unit operating within Hertfordshire County Council; the Hertfordshire Historic Environment Unit gives planning advice on historic environment matters and manages the HER rather than operating an archaeology field work arm itself. Beyond the main report producing organization, Essex shows a more diverse range of other contributors to archaeological investigation and reporting.

[11] Essex County Council Field Archaeology Unit is now operating as ASE Essex, having transferred to UCL in 2013. This organizational change occurred after the cut-off point for data collection therefore does not impact the current study.

### *London*

The London sample area reveals a very different character through the sheer volume of archaeological investigation and reporting alone. The AIP and GLL datasets indicate that 382 grey literature reports have been created by 21 different producing organizations within the Greater London 10 km square sample area since 1990 (Figure 38). The EI records 123 investigations have been undertaken within the sample area under the auspices of 14 organizations (Table 7), one of which (Gifford and Partners) was not identified as operating in the region via records of grey literature reporting, making a total of 22 active organizations within the London sample area.

Despite such a large number of contributing organizations, almost 70% of the grey literature reporting produced within the London sample area is split between three commercial archaeology contracting companies, all of which are (or were) based in London; Pre-Construct Archaeology Ltd, Museum of London Archaeology and Newham Museum Service, although Newham Museum Service has not existed since its sudden closure in 1998 (Archaeology Data Service 2014b). Again, the majority of grey literature reporting is produced by commercial contracting companies of varying sizes although some reporting has been produced by community archaeology groups, such as the West Essex Archaeological Group, and also by larger firms where archaeology is not the primary activity of the commercial body, such as the multi-disciplinary engineering, planning and architecture firm Gifford and Partners[12].

The common theme linking the producers of grey literature within the Greater London 10 km square sample area is again that of localism. The majority of grey literature produced within the sample area was created by organizations, whether a volunteer group or a commercially focused business, based in London. In fact, it is interesting to note how often archaeological groups title themselves using location-specific names such as

[12] Gifford and Partners is now part of the Ramboll Group as of 2011.

Museum of London Archaeology, West Essex Archaeological Group, Essex County Council Archaeology Field Unit or Thames Valley Archaeological Services. The preferred marker of archaeological organizations operating within the Lea Valley appears to be a regional identifier.

### *Cross-county overview*

An initial review of the producers of grey literature between these three 10 km square sample areas within the Lea Valley brought out some interesting common patterns but also some unique characteristics. Grey literature in all three areas is unsurprisingly strongly representative of commercial archaeological companies, who produce by far the largest amount of grey literature reporting in each area. This is not to say that other forms of producing organizations are not represented; all three areas show evidence of active community archaeology groups also producing grey literature reports, although a much smaller amount. In all three samples areas, the majority of grey literature reporting is produced by groups based locally to the region of investigation. A major difference between the sample areas, however, is the total amount of archaeological investigation and reporting which varies widely across the three sample areas, with rural Hertfordshire coming far behind urban Greater London and with the semi-rural Essex area placed between the two. This certainly indicates the power of urban growth to generate archaeological fieldwork. Another difference between the sample areas is shown by the break-down of contributing organizations. In Hertfordshire and London, the majority of the production of grey literature reporting is divided between several groups, while Essex shows a clear trend towards a monopoly by one organization.

Examining the profile of those producing archaeological investigations and grey literature reporting using the 10 km square sample areas has illustrated the diversity of archaeological practice (and practitioners) within the Lea Valley. It has raised questions

about the effects of localism, different densities of reporting and different distributions of fieldwork but in order to properly compare grey literature in this overall case study area, it is necessary to investigate the grey literature itself.

## 5.5 Report Producers and Grey Literature Character

Considering all the grey literature report producers identified in the sample areas, it is interesting to note which groups are present across all three areas (Figure 39, Table 8). Interestingly, only a small handful of report producers show up in all three counties; Archaeological Solutions Ltd (AS), Essex County Council Field Archaeology Unit (ECC FAU) and Pre-Construct Archaeology Ltd (PCA). All three are practicing commercial field units with one based in each county. AS is based in Hertfordshire, ECC FAU is based out of Essex County Council and PCA is based in south-east London. All three are medium-to-large scale field archaeology units, with many employees and the capability of working on several projects at once and in many locations, as indicated by the records of their archaeological grey literature reporting. Grey Literature reports from these producers form the basis of my first cross-county comparison group.

In contrast, when those who report in two out of the three sample area regions are investigated, a more varied collection of organizations is uncovered. CgMS, Heritage Network, Thames Valley Archaeological Services, Wessex Archaeology and the West Essex Archaeological Group all produced reports in two out of the three regions. They are, in order, the archaeological branch of a multi-disciplinary planning consultancy, a small independent archaeology practice based in Hertfordshire, a larger Reading based commercial field unit, a large national archaeology practice and a non-commercial amateur archaeology society founded in 1958. Grey literature reports from this group form the basis of my second cross-county comparison group.

In order to explore the relationship between grey literature and those who produce it, I questioned whether or not it was possible to identify a consistent mode of grey literature report production for unique producing organizations. Using the methodology described in Chapter Three, I examined grey literature reports for a series of markers starting with the three organizations that were earlier shown to work widely across the Lea Valley.

### *Comparison Group One: Archaeological Solutions, Essex County Council Field Archaeology Unit and Pre-Construct Archaeology*

A number of common elements between reports produced by AS, ECC FAU and PCA were initially identified, many of which were structural in nature and could be considered both fundamental to and perhaps obvious functions of being a report. Almost all reports had an identifiable cover page of some type, rather than immediately launching straight into the text[13], and many included two, consisting of an 'outside' and 'inside' cover page which contained different information with the inner page usually being more detailed. Without exception, reports with a cover page named the site, its location and the type of archaeological investigation although the rest of the information conveyed via the cover and its style of presentation varied widely. These three common elements appeared to be understood as the essential information about the report which required communication, while other information that might well be considered pertinent to have on the cover, such as the name of the producing organization itself, the author of the report or a bibliometric report reference number for example, were infrequently and variably included.

All reports contained some manner of quality assurance (QA) usually located near the front of the report and which, at minimum, named the author and the QA reviewer of the report but also often contained additional information such as the internal report number, the associated site code, the OASIS or HER reference and the release date of the report.

[13] Although it should be noted that many reports were only viewed digitally rather than via a physical printed copy; as such, the cover plate may not have been digitized when the report was originally uploaded.

Indeed, the release date of the report as well as the date of the associated archaeological investigation were both always included, usually somewhere within the introductory text, by all three organizations allowing the lag between field work and reporting to be plotted (Figure 40). Most grey literature reports were released the same or following month as the archaeological investigation was conducted but all three organizations had some significant lags of several years elapsing between the archaeological investigation and its reporting. There was no observable consistency, however, to the size of investigation or nature of the archaeological results (significant or otherwise) in the grey literature with a long term delay in releasing of the report.

Every report included a Table of Contents and an introductory abstract or summary which was generally always presented in italics in reports with a more recent date (presumably through the use of more advanced word processing software than that available in the earlier 1990's). Although internal sections and divisions of each report varied, they always included a conclusion and discussion section (either separate or combined) and the *raison d'être* of each report - archaeology and the archaeology (or nil result) of the investigated site in particular - was visibly discussed in each report, even if only briefly. Every report included an acknowledgement section, although who and what was acknowledged differed between organizations. Where the site supervisor or excavators were identified and thanked, they universally included the report author. This could indicate that a direct participant in the archaeological fieldwork would be more likely to recall and thank other participants when writing the subsequent documentation although of course if the excavating team was not identified in the report, it was impossible to know if they included the author. Each report contained at minimum one figure, which was invariably the site location map, and a note or appendix on the archive index or deposition, although many reports additionally included photographic plates, additional figures and additional

appendices. Reports were all typed, mainly created using a word processer (although some earlier documents may have been on a typewriter) and printed or digitally uploaded as an A4 document. Stylistically, each report employed neutral language with the 'fixed descriptive code' critiqued by Hodder over twenty years ago still very much the standard; there were no observed instances of the first-person point of view anywhere within these reports (Hodder 1989, p.268).

These elements in common may be unsurprising, considering that these three organizations are broadly similar independent commercial contracting archaeological field units. They clearly operate within the same milieu and profess adherence to many of the same standards. This is indicated either directly through in-text reference to external standards and guidance followed, such as the various published CIfA standards and guidance on archaeological investigation and reporting, or indirectly through display of affiliated membership status with organizations that necessitate following prescribed regulations which may include the content and style of reporting, such as the requirements of being an CIfA Registered Archaeological Organization (RAO) or ISO 9001 certified.

However, these similarities in form and layout can conceal deeper differences. More than any other organization, AS regularly identified both the individual academic and professional qualifications of their authors as well as the professional affiliations and memberships held by AS itself. Despite the fact that all three organizations are CIfA RAO's, only AS regularly displays either the CIfA RAO logo or an explicit statement of their membership status within their grey literature reports.

Aside from individual authorship, the most obviously changeable factor between reports produced by AS, ECC FAU and PCA in the Lea Valley is their length. The complete length of each report varied widely, from a brief single page to 128 page behemoths. PCA tended to have more lengthy reports than the other two organizations. In general, however,

the normal report length between all three organizations actually had a fairly narrow range with most reports falling between 15 to 30 pages in length, regardless of whether or not significant archaeological remains (or indeed any) were recovered by the archaeological investigation (Figure 41). Reports in this range tended to have approximately the same textual length for the main body of the report with additional variation in length coming from the inclusion of more or less appendices, figures and photographic plates, again not necessarily related to the amount (if any) or significance of associated archaeology. Discussion and concluding sections, even when archaeological remains were present, usually only varied approximately between one to four paragraphs or to several pages at their most lengthy. Although a report of 50 pages or over most likely indicates that archaeological remains of some interest were recovered, it can be harder to use length as a marker of archaeological content for the more average report size.

Other distinctly variable elements include the amount of contextual and background information presented, the inclusion of the relevant legislative and policy context, the treatment of specialist reporting and even the advertisement of the qualifications or membership of professional associations of both individuals and organizations involved in the report production.

The variation in terms of how much focus is given to the relevant legislative and policy context of the archaeological investigation also differentiates each organization. ECC FAU for example, does not include a separate legislation and policy section and does not explicitly reference heritage policy or legislative items such as the overarching Ancient Monuments and Archaeological Areas Act (1979), the Valletta Convention or the more commonly discussed PPG 16 or PPS 5. However, ECC FAU regularly references the local Archaeological Research Framework such as *A Research Framework for London Archaeology* (Nixon *et al.* 2002) and uses the framework to clearly situate their stated

objectives and aims in conducting the archaeological investigation that is the subject of the grey literature report. Conversely, both AS and PCA habitually note the legislative and policy context of the archaeological work they are conducting but do not refer to the local framework or identify how their work may relate to the regional research aims and objectives described within the framework.

Specialist reporting is another element that sees wide variation in treatment between these three organizations. The archaeological evidence will not always merit specialist reporting, so it would be impossible to meaningfully compare the presence or absence of specialist work across all reports within the study area. When specialist work was explicitly included, however, it was approached in many different ways. AS and PCA for example, regularly placed specialist reporting in a separate appendix to the main report with no additional summary or sub-section within the main report, although finds were described and noted; it would be difficult to tell if the observations made in the specialist report were included anywhere within the main report without detailed reading of the text. ECC FAU on the other hand, regularly included specialist reporting within the main body of the text with additional detailed tables of count and weights given as a separate appendix. All three organizations regularly identified the contributing specialist by name.

A review of the grey literature reports created by three organizations chosen as they represented archaeological investigation across all areas of the Lea Valley indicates that although superficially these documents may appear very similar (as the producing organizations themselves may appear very similar) they are actually widely variable and many of these variations are consistent for each producing organization, such as ECC FAU always putting their name and logo on the cover page or incorporating their specialist reporting within the main body of text, allowing some characterisation of grey literature by producer.

### *Comparison Group Two: CgMS, the Heritage Network and West Essex Archaeological Group*

Building on the characteristic markers discussed above, I examined a more varied collection of report producing organizations selecting CgMS, the Heritage Network (HN) and West Essex Archaeological Group (WEAG) in order to explore variations in reporting between a multi-disciplinary planning consultancy, a small independent archaeological practice and a long-standing amateur archaeology society.

These reports appeared much less standardized across the group as a whole, although each individual organization tended towards a recognizable in-house style. Common to each cover plate was the name and location of the site and the investigation type, as was found above, but also the name of the reporting organization. The logo for each group also appeared on their covers, indicating they shared a strong sense of branding. Although each organization regularly noted the names of report authors, illustrators and project managers, included report reference index numbers and site codes, dates of field work and dates of report issuing, and other important elements of generally agreed quality assurance (QA) standards, WEAG reports were unique in not including a QA sign-off section. Obviously, this emphasizes the absence of a commissioning client that would require evidence of internal report review prior to issue. In this comparison group, many of the fieldwork investigation dates and report issue dates were not included which prevented the turnaround time from site to grey literature to be plotted. From the grey literature reports which did include some dates, both CgMs and the Heritage Network had similar fairly rapid turnaround times compared to the WEAG. However, the WEAG reports often gathered together many seasons of excavation into one analysis and so each report represented a much longer fieldwork time frame.

All reports contained a table of contents, a summary or abstract and a discussion and conclusion section the same as the reports of AS, ECC FAU and PCA were shown to

above. In addition, each report contained the site location figure and often additional photographic plates and appendices. CgMs reports, however, were unique in not containing an acknowledgement section of any kind and neither CgMs nor the Heritage Network discussed the archive deposition or included an archive index of the fieldwork. Generally reports were typed and A4 sized, and written in a neutral fashion.

The length of each grey literature report was highly variable, with the shortest report at six pages and the longest at 378 pages including all appendices. WEAG reports tended to be longer on average than reports created by CgMs and HN, and included much lengthier sections on archaeological and historical context of the site and discussion of results and conclusions which was a positive enhancement. CgMs on the other hand, often included detailed sections on the relevant heritage and planning legislation and policy and how they related specifically to the site of investigation, perhaps reflecting the broader interests of their multi-disciplinary parent company.

This grouping of reports had greater contrast and highlighted elements that may be more common to commercial archaeological report producers versus reports created by local community groups or by companies where archaeological investigation and reporting is not the primary overall focus.

### *Consistent Modes of Report Production*

Taken together, the observed factors begin to identify consistent modes of report production unique to each report producing organization. Each different grey literature producer appears to have their own favoured modes of production influenced by their own organizational character and purpose. Some of these common modes have (unsurprisingly) evolved over twenty years, often due to technological computing advances, but in many ways these characteristics have remained stable and consistent for the grey literature report genre. On this basis it is clear that organizations that produce

grey literature tend to have quite specific modes of report production. This analysis has provided important empirical detail which supports the work of others who also explore this theme through their research (e.g. Cooper 2013).

A report which includes some form of Quality Assurance and evidence of review prior to production, with clearly defined sections detailing the appropriate historical, legislative and contextual background, with a clearly defined methodology, which includes specialist reporting ideally incorporated into the main text and especially into the overall conclusions, with clear figures and photos showing the site location, the extent of the area of archaeological investigation and sections, plans and photographs of the archaeology can be viewed as containing positive elements towards creating a successful grey literature report.

Of course, in many ways, these markers are simply an indicator of how successful each producing organization has been in the field of generic report writing, regardless of any archaeological content. The relative merits of different manners of reporting may be connected to the relative merits of the archaeological discussion but in order to examine these connections more closely, a different approach is required.

## 5.6 Iron Age settlement sites in grey literature

In order to comparatively examine the detailed content of a selection of grey literature reports, I wanted to control for some of the expected variation through choosing to examine grey literature reports created by different organizations dealing with a similar site type. I chose to pursue the Iron Age farming settlement site as a fairly ubiquitous and common-place archaeological site type across this region of England that would most likely have been encountered more than once within the Lea Valley study area.

A search of the available grey literature records provided four Iron Age settlements that had been subject to evaluation since 1990; a site in Leyton, a site in Redbridge, a site in

Ware and a site in rural Hertfordshire (Figure 42). All four investigations were classed as either an evaluation conducted through trial trenching or an open area excavation. These four reports were reviewed both in terms of the characteristics described above and also for the nature of their description and analysis of a common site type. Two sites were investigated by the same organization, allowing a comparison between both different organizations and the same organization encountering similar archaeology at a slightly later date.

The two reports both generated by Newham Museum Service are *An Evaluation at George Mitchell School Playing Fields, Leyton, London* produced in 1995 and *A Rescue Excavation in Advance of Gravel Working at Fairlop Quarry, Hainault Road, Redbridge* created in 1997. Hertfordshire Archaeological Trust produced *An archaeological evaluation at the Football Club, Park Road, Ware* in 1996. The final report, *An archaeological evaluation at Plashes Farm, Standon, Hertfordshire,* was produced by Essex County Council Field Archaeology Unit in 2000. These reports are all from the earlier half of the overall time period under analysis (1990-2012).

Interestingly none of these report producing organizations exist any longer or at least not in the same form they had in the 1990's when these reports were produced. Newham Museum Service was fully closed in 1998, while Hertfordshire Archaeological Trust restructured significantly and became Archaeological Solutions in 2003 and Essex County Council Field Archaeology Unit was separated from Essex County Council, incorporated into University College London and now operates as ASE Essex as of 2013. This illustrates how the grey literature reports themselves become historical documents, charting the changing practice of archaeology in England and allowing the style and focus of particular organizations that no longer exist to be fossilized for later study.

### *Comparing Form*

An initial comparison of these reports looking at their overall appearance and how they are structured, similar to the comparison investigation to determine mode of report production described above, makes it apparent that these four reports are in many ways very different. This may be a reflection of the different modes of report production of the various producing organizations.

The two reports by Newham Museum Service can easily be identified as coming from the same source organization as they share many of the same reporting characteristics. The narrative structure of both reports is similarly arranged, as evidenced by the almost identical table of contents found in each report showing that they are broken down into identical sections. It is also notable how few in number these sections are, only six in total including the abstract, bibliography and acknowledgements. Although both of these reports fall within the 'normal' range of page length (between 15 to 30 pages), they are sub-divided into a very concise set of sections especially when compared to many grey literature reports of a similar number of pages, such as the Essex County Council Field Archaeology Unit report which has nine sections in the table of contents which are further sub-divided into numerous additional sections and which do not include the abstract summary, bibliography and acknowledgements. Especially distinctive to reports generated by Newham Museum Service is the practice of including the overall site matrix and group discussion in the appendix including every single context number from site presented in their position in the overall Harris matrix for the site. So far I have not come across this distinctive practice in grey literature reports produced by any other organization.

The report produced by the Essex County Council Field Archaeology Unit also appears to follow the same mode of report production as described above in regard to other ECC FAU reports within the Lea Valley study area. This report shares the characteristics of

strong organizational branding such as display of the company logo, the practice of incorporating the specialist reports within the main body of the text rather than in an appendix and, uniquely among these four reports being compared, a quality assurance (QA) section indicating the report has been reviewed and approved for production. Although there are distinctive differences between the Newham Museum Service and Essex County Council Field Archaeology Unit reports, they appear to have more in common with each other in terms of general structure than the report produced by the Hertfordshire Archaeological Trust. This report is noticeably shorter than the other three at only 23 pages compared to 42, 70 and 78 pages. Although the main body of text is divided into sections, there is no overall table of contents for the report and there is no abstract or introductory summary of the findings of the investigation. While the other three reports all summarized the findings of earlier investigations before then describing and discussing the results of the current investigation, the Hertfordshire Archaeological Trust report does not describe results of earlier work on the site although it does clearly indicate that there was a previous phase of work on site. Although none of these four reports have a separate dedicated section detailing the relevant legislation and government issued guidance, the Hertfordshire Archaeological Trust is alone in not making any reference in the text at all to legislation while the other three make explicit reference to requirements of planning permission necessitating archaeological investigation and the relevant associated brief of works. However, the Hertfordshire Archaeological Trust report is the only one out of the four to specify that they have followed particular standards (the IfA Code of Conduct, as it was known then) in conducting their archaeological fieldwork.

This initial review of the form of each of these four grey literature reports clearly shows that despite a similarity of investigation type and the nature of the resultant identified

archaeological remains, these reports each have a very distinctive character. It is especially useful to have two different reports from the same producing organization (the two reports by the Newham Museum Service) which have been shown to share a similar character; this implies that the differences between the form and structure of these reports may be strongly influenced by the individual report producing organization. This view is given further support by the similarities shown between the Essex County Council Field Archaeology Unit's reports from the detailed comparison group above and this report by the ECC FAU which deals with an Iron Age settlement site.

This may support the idea that it is not only changes to the political and legal framework surrounding archaeology that has an impact upon grey literature reporting but also the changing nature of the producing organizations themselves. As commercial entities grow, shrink, are absorbed into other organizations or split into separate bodies, their associated corporate culture would also evolve, absorbing new practices and abandoning old techniques and methods as necessary.

### *Comparing Methodology*

Although these four reports have already been shown to be distinctive from one another through a review of their structure and form, further comparison is necessary in order to relate the archaeological results.

All four reports specified the methodology used during the archaeological investigation. Both of the Newham Museum Service reports alluded to a separate 'archaeological project design' document that formed the basis of the current investigation which was agreed with the relevant local authority prior to commencing works, while the layout of the trenches at Plashes Farm, Standon were proposed by the ECC FAU in a specification document which was agreed with the Hertfordshire County Council Archaeology Office. The work undertaken by HAT at Ware Football Club was stated to be, "executed in accordance with

a specification", presumably originating from the local authority although no further information or detail regarding the specification or its approval is given. Although none of these specification or project design documents were included in the associated archaeological grey literature report as an appendix or otherwise and despite the lack of detail regarding the nature of the specification provided within the HAT document in particular, it is apparent that all four archaeological investigations were undertaken with prior planning and discussion with the relevant authorities which included an agreement of the proposed on-site methodology.

All four of these reports also clearly specified the location of excavated areas, whether in the form of trenches or in the form of an open area, within the larger site area and mapped on an attached plan of the site. Additionally, all four reports included some form of justification for the specific location of excavated areas, whether it was to focus on specific features of interest identified from earlier stages of investigative work or as the basis of a sampling strategy as evidenced below:

> "Trenches 11 and 16 were located so as to section the 'palaeochannels' or former water-courses identified during the geophysical survey." (HAT 1996, p.5)

> "The layout was designed to sample the whole development area (including blank areas) as well as features and areas of archaeological interest identified from the desktop study, aerial photographic survey and the field walking results." (ECC FAU 2000, p.4)

> "Further trenching was allowed for in order to test any features that the geophysical prospecting located." (NMS 1997, p.5)

> "…three evaluation trenches, 5 x 5 metres in size, were located within the building footprint (see Fig. 1b)." (NMS 1995, p.4)

However, further detail regarding the excavation techniques used on site once the excavated areas were opened up was quite variable across all four grey literature reports. Both Hertfordshire Archaeological Trust and ECC FAU described their approaches to archaeological investigation on-site in one or two sentences only:

> "The archaeological features were cut into the natural brickearth and gravel, and were examined by hand. Approximately 90% of the remains were fully excavated, and all the features were recorded using scaled-plans, section drawings, photographs and written descriptions." (HAT 1996, p.5)

> "The topsoil was removed under archaeological supervision using a 360 degree tracked mechanical excavator fitted with a flat bladed bucket. Archaeological features exposed in the trenches were then excavated by hand and fully recorded using standard ECC FAU record sheets." (ECC FAU 2000, p.4)

In contrast, both of the Newham Museum Service reports specified the particular techniques used for working in field in more detail than the other two reports although stated in simple and clear language:

> "The trenches were opened by mechanical excavator and then hand excavated down to the top of the natural gravel where archaeological features were excavated… All the excavated areas were recorded using the Single Context

> Planning Method based on a five meter grid. All deposits were recorded on pro-forma context sheets and planned at a scale of 1:20. All finds were washed, marked and listed." (NMS 1995, p.4)

> "Environmental samples would be taken from sections exposed during excavation, once sufficient sections had been cut and after a site visit by the project specialist had identified deposits deemed to have enough potential for survival and recovery of the desired information. A sample of each excavated context was to be dry sieved in order to test rates of finds recovery, and a record of the success of this exercise kept." (NMS 1997, p.5)

Both the work undertaken at Fairlop Quarry and at Plashes Farm, Standon included provision for a geophysical survey to be undertaken as part of the works, while the methodological section of the HAT authored Ware Football Club report refers to an earlier geophysical survey in their justification for evaluation trench placement. Only the archaeological investigation undertaken by Newham Museum Service at the George Mitchell School Playing Fields does not include any related geophysical survey work. In terms of the incorporation of survey results, the archaeological investigations at Fairlop Quarry and at Ware Football Club were both preceded by geophysical survey which then informed the placement of the areas of archaeological excavation (as a trench or as an open area), whereas the geophysical survey at Plashes Farm, Standon was only carried out after the evaluation trenches had been completed and backfilled although the results of the survey were incorporated into the resultant evaluation report.

It is apparent that all four grey literature reports both described their methodology very differently but also, based on their own descriptions of their adopted methodology, conducted their actual fieldwork very differently as well.

### *Comparing Presentation of Archaeological Evidence*

In order to further assess the comparative usefulness of each of these four grey literature reports in presenting the archaeological investigation of an Iron Age settlement site, it is necessary to investigate how the actual archaeological evidence relating to the Iron Age is presented. In general, all four reports contained a section where the archaeological results of the fieldwork investigations were presented (at varying levels of detail) and a separate section titled 'discussion' or 'conclusions' where the significance of the archaeological results was discussed.

Both reports produced by Newham Museum Service present the results of the archaeological work immediately after the introductory and methodology section as a phase discussion. This phase discussion collectively considers all work undertaken on site and places the resultant archaeology in one of several clearly identified phases of occupation on the site. Each phase is described with detailed reference to individual finds and features, placed within the larger context of associated features and situated within the broader site, for example through specifying which area or trench the archaeological remains being discussed were located.

> "Within Trench 1 were a series of stakeholes, post holes and pits (see Fig.2) which produced pottery and flint tools datable to the Early Iron Age. Trench 3, located further to the south-west of the site produced one large pit which was surrounded by a large number of stake holes (see Fig. 3). The pit contained several sherds of Early Iron Age pottery (see appendix II) along with flint and stone tools (see Fig.6) and associated waste material from tool manufacture. All these artefacts appear to

> date from the Early Iron Age. No datable material was recovered from the excavated stake holes although they appear to respect the position of the pit and so are probably contemporary with it. Due to the density of features in such a relatively small area of both trenches, it was not possible to discern any structural patterns in the post and stake holes. However, given the evidence recovered from the pits, it is reasonable to assume that this represents settlement activity in the Early Iron Age." (NMS 1995, p.5)

The presentation of the detailed archaeological evidence from the HAT excavated site at Ware Football Club, in contrast, is not grouped by overall site phase but instead by individual trench, with each feature uncovered in each trench described in sequence from earliest to latest and any associated finds reported and described. This was similar to the approach taken by ECC FAU at Plashes Farm where a separate section titled 'Fieldwork Results' presented the archaeological results of the fieldwork by each trench. For example:

> "Trench 34 contained a Linear north west/south east orientated ditch [2] (Fig. 21, Sect. E) that produced Late Iron Age pottery in its fill (3). Pit [4] produced 4th century material from its fill (5). A pit or ditch terminus [6] (that continued beyond the trench) produced pottery dating to the 4th century. Two small post-holes [28 and 30] were located towards the west-end of the trench; neither produced any dating evidence." (ECC FAU 2000, p.5)

The presentation of the archaeological results of the field work investigation by phasing of the entire site as a whole (e.g. chronologically) was more easily legible than when the results were presented by individual trench (e.g. organized according to the logistics of extraction). However, archaeological fieldwork investigation comprising a large number

of trenches with no clear evidence of inter-trench relationships between separate archaeological features creates an issue for the phased site method of presenting fieldwork results. The trial trench method of archaeological investigation is the reason for presenting fieldwork results in a trench-by-trench manner rather than a stylistic choice.

Regardless of the form taken by the presentation of archaeological evidence, all four grey literature reports included descriptions of archaeological finds related to an associated feature. For example, "The primary fill (1145) comprises clayey loam and contained finds associated with domestic activity, for example, 3rd-century pottery sherds (25), samian, and animal bone fragments (14)." (HAT 1996, p.7) As demonstrated by the above example, however, this is not a complete catalogue of every single find recovered from the site and is instead used to assist in identifying the nature and time period of past activity on the site. In order to further explore the presentation of finds and artefacts arising from the archaeological investigation, it is necessary to investigate the contribution of particular specialist topics.

### *Comparing Specialist Reporting*

The inclusion, nature and positioning of any associated specialist reporting also has an influence on the presentation and understanding of fieldwork results. All four of the grey literature reports examined included specialist reporting on the archaeological results of the fieldwork investigations. The number, length, style and positioning of each specialist topic varied between each report. All four grey literature reports included a specialist report on the pottery finds, but other specialist topics that were also the subject of a separately authored report included lithics, coins, conservators, animal bone and environmental sampling. Only the HAT report had one specialist topic (pottery) represented, while the other three grey literature reports had between three and six separate specialist topic sections, presumably dependant on the actual results of the individual

fieldwork investigations. Universally the author of the overall grey literature report was not the same as the author of the specialist topic section, who were all given separate authorial credit at the start of their separate specialist topic section. There was also no overlap between these four grey literature reports and the authors of the specialist topic sections.

It should perhaps be assumed that the presence or absence of particular types of specialist analysis should be dependent on the presence or absence of particular types of archaeological remains. For example, the presence of metalwork remains would require the input of a metalwork specialist or the presence of human remains would require an analysis by a forensic specialist. The HAT report regarding the fieldwork undertaken at Ware Football Ground, however, illustrates that is not always the case. Despite two burials being found on site, no specialist human bone analysis and reporting was undertaken. In addition, the geophysical survey was conducted before over 1m of overburden was stripped from the site which may then have contributed to the lack of geophysical survey results for reporting. This highlights that even though archaeological remains of significance may be recovered during archaeological fieldwork, there is no guarantee that the relevant qualified specialist will be given an opportunity to examine and comment on the finds or that the results of their specialist work will be incorporated into the final grey literature report.

Both of the Newham Museum Service reports included the specialist topic sections as separate appendices to the main body of text. Both ECC FAU and HAT on the other hand included the specialist reporting as separate sub-sections within the main body of text, and in both cases they were positioned after the presentation of the archaeological results of the fieldwork.

In appearance, whether presented in an appendix or as part of the main body of text, the specialist conclusions were visibly separate from the rest of the grey literature report, often having a different format and section title sequence, indicating the specialist section was inserted 'as is' rather than being fully integrated into the rest of the grey literature report. This reflects Chadwick's contention that specialists are often isolated from the rest of the field work and post excavation process by being left out of the planning process, given little or no contextual information about the material they will be analysing and not being informed of what other material is being assessed and by which other specialist (Chadwick 2003, p.99; also Jones 2002). Reviewing both the sections presenting the results of the archaeological fieldwork and the results of the specialist work on different classes of finds in all four grey literature reports, however, it is apparent that the overall report authors had incorporated at least some of the results of the specialist investigations. The distinctive style and positioning of the specialist reporting did not necessarily reflect a similar separation between the analysis and conclusions by the main report author and the specialist input.

### *Comparing Discussion and Conclusions*

The key component in understanding the different merits between different approaches to the same type of archaeological evidence must be found in the discussion of that particular evidence. In examining these four different grey literature reports, it is necessary to focus on the overall conclusions drawn from the archaeological fieldwork. How was it decided to be an Iron Age settlement site? How comparable are the archaeological results between these four different sites investigated at different points in time and by different groups of people under different conditions? Are they in any way relatable?

The NMS site at George Mitchell School Playing Fields was determined to be an Iron Age settlement site on the basis of the numerous post and stake hole features encountered

during the trial trenching fieldwork. Despite the lack of discernible settlement patterns, the site was specifically stated to be an early Iron Age settlement site rather than to be the location of animal stockading or other non-settlement activity on the basis of the collection of found artefacts on the site which included an assemblage of domestic pottery and flint artefacts.

The NMS site at Fairlop Quarry was the least ambiguous in its nature as an Iron Age settlement site. Enclosure ditches and post-holes in a settlement pattern were visible on aerial photographs prior to any archaeological fieldwork investigation of the site and both the geophysical work and the archaeological open area excavation confirmed the presence of these enclosure ditches and aligned post-holes. The assemblage generated by the archaeological fieldwork activity allowed the settlement to be phased and evidence indicating settlement activity dating from the early, middle and late Iron Age periods was recovered.

The conclusions of the HAT report on the Ware Football Ground were the most problematic of the set. The only evidence clearly relating to the Iron Age period was said to be residual early Iron Age sherds found in one particular feature. Otherwise the report states that, “the evidence almost exclusively dates from the Romano-British period” (HAT 1996, p.15) without detailing the nature of that evidence. In addition, the HAT analysis suffered from a lack of specialist input into the grey literature report as evidenced by the absence of key specialist reports from the text or the appendices despite recording the presence of archaeological material which would benefit from specialist attention such as human remains.

The ECC FAU report contained the most extensive discussion of the archaeological evidence before progressing to presenting the overall conclusions regarding the occupation of the site. Uniquely, the ECC FAU report contained a section which for the assessment of

the reliability of the different forms of archaeological investigation. The reliability of the trial trenching was determined to be good with the results from the evaluation trenches giving a good indication of the areas and types of archaeology present on the site. Their summary of the archaeological evidence describes a small rural settlement, chronologically long lived and typically of a low status. The Late Iron Age in particular is demonstrated by two field boundary ditches which remained in use throughout the life time of the settlement site. Although the results of the archaeological investigation at this site were the most extensively reported, the actual evidence relating to the Iron Age period in particular was actually quite sparse and this site was also classed as a Romano-British settlement site.

### *Significance*

Overall these four reports showed a considerable amount of diversity in their treatment of the archaeology. Beyond the differences in appearance and form that can be attributed to the different stylistic modes of each report producing organization, the content of these reports showed disparities in approach to methodological design, analysis of archaeological evidence, specialist subject areas and input, and the drawing of conclusions. The process of interpretation and communication of archaeological results through grey literature is here shown to be widely variable. However, despite the clear differences between the fundamental nature of each of these reports, it was possible to identify which grey literature reports had securely identified an Iron Age settlement site through a reading of the text and a consideration of the fieldwork project design and execution compared to the only site where the description of an Iron Age settlement appeared to be relatively uncertain which was the Ware Football Ground site. This report in particular presented a lack of securely dated material in addition to a lack of specialist involvement in the

analysis of the results of the archaeological fieldwork which in combination made the results of this grey literature report less robust overall.

This comparison of grey literature reports dealing with the same general archaeological site type demonstrates that it is not only the manner of archaeological reporting which shows wide variation but also the content of the archaeological reporting. The grey literature reports became more useful overall when the presented results were more robust; it is important to distinguish this is not because the archaeology itself was necessarily more significant but that the presentation of the results of the archaeological fieldwork was done more assertively. The inclusion of more and varied forms of evidence relating to archaeological fieldwork strengthened the overall usefulness of the report; of course, it is possible that too much information may also be confusing or unnecessary. Referencing the conditions and way in which the fieldwork was conducted such as describing a project design or brief of works and clearly delineating the methodology followed on site added to an understanding of the reliability of the results. The inclusion of specialist analysis for particular materials added to an understanding of the limits and possibilities of the available archaeological remains, especially when the full specialist report was included either in the main text or as an appendix rather than only as a summary of the results. The inclusion of maps, plans, figures and photographs all allowed a greater understanding of the nature of the site under investigation. Finally, a greater extent to the discussion of the archaeological results and presentation of the overall conclusions regarding the site enabled a better understanding of the reliability of the conclusions. The grey literature reports which presented the widest range of different contributing parts to the report (whether measured in number of textual sections, items in the appendix, contributing specialists, etc.) tended to also be the reports which were more robust in their conclusions

and therefore more useful overall to a hypothetical reader who wished to investigate settlement sites dating from the Iron Age in the Lea Valley.

A further conclusion regarding the relative usefulness of different grey literature reports comes from a consideration of meta-data, tagging and filtering, all of which concern the cataloguing of grey literature reports. As earlier stated, I chose to examine grey literature reports concerned with Iron Age settlement sites as I expected this type of site to be fairly ubiquitous across the Lea Valley region and to therefore be able to draw from a wide sample for comparison. However, a search of the available grey literature records using the keywords 'Iron Age' and 'settlement' returned very few results which was unexpected given the density of archaeological investigation within the Lea Valley study area. When the search terms were widened to filter reports using only the key word 'Iron Age' a further 21 grey literature results were returned but the majority of these additional results related to individual features or finds that had been dated to the Iron Age rather than referring to an identification of an Iron Age settlement site as a whole. Further investigation determined that this disparity was not limited to the Iron Age; according to the grey literature library, only fourteen sites within the Lea Valley study area were determined to be a 'settlement site' of any period from the Bronze Age to the end of the Early Medieval time period.

This apparent paucity of clearly defined settlement may of course have many causes. For instance, this may be a function of the nature of the keyword summaries for each grey literature report which is based on and limited by what is entered upon the OASIS form or this may be a genuine reflection of the relative lack of past settlement within the study area. There are of course varying and diverse identifications of 'settlements'; Cooper and Green (2017) usefully summarise recent and ongoing debates about defining meaningful concentrations of material or 'sites' in their analysis of artefact evidence at a landscape

scale using legacy data. The strongest factor influencing the lack of past settlement data for the Lea Valley however is most likely the nature of development-led evaluation fieldwork where the emphasis is on recording the presence/absence of archaeological remains. In this situation, it can be determined (and recorded) that the site contained features or artefacts that date to the Iron Age but the various constraints under which the site has been excavated (for example, within a limited time and budget or within a limited area or percentage of the larger overall site) mean that any more conclusive results are difficult to obtain. It is easily possible to point to the presence of features and artefacts dated or phased to the Iron Age for example but not to be able to conclusively pinpoint a clear settlement location. The potential difficulty in drawing analytical conclusions on a larger scale from archaeological evaluations may pose one of the greatest obstacles to using grey literature reporting in order to generate broader regional or large-scale synthesis works.

## 5.7 Conclusions

The Lea Valley has proved to be an intriguing region for a deeper examination of the nature of archaeological grey literature reporting. My analysis of the spatial patterning and distribution of grey literature and archaeological investigations within the Lea Valley case study area has allowed a better understanding of the relationship between archaeological fieldwork and report production. It has helped to illustrate the impact of development pressures and environmental affordance on archaeological investigation and enabled an understanding of how archaeological investigation and reporting has evolved over the period between 1990 until 2010. I was able to identify potential issues arising from the unique composition of each dataset relating to grey literature that formed the basis of my analysis and determine an approach to the data which would avoid potential difficulties. I also began to see a trend for localism and regionalism throughout the case study area, with many grey literature producers using regional signifiers in their organizational titles and

generally operating within a particular area. Through an examination of comparable ten kilometre square sample areas I was able to begin to characterize archaeological investigation and grey literature reporting in more detail and better understand the influencing factors. By then conducting a comparative study of grey literature reports produced by different organizations through a detailed analysis of significant markers found within grey literature reports, I was able to begin to classify grey literature reports and report producing organizations. This led to the recognition that grey literature report producing organizations had an identifiable and individualistic mode of report production. Finally, a detailed investigation of the contrasting content of grey literature reports nominally presenting similar archaeological results, the discovery of an Iron Age settlement site, allowed for the recognition that grey literature reports have a varying level of applicability or usefulness to archaeological understanding and that this possibly relates to a number of factors.

Overall, the Lea Valley has proven to be a study of diversity in both archaeological practice and practitioners. Both grey literature itself and the producers of grey literature have been shown here to vary greatly and to be influenced by a wide range of factors.

# 6 Mid-England case study: Frameworks of Reporting

## 6.1 Introduction

In this chapter I introduce the east-west transect area across the middle of England and the reasons why it makes a particularly strong case study area to examine the influence and effect of different archaeological frameworks upon grey literature reporting. I then briefly characterize archaeological investigation and associated grey literature reporting since 1990. I make a more detailed cross-county and cross-research framework examination of archaeological practice and reporting using six 10 km square sample areas as a comparative basis. I investigate in detail the grey literature produced by different organizations operating across several county divisions. I then discuss the results of an analysis of the efficacy of four different reports presenting the same broad evidence type of human remains.

## 6.2 The mid-England transect case study area

The mid-England case study area comprises a transect crossing the middle of England from west coast to east coast, from Liverpool and the Wirral peninsula, across the Peak District National Park and down to the east coast of Lincolnshire (Figure 43). This is an area with extremely varied terrain and which crosses many administrative and regional boundaries; it is also an area with an extremely broad range of archaeological remains in varying states of preservation and disturbance in rural, urban and coastal contexts.

### *Character and Form*

At the western end of the case study area is the Wirral peninsula, characterised by its parallel sandstone ridges and framed by the River Dee and the River Mersey; these two

rivers are joined by the Shropshire Union Canal, technically making the Wirral an island. Moving eastwards, the study area then crosses the low-lying Cheshire and South Lancashire plains. The historic city of Chester is located just outside of the study area to the south while the large urban areas of both Liverpool and Manchester lie to the north. The topography of the study area then rises steeply into the Pennines where it encompasses a large section of the Peak District National Park and Derbyshire just south of Sheffield before dropping back down through the more rolling landscape of Nottinghamshire to the River Trent. There, the study area opens out into the flat riverine plains of Lincolnshire and encompasses the City of Lincoln before climbing once again into the Lincolnshire Wolds Area of Outstanding Natural Beauty (AONB) and finally dropping back down towards the coastal plain of eastern England and the shore of the North Sea.

The superficial and underlying geology of the study area is equally complex (Figure 44). The Wirral and Cheshire and South Lancashire plains as well as the plain of Lincolnshire tend towards Glacial Sand and Gravels and Till with scattered areas of both Alluvium and River Terrace Deposits along river valleys, while the Lincolnshire Wolds and east coast are composed of areas of Clay and Chalk. These are all geological superficial formations known to be favourable to the preservation of past human activity.

The overall majority of the study area is underlain by the Coal Measures Formation and Limestone, which is extrusive in the Peak District forming the Pennines and especially the distinctive White Peak character area. The widespread presence of Carboniferous rock and coal rich areas within the study area also means that the area has been subject to much below-ground mining activity and disturbance in both the recent and more distant past.

### *Why the mid-England transect case study area?*

The strength of the study area lies in the opportunity to compare and relate the results of archaeological fieldwork from a wide range of contributors dealing with a similarly wide

range of archaeological remains. This case study area allows the opportunity to examine questions arising from the results of the Lea Valley case study area in greater detail, especially the consideration of the relatability and comparability of grey literature reports created by different producers in different settings and administrative regimes.

The extensive coverage of this case study area allows consideration of the impact of broader regional oversight such as regional research frameworks to archaeological grey literature. Although produced by different organizations and dealing with different types of archaeological remains situated and explored in vastly different terrains, are the archaeological results presented in a grey literature report from the Wirral relatable and comparable to the contents of a grey literature report from the Peak District National Park or the City of Lincoln? To what degree should we expect them to be?

### *Archaeological framework of the mid-England transect area*

The political, legal and social framework through which archaeological fieldwork is generally conducted within the mid-England transect tends to be organized at the county level although the region is administratively complex (Figure 45).

The case study area encompasses territory from 15 distinct administrative areas, including eight metropolitan districts and four unitary authority areas that all operate as single-tier Local Authorities, as well as three counties (Derbyshire, Lincolnshire and Nottinghamshire) operating on a two tier system, meaning that governmental roles and responsibilities are divided between shared services at the county level and local council services, including a further number of local councils within the study area for these three counties. These administrative areas are all responsible for giving planning advice regarding archaeology through the role of a County Archaeologist (or equivalent position) to oversee and regulate archaeological investigation within the region; the number of these

roles in the region is variable as posts are removed and resources shared between different regions.

Additional complexity is provided by the presence within the study area of the Peak District National Park, which provides their own in-house archaeological advice in the form of the Peak District National Park Authority Cultural Heritage team.

Meanwhile, the maintenance and updating of the Historic Environment Records (HERs) may be held by a variety of responsible bodies including County Councils, District Councils, Unitary Authorities or in selected major historic towns and cities in the form of an Urban Archaeological Database (UAD). There are eight HER regions within the study area; Merseyside, Cheshire, Greater Manchester, Derbyshire, South Yorkshire, Nottinghamshire, Lincolnshire and Lincoln, which is held as a UAD (Figure 46). The recent history of the temporary closure of the Merseyside HER in particular shows an area lacking committed financial resources (although not in dedicated archaeologists) but which has recently seen some positive investment. However this did impact the HER for a period of several years and the current situation may continue to be precarious.

Further divisions of archaeological oversight and guidance within England are provided by the Regional Research Frameworks which are organized by HE region. The mid-England transect falls within three different HE regions; the North-West, the East Midlands and a small portion of Yorkshire and the Humber. The research framework for North West England was published in two volumes, one detailing the resource assessment of the area to understand the then current state of knowledge of the archaeological resource in the north-west region (Brennand 2006) and the other specifying both the research agenda and strategy for the region (Brennand 2007). The East Midlands research framework was originally published as one volume (Cooper 2006) which covered the resource assessment and research agenda for the region but which did not include a research strategy; an

excellent extension of this volume was recently published (2012). However, this means that for the time frame of my own investigation the East Midlands area had no published research strategy. The Yorkshire regional research framework was also published in two separate volumes; volume one consists of the resource assessment of the archaeology of the Yorkshire region (Roskams and Whyman 2005) while volume two covers the research agenda for the region but does not explicitly present a research strategy (Roskams and Whyman 2007).

Additionally, the Peak District National Park have released their own strategy document *Peak through time: Cultural heritage strategy for the Peak District National Park* which includes an overview of the cultural heritage resource of the National Park and an action plan, making it very similar in content and aims to the regional research frameworks although with a broader heritage focus than only archaeology (Peak District National Park Authority 2004). Another major synthesis work for the region is the *City by the Pool: Assessing the archaeology of the City of Lincoln* (Jones *et al.* 2003) which is an excellent amalgamation of the results of archaeological investigation and documentary research into the background and development of the City of Lincoln but which does not contain an explicit agenda or strategy for regional research.

## 6.3 Characterising fieldwork investigations and grey literature reporting in the mid-England transect case study area

In order to begin to explore grey literature in the mid-England transect case study area, it is necessary to first evaluate the current knowledge of archaeology, archaeological investigations and grey literature reporting as provided by the most relevant available data as demonstrated in my first case study area. In order to do so, data from the eight HERs

within the study area was combined with information from both the AMIE and PAS datasets and spatially plotted (Figure 47).

Much like the Lea Valley, this case study area is very rich in known archaeology from the project time periods of the middle Bronze Age through to the Domesday Survey of AD 1086. The study area reveals areas of both highland and lowland archaeological occupation and shows long distance connective features such as Roman roads and canal networks. Known archaeology has been observed extensively in both urban and rural contexts and in areas that might have been considered more or less accessible in the past, such as the upland areas of the Pennines or the fertile plains of Lincolnshire. This spread and density of known archaeological deposits and structures indicates that there is likely to be a similar spread and density of archaeological excavation and associated grey literature recording.

The GLL, AIP and EI record 79 unique archaeological organizations which have either undertaken archaeological investigation and/or produced grey literature reports between 1990 and 2010 and which produced results dating to the period of 1500 BC to AD 1086 (Figure 48). Although some of these organisations contributed a comparably high volume of archaeological investigation and reporting (Figure 49), the majority contributed only one single relevant archaeological investigation or grey literature report (Figure 50).

### *Spatial distribution*

Although the point pattern spatial distribution is not an exact match for all three datasets, the general spread of archaeological fieldwork and reporting can be shown to follow similar trends in all three datasets across the study area (Figure 51); most notably an extremely high concentration of excavation and reporting in Lincoln and its immediate environs, followed by a lower density cluster of investigation within the Peak District and then fairly evenly scattered across the rest of the study area with some clustering around

urban centres such as Ellesmere Port and Northwich. The indicated trends in fieldwork investigation and reporting follow the pattern established in both the national overview and the Lea Valley case study; unsurprisingly, areas of higher development pressure such as the edges of urban centres where expansion development might be expected to occur also show a higher incidence of archaeological investigation and reporting. The spatial distribution of these datasets also indicate that areas with potentially stricter development control and which therefore might have more requirements for archaeological monitoring prior to proposed development, such as the Peak District National Park or the Lincolnshire Wolds AONB, also show a higher concentration of archaeological investigation and reporting.

A similar range of obscurations and biases can be found within the mid-England transect case study area to those outlined above for the Lea Valley. For example, areas experiencing modern day development pressure also exhibit a concentration of development-led archaeological investigation, such as found in and around the City of Lincoln. Areas that have been historically obscured in the past as a result of environmental factors such as forest cover or social factors such as restricted landuse exhibit less archaeological investigation and reporting. Both of these factors can be found at the historic location of the medieval landscape entity of Sherwood Forest which does indeed evidence less archaeological investigation and reporting than the surrounding areas. This case study area is a good example of further data distribution factors which need to be considered when synthesising various datasets; the spatial distribution of archaeological data is not entirely formed by a combination of past behaviour or modern excavation practices alone. When the density of HER features is examined by HER regions, it becomes apparent that the distribution of known archaeology may be influenced by some regional patterns in the collection and recording of archaeological data (see Cooper and

Green 2016 for a further discussion of this issue). For example, dense distributions of HER data abruptly transitioning to sparse distributions along the borders of different HER regions may indicate different methodologies of data recording rather than actual differences in past human behaviour. This is illustrated by the differences in HER spatial patterning density between both Derbyshire and Lincolnshire which both appear much denser against Nottinghamshire in the middle which is much less densely populated; especially as these variations in density so closely match the divisions between HER regions (Figure 52). This could also potentially impact records of known excavation or grey literature reporting, such as in the case of linked excavation sites such as a utilities pipeline investigation project where the data may be recorded individually or grouped together as one investigation depending upon the recording practices of which local authority area the site may fall within.

A further interesting element of spatial distribution of archaeological investigation and grey literature reporting within the mid-England transect case study area is the clearly observable territorial boundaries of the individual grey literature producing groups where no single producer is found within more than three separate counties, let alone in all fifteen districts (Figure 53). This trend is clearly illustrated by looking at the spatial distribution of the ten organisations which have produced the highest volume of grey literature reporting from 1990 to 2010 in the case study area (Figure 54). Organisations are clustered within specific areas and when they are found in more than one administrative region they are generally adjacent districts such as Lindsey Archaeological Services which has conducted archaeological fieldwork and associated grey literature reporting within both Lincolnshire and neighbouring Derbyshire but nowhere else within the case study area. The organisation with the widest spread within this comparative list is the University of Manchester Archaeological Unit although they can be found only within the western

half of the case study area. This can be contrasted with the extremely limited territorial spread of the Peak National Park Archaeology Section who understandably have only conducted archaeological investigation within the confines of the Peak District National Park. There is also a clear division between organisations active to either side of the River Trent, with many working only within Lincolnshire and Nottinghamshire in the east such as the City of Lincoln Archaeology Unit and other organisations only active in Derbyshire and all other districts to the west. The impact of this spatial distribution upon the character and nature of archaeological investigation and grey literature reporting will be further explored later on in this chapter.

### *Temporal distribution*

It is also worth comparing the temporal distribution of these three datasets (Figure 55). The behaviour of the EI and the AIP appear closely related throughout the time period of the study area while the GLL displays more unique behaviour. The peaks and troughs in archaeological site excavation shown by the EI appear to be echoed in the following year by the peaks and troughs of the AIP; gradually throughout the twenty year time period these come to happen in the same year, indicating a move towards a shorter turnaround time between the excavation of the site, as recorded in the EHEI, and the production of the associated grey literature report, as recorded by the AIP. In contrast to the pattern seen elsewhere, the GLL does not experience a growth after 2003 and the wider introduction of the OASIS system; instead, there is a clear decline. All three datasets drop off in the amount of data they hold before the end of the time period under consideration; this is potentially a reflection of a current backlog of data entry in more recent years but may also indicate the overall widespread reduction of archaeological investigation in England after the recent economic recession beginning in 2008.

## 6.4 Cross County Comparison

For the purposes of cross-county analysis, I selected six 10 km square areas within the mid-England transect case study area; five for each local authority and one for the Peak District National Park (Figure 56).

These 10 km square areas illustrate a wide range of archaeological investigation and reporting (Figure 57). Again, as was previously shown within the Lea Valley, each 10 km square area had a distinctive character and produced different types of results. However, unlike the Lea Valley case study more generally, each 10 km square within the mid-England transect area had a much lower amount of recorded archaeological investigation and reporting (Figure 58).

### *Cheshire West and Chester Unitary Authority*

The Cheshire West and Chester Unitary Authority 10 km square area incorporates the early medieval market town of Frodsham with the River Weaver running from east to west where it joins the River Mersey estuary (Figure 59). The M56 and the Chester to Manchester railway line run diagonally across the upper left corner of the 10 km square area. Delamere Forest, belonging to the Forestry Commission, occupies a large proportion of the southern half of the square and which is also almost the only region within the area that does not have any known archaeology or archaeological investigation. Otherwise, this area is rich in known archaeology; it contains a known Iron Age univallate hillfort, Bradley Camp, as well as several other known or suspected settlements from the Bronze Age, Iron Age, Roman and Early Medieval periods, many located in close proximity to Frodsham on the nearby promontory overlooking the River Weaver. It is crossed by several Roman Roads and is a region popular with metal detectorists, resulting in a rich dataset of coins and metal finds recorded by the PAS.

Surprisingly for such an archaeologically rich area, with well over 250 records of known archaeology from the HER, NHRE and PAS datasets, there are very few records of archaeological investigation or recording related the period of 1500 BC to AD 1086 (Figure 60). The GLL contains one report, the Frodsham Rail Connection archaeological desk-based assessment, walkover and topographic surveys, and watching brief produced in 2009 by Oxford Archaeology North, while the EI refers to three entirely different investigations from 1994, 1996 and 2001 conducted by Gifford and Partners and Lancaster University Archaeological Unit. The AIP has no record of any grey literature reports from this area at all. The GLL report and the EI investigations are all unrelated records with no overlap between them regarding archaeological investigations and subsequent associated grey literature reporting. Both Oxford Archaeology North and Lancaster University Archaeological Unit are commercial contracting archaeology companies[14], while Gifford and Partners is a large multi-national consulting engineering firm. None of these organizations are based within the 10 km square study area or even within the mid-England transect study area as a whole.

There are several potential explanations for this discrepancy between the amount of known archaeology and the amount of known archaeological investigation and reporting. The records pertaining to known archaeology may refer to investigations or discoveries which pre-date 1990 and which are perhaps mainly antiquarian in nature, in which case they will not be reflected in the GLL, AIP and EI datasets which have been filtered to contain records relating to the period from 1990 to 2010. The extremely low numbers of archaeological investigation and reporting may also be related to a possible backlog of data to be entered in each database. A further possibility is that the sparse pattern of known investigation and reporting relates to an extremely low OASIS uptake in this region.

[14] The former took over the latter in 2001.

Finally, it may be that despite a high level of known archaeology, there is very little development pressure within this area to generate archaeological investigation and grey literature reports.

### *Cheshire East Unitary Authority*

The Cheshire East Unitary Authority 10 km square incorporates the medieval village of Alderley Edge in the north of the study area, with a small portion of the early medieval market town of Macclesfield included in the eastern half of the 10 km square (Figure 61). Both settlements are located on slightly higher ground overlooking the flat Cheshire plain below. The area is moderately populated by known archaeology according to the data held by the relevant NHRE, HER and the PAS datasets, much of it related to a Bronze Age funerary landscape with a number of barrow clusters distributed across the plain. A copper mine located just to the south-east of Alderley Edge village appears to have been worked since the prehistoric period and the vast majority of known archaeology in the region is clustered in and around this site.

This 10 km square area has slightly more evidence of archaeological investigation and reporting; the GLL contains two grey literature reports for the area, while the AIP records four investigations and the EI records five archaeological investigations from the area (Figure 62). In addition, several of these records appear to be linked between datasets; one site shows up as both a known archaeological investigation in the EI and a known report in the AIP (Pot Shaft, Alderley Edge), while a second site shows up in all three datasets as a known archaeological investigation in the EI, a known report in the AIP and an actual copy of the report submitted to the GLL (Stormy Point, Alderley Edge). Archaeological investigation in this area was undertaken mainly by the University of Manchester Archaeological Unit.

Overall this 10 km square area illustrates a much more robust distribution of archaeological investigation and reporting activity over the 1990 to 2010 time period, although there is still a lower uptake of OASIS and known associated grey literature reporting than the equivalent data found in both the AIP and the EI datasets.

### *Peak District National Park Authority*

The Peak District National Park Authority 10 km square area falls almost entirely within the Dark Peak Character Area of the Peak District National Park with the western edge of the sample area crossing into the White Peak Character Area (Figure 63). The River Derwent runs north to south through the middle of the 10 km square sample area. The Peak District National Park in general lies at the southern tip of the Pennines mountain range and hills with Kinder Scout being the highest peak within the park at 636 metres above sea level; accordingly the Peak District National Park area is the highest elevation within the mid-England transect case study area. The Dark Peak is characterised by large scale sweeping moorlands formed on gritstone, pastures enclosed by drystone walls, gritstone settlements and broad flat shale valleys. The White Peak, in contrast, is formed on limestone and characterised by rolling farmland and steep sided dales. Almost fifty percent of the Dark Peak Character Area is designated as either a Special Protection Area or a Special Area of Conservation in addition to a further almost fifty percent designated as Sites of Special Scientific Interest (SSSI) making this a landscape subject to much more regulatory oversight than other areas of the mid-England transect case study area. The gritstone uplands of the Dark Peak present extensive and well-preserved evidence for Bronze and Iron Age activity and settlement including barrows, circles, ringcairns and hillforts and there is a broad representation of known archaeology within this 10 km square sample area.

Compared to the density of known archaeology, there is a definite paucity of recorded archaeological investigation and associated grey literature reporting (Figure 64). There are no records held at all for the 10 km square sample area in the GLL, while the AIP only records four known archaeological grey literature reports. The EI has a further 11 records relating to archaeological investigation undertaken within the 10 km square sample area. The majority of the archaeology has been undertaken by the Peak National Park Archaeology Section which is based within the National Park Authority with the commercial archaeology organization of Trent and Peak Archaeological Trust coming a distant second for archaeological activity within the 10 km square sample area.

This area has a very different character of archaeological investigation and reporting than the preceeding 10 km sample areas. There are no GLL records relating to the period 1500 BC to AD 1086 and both the EI and AIP datasets are completely dominated by the Peak National Park Archaeology Section which unsurprisingly operates only in-house to the National Park Authority. There are no large settlements within the sample area and the recorded investigations do not appear to be development-led archaeology; instead they appear to be related to the operation of the National Park such as documenting the results of 'Management Surveys'.

### *Derbyshire County*

The Derbyshire County 10 km square sample area is situated on coal measures formation and in contrast to the elevations of the Peak District it is a generally more low-lying area with hills and escarpments above wide valleys (Figure 65). This sample area includes the Early Medieval market town of Chesterfield at the confluence of the Rivers Rother and Hipper at the south of the 10 km square with the smaller Early Medieval settlement of Dronfield on the River Drone to the north. The abundance of both coal and iron deposits and ready water supply encouraged mass industrialisation in the area and there is a long

history of mineral working and below ground disturbance in the region which would have an impact on the survival of archaeological deposits (Natural England Notts Derby York Coalfield). There is a scattered distribution of known archaeology across the entire 10 km square sample area with a larger cluster of archaeological records found within the Chesterfield area. The majority of known archaeology records appear to consist of individual findspots rather than site types or monument forms.

In contrast to the location of known archaeology, records of archaeological investigation and grey literature recording are only found within Chesterfield (Figure 66). The GLL contains no records for the 10 km sample area but the AIP records six investigations with associated resultant reporting while the EI records 15 archaeological investigations over the time period of 1990 to 2010. All of the archaeological investigations and reporting were undertaken by commercial contracting archaeological organizations specialising in development-led archaeology based in the near region including the University of Manchester Archaeological Unit, Trent and Peak Archaeological Trust and ARCUS. Despite the Derbyshire County and the Peak District National Park 10 km square sample areas being directly adjacent and also both falling within the County of Derbyshire, the Derbyshire County 10 km square sample area has a very different character to that of the Peak District National Park sample area. The Derbyshire 10 km square sample area shows a strong bias towards archaeology investigation and reporting driven by commercial city centre development with no evidence of investigation being undertaken in rural areas at all. Although some of the same archaeological organizations operate in both sample areas such as Trent and Peak Archaeological Trust, there is not much overlap between them.

### *Nottinghamshire County*

The Nottinghamshire County 10 km square sample area incorporates an area of gently rolling hills underlain mainly by sandstone; historically the area was managed as woodland

as part of Sherwood Forest and is generally still a well-wooded area in the present day (Figure 67). This sample area is almost entirely rural in nature. Both the River Poulter and the River Meden run west to east across the sample area. Although the HER itself does not contain many records for the area compared with neighbouring HERs (as previously discussed above), both the NHRE and the PAS illustrate a fair amount of known archaeology indicating the popularity of metal detectoring in this area. This area has also been subject to a detailed NMP survey which has also recorded many landscape features dating to the period of 1500 BC to AD 1086.

In terms of recorded archaeological investigation and grey literature reporting however, this 10 km square sample area provides almost no data at all (Figure 68). The single report identified from the GLL has been mis-located and should instead be linked to a distant site in Humberstone, Leicestershire. Both of the single AIP and EI records relate to the same archaeological investigation, a water pipeline monitoring project running from Kirton to Budby Main conducted by Trent and Peak Archaeology Section in 1992. No other archaeological investigation or grey literature reporting is known from this area.

This sample area demonstrates the general paucity of data from Nottinghamshire compared to neighbouring counties. It also demonstrates that known archaeological data held in publicly accessible datasets is not always generated through development-led archaeological investigation; certainly without the knowledge generated from the NMP and from the reporting of metal-detected finds, this area of England would appear as a blank in terms of archaeological knowledge regarding the period 1500 BC to AD 1086. This area also appears to demonstrate the data implications of being in an area of low affordance for archaeological remains, most likely caused by the long-term presence of historical Sherwood Forest and the resultant impact on levels of development and settlement opportunities in the area.

### *Lincolnshire County*

The Lincolnshire County 10 km square sample area is centred on the small market town of Alford and includes part of the Lincolnshire Wolds on its western edge, which is a designated Area of Outstanding Natural Beauty, before descending to the flatter coastal plain of Lincolnshire (Figure 69). The North Sea lies just beyond the eastern edge of the 10 km square sample area. A variety of known archaeology is found across the 10 km square area. Bronze Age round barrows form the majority of HER data although there is also a large amount of known archaeology associated with the line of the Roman Road and associated settlement sites. There are several clusters of evidence within the 10 km square area with a high concentration of PAS data, generally of Roman or Iron Age coins and small metal finds, most likely indicating areas of high metal detectorist activity.

This area also shows evidence for a slightly wider variety of archaeological investigation and associated grey literature reporting which appear to be clustered near the three settlements of Ulceby, Willoughby and Alford (Figure 70). The EI references five archaeological investigations which have taken place within the sample area although three of these investigations are associated with the same site and different phases of the same project, the Humber Wetlands Survey of the Butterbump Barrows. Unusually, the six records in the AIP include five authored by the same individual. The GLL on the other hand only contains three records none of which are connected by individual authorship. Lindsey Archaeological Services, a local commercial contracting archaeology organization, is shown to have undertaken the vast majority of archaeological investigation within this area although interestingly HE (in the form of the Ancient Monuments Laboratory Historic Buildings and Monuments Commission) are also recorded as contributing to the record of archaeological investigations and reporting within the sample area via their work on the Humber Wetlands Survey.

The Lincolnshire 10 km square sample area evidences a busier landscape both in terms of known archaeology and through archaeological investigation and associated grey literature reporting than the earlier 10 km square areas. One local archaeological organization, Lindsey Archaeological Services, dominates the production of grey literature for the area. Archaeological investigation is undertaken both within the Lincolnshire Wolds AONB as well as on the coastal plain. In general this 10 km square sample area is characterised by archaeological data created as a result of the development of small town settlements such as Alford.

### *Cross-county Overview*

When the findings from examining each 10 km square sample area are considered collectively, several distinct themes emerge. Certain areas are more successful at sharing data than others - perhaps through greater participation in the OASIS system or by the creation of HER data from historic records. This creates different densities of both known archaeology and known archaeological investigation and reporting which do not necessarily reflect true differences in past human behaviour. Some areas with less archaeological investigation may also be due to environmental factors such as the long standing presence of Sherwood Forest in Nottinghamshire which may contribute to the low levels of archaeological investigation and reporting in this area. The creation of archaeological data in many areas is driven by development; however, that is not the complete picture. For example, the archaeological data from the Peak District National Park is almost entirely unrelated to proposed development and instead forms part of the required oversight and maintenance the National Park.

Commercial archaeological companies produce the largest amount of grey literature reporting within each sample area although other types of grey literature producers may also be found in certain sample areas such as reports produced by HE. In every single

sample area the majority of grey literature reporting was produced by archaeological groups based local to the region of investigation; so much so that the active archaeological organizations in each 10 km square area rarely repeated between squares with only a small handful of organizations active in more than one 10 km square area. The Peak National Park Archaeology Section for example only produced work within the boundaries of the Peak District National Park. Archaeological organizations almost universally used a regional identifier in their organizational title such as Lindsey Archaeological Services, Trent and Peak Archaeology Section or the University of Manchester Archaeological Unit. Examining the producers of archaeological investigation and associated grey literature reporting across the mid-England transect case study area through a comparison of 10 km square sample areas has illustrated the diversity of archaeological practice between each county and even, in the case of Derbyshire, within the same county. This has illustrated the narrow regional territories of many of the contributing archaeological organizations and examined some of the possible underlying causes of differences in archaeological data from each individual region. However in order to properly understand the underlying nature of grey literature within the mid-England transect case study area, it is necessary to make a closer examination of the grey literature itself.

## 6.5 Report Producers and Grey Literature Character

As discussed above, only a small handful of report producing organizations were present in more than one or two counties, unitary authorities or metropolitan districts within the mid-England transect case study area, and most were concentrated in the eastern end of the case study area. There was also very little overlap between organizations with the greatest geographical spread and the organizations who produced the highest total volume of archaeological grey literature (Table 9). University of Manchester Archaeological Unit (also known as the Greater Manchester Archaeological Unit (GMAU)), Oxford

Archaeology North (OAN) and Peak National Park Archaeology Section (PNPAS) all produced grey literature linked to sites distributed within more than one county in the overall case study area. Two of the three were practising commercial field archaeology organizations, while the PNPAS is part of the Peak District National Park planning authority. The GMAU was based out of the University of Manchester and operated for over 30 years before being closed by the University in 2012 (again, after the scope of the current investigation) (University of Manchester 2016). This action left Greater Manchester without an archaeological planning advisory service; as an interim solution a new Greater Manchester Archaeological Advisory Service was opened by the University of Salford's Centre for Applied Archaeology (University of Manchester 2016). OAN is based in Lancaster and has been in existence since 1979, first as the Cumbria and Lancashire Archaeological Unit, from 1986 as the Lancaster University Archaeological Unit and, since 2001, as part of Oxford Archaeology. OA North has around 50 staff working on a wide range of commercial, research and community programmes. (Oxford Archaeology North 2016). PNPAS is embedded within the Peak District National Park Authority (Peak District National Park Authority 2015).

In contrast, Lindsey Archaeological Services (LAS), Allen Archaeological Associates (AAA) and John Samuels Archaeological Consultants (JSAC) produced the largest amount of grey literature reporting within the mid-England transect case study area, although the work of all three was mainly concentrated on the City of Lincoln and surrounding area. LAS was based in the Sheffield region and apparently went into liquidation in 2008 (Companies House 2015). AAA was established in 2005 and now has offices in Lincoln, Birmingham, Cambridge and Southampton (Allen Archaeology 2015). JSAC were based in Newark, Nottinghamshire since at least 1990; they were purchased by CgMS archaeological consultants in 2006 (Planning Resource 2015). All three of these

commercial contracting field archaeology units produced a relatively high volume of archaeological grey literature reporting based around the City of Lincoln.

Following my established methodological approach for grey literature comparison groups, grey literature reports were reviewed for a series of markers which are explained to their full extent in Chapter 3.

### *Comparison Group One: Allen Archaeological Associates, John Samuels Archaeological Consultants and Lindsey Archaeological Services*

The 237 grey literature reports produced by these three organisations share a number of common elements that were easily identifiable and which were generally structural in nature. All reports were typed and written in neutral formal language. Despite these observable similarities, closer investigation revealed that there was also a wide range of variation amongst grey literature reports between different organisations and also within the same organisation over time. The grey literature reports from these organisations all related the results of archaeological fieldwork investigations undertaken within Lincolnshire.

All reports have an identifiable cover page and the cover invariably names the site of archaeological investigation, its specific location (almost invariably as a street address rather than as a NGR) and the type of archaeological fieldwork undertaken, such as trial trenching evaluation or open area investigation. All grey literature reports also name the responsible archaeological organisation on the cover, almost always accompanied by the logo of the responsible body. Similar to the results of the Lea Valley case study area, other potential information which could be considered pertinent to either appropriately framing or cross-referencing the data found in the subsequent pages is only variably and often infrequently recorded such as the name of the author, a report number or other form of individual report reference data such as a site code. The client for whom the grey literature report was produced is almost always clearly stated on the cover; interestingly, this

happens far more often than individual authors are recognized perhaps indicating which contribution was considered more valued or significant. Of the three organisations, only AAA clearly specifies the individual report author on the cover but even then not in all cases. JSAC are the only organisation which displays their professional qualifications and memberships on the cover with the accompanying seal to indicate that they have, for example, qualified as a CIfA RAO. Even the release date of the report is only rarely indicated on the cover. In general even after examining the substance of these reports it was often difficult to determine when the report was actually released or when the related archaeological investigation was undertaken and on many occasions both investigation and release date are unclear regardless of which organization was responsible for the grey literature. This makes it impossible to plot the length of time between the fieldwork investigation and the production of the associated grey literature reporting for this comparison group unlike in the Lea Valley case study.

Also in contrast to what was found in the Lea Valley, the grey literature reports created by these three organisations almost never had a dedicated quality assurance section indicated internal review or checking process. Only the AAA reports from 2009 onwards contain a limited form of a QA section; this coincides with an organisational rebranding to Allen Archaeology Ltd and which may indicate that larger structural changes within the organisation are being reflected in their grey literature production. A report reference number was included within the report for grey literature produced by both AAA and JSAC but never for LAS reports and while both AAA and JSAC always included the relevant site code, LAS only occasionally included site codes. This would make it more difficult to track LAS reports after production, to connect them to the correct site and to relate them to the relevant phase of an archaeological investigation, especially without access to the archived site record. Of these three report producers, only AAA operated

within the relevant time frame operation of the OASIS system but their reports only include OASIS reference numbers after 2009 and their re-organisation into Allen Archaeology Ltd which again may indicate substantial organizational changes being reflected within the nature of their grey literature. However it does appear quite common for all three organisations to include a planning application reference which would enable a connection between the grey literature report and the relevant development. A museum archive accession number is also frequently included within these reports making it possible to trace the finds discussed within the grey literature. Both of these elements were found more infrequently or not at all in the Lea Valley case study area and it is possible that their almost uniform appearance here may be the result of the influence and working practices of the Lincolnshire region and possibly the overseeing archaeological authority of the area.

Almost every report within this comparison group included a Table of Contents and an introductory abstract or summary; when these elements were absent they were usually both missing from the same report. The significance of the Table of Contents and an opening summary is that they indicate both the internal structure of the grey literature report and what the author felt was the critical information necessary to be communicated to the reader. Both of these elements signify intentionality on the part of the report producer and contribute to the overall design of the grey literature report. The summary sections universally described the archaeology found during the archaeological investigation. They often also described the significant parts of the archaeological and historical background of the site. Although never mentioning the author or the excavation team, the client was always named in the introductory summary section along with the site name and location and the impetus behind the archaeological investigation such as occurring in relation to a planning application or a proposed development.

The internal divisions as indicated by the Table of Contents or visible within each grey literature report varied within this comparison set but all shared an identifiable section on the archaeological and historical background of the site, a clearly signposted conclusion or discussion section and a bibliography. Most also included a section on methods and a description of the site and its topography. The majority of these reports also included at least one specialist report, usually added as an appendix. The most frequent type of specialist report to be included was pottery, followed by ceramic building material (CBM); these two categories formed fifty percent of all specialist reporting (Figure 71). When categories of specialist reporting are broken down by report producer, AAA is shown to utilise the widest range of specialists compared to the other two organisations. However, it is difficult to say if this is a result of the working culture of that particular organisation or if it is a coincidence of finding a wider range of materials requiring specialist examination from their archaeological fieldwork investigations (Figure 72).

Interestingly, none of these reports included a section on the relevant legislation or guidance. A small selection of the reports included a section titled Planning Background which detailed that the archaeological investigation was required in support of a planning application but even here there was no explicit reference to the Ancient Monuments Act (1979) or to PPG 16. Uniquely, AAA reports almost always included a UID reference to the specific brief under which the archaeological works were carried out allowing for a clear understanding of the process of site investigation from the initial brief and design of archaeological investigation, through to the actual fieldwork and subsequent analysis and writing up of results. Both AAA and JSAC make explicit mention of following CIfA guidance in archaeological fieldwork and reporting, but LAS does not make any reference to following any published guidelines in designing and executing their archaeological investigations.

Although both AAA and LAS usually included an acknowledgements section, who or what they acknowledged had very little overlap aside from universally thanking the client and quite frequently thanking the City of Lincoln Archaeologists. When the excavation team was acknowledged (which occurred in one third of the grey literature reports sampled here), the team invariably included the report author as was the case within the Lea Valley case study area. This is the only manner in which it was indicated if the report author had actually participated in fieldwork on the site and could support their analysis as written in the report with first hand observations. JSAC never included an acknowledgement section.

The length of the grey literature reports varied from 8 pages to 69 pages overall but the majority of the reports were between 20 and 45 pages in length. Although LAS had the shortest report, the rest of their reports were all over 35 pages in length, as were all the reports produced by JSAC. AAA tended to be more concise with many of their reports falling between 15 and 30 pages in length.

Comparing the grey literature reports produced in the same region but by three different commercial archaeological organisations illustrates that although these reports may initially appear to be quite similar as the producing organisations themselves may initially appear to be fairly homogenous, closer inspection reveals many differences between them. Many of these variations between individual reports appear to be consistent in terms of the report producing organisation which supports the idea raised previously that grey literature can be characterised by report producer. In addition, when these reports are viewed chronologically there is a clear link between substantial changes in the typical character of the grey literature report and also in the producing organisation such as when AAA began explicitly sharing OASIS references in their reports and including a QA section which coincided with Allen Archaeological Associates becoming Allen Archaeology Ltd.

### *Comparison Group Two: University of Manchester Archaeological Unit, Peak National Park Archaeology Section and Oxford Archaeology North*

These three organisations operate in different milieus and a comparison of the 33 grey literature reports they produce may reflect these differences. These organisations were amongst the few to operate within the western half of the mid-England transect case study area as opposed to the Lincolnshire region but the amount of grey literature reporting produced overall by each of these organisations is quite low and major infrastructure projects such as pipelines form the majority of development-led archaeological investigation which may impact the character of grey literature as a result. This is a very small sample group for comparison with only 33 reports.

Superficially this group of grey literature reporting appeared to share many characteristics with each other although interestingly they were immediately in contrast to the first comparison group summarized above. All of these reports were quite lengthy, running from 89 to 137 pages. Almost all of these reports were produced in the last years of the investigation time frame, from 2007 onwards. Rather than a simple typeset cover with perhaps a logo included as was the case with reports from the above comparison group, these reports all have full colour covers featuring large photographs as well as various logos. The QA standards on these reports were all much more rigorous with stages of report production, revision and issue all being noted, dated and signed for. It is not only the photographic plates which are in full colour but also all of the maps, figures and illustrations. These reports generally had a longer turnaround time of between one and two years between the initial archaeological investigation and the production of the associated grey literature report. This may be a result of the longer-term phased nature of archaeological investigations on long linear sites and so the longer lag-time between archaeological investigation and reporting may be linked to the type of investigation rather

than to any difficulties in producing a report, such as a lack of funds for post excavation assessment.

In general, this grouping of reports was fairly homogenous but had greater contrast when held against the grey literature reports discussed above in comparison group one. Some elements which are different such as the widespread use of colour throughout the grey literature may be a result of improving technology from 1990 to 2010 as these reports are almost uniformly of a later date than those found in the first comparison group. Other differences such as the greater length of the reports found in this comparison group may stem from a difference in the usual form or type of archaeological investigation being undertaken in the western half of the case study area as opposed to the eastern half; it appears that the majority of archaeological fieldwork investigations in the western half are connected to large linear infrastructure projects like motorway widening or pipeline assessments whereas the majority of archaeological fieldwork investigations in the eastern half appear to be connected to smaller individual developments.

### *Consistent Modes of Report Production*

Building on the findings of the Lea Valley case study, the observed character of the grey literature reports in the mid-England transect case study area as discussed above contribute towards identifiable and consistent modes of report production unique to each report producing organization. These modes are shown to change over time but aside from changes resulting from advances in computing and word processing technology the change is often abrupt and these abrupt changes can be linked to periods of substantial change and transition in the report producing organization itself.

Subtle indicators of underlying character of individual modes of grey literature reporting are also apparent. For instance, the practice of acknowledging the individuals who undertook the archaeological fieldwork invariably meaning that the author also

participated in the archaeological fieldwork; this is significant for the content of grey literature reporting as it means that the author has a personal observation of the archaeological investigation they are documenting. The length of each grey literature report may have more to do with the type of archaeological investigation being undertaken than the significance (or otherwise) of the resulting archaeology indicating the influence methodology has on the character of grey literature reporting.

In general, these identifiable modes of report production illuminate the character and primary purpose of the report producing organisation whether it is primarily a commercial contracting organisation specialising in development-led archaeology or a charity or publicly funded service dealing with archaeological investigation within the framework of a National Parks Authority. Although these modes of report production assist in recognizing and identifying the character of these report producing organisations, they do not necessarily reflect the relative merits of their presentation and assessment of the results of archaeological investigation. In order to explore this topic, it is necessary to examine grey literature more closely.

## 6.6 Evidence relating to human remains in grey literature

Whereas in the previous case study I chose to compare different grey literature reports created by different organizations dealing with the same site type, an Iron Age settlement, this proved to be very difficult to source within the mid-England transect case study area. I decided consequently to compare different grey literature reports created by different organizations dealing with a similar type of archaeological evidence instead. I chose to examine grey literature presenting burial evidence as a type of investigation with the potential to be found more than once across the case study area.

A search of the available grey literature revealed three sites with evidence associated with human remains. All three sites are located within Lincolnshire; one in Torksey near the

River Trent which was investigated by both LAS and then later on by Pre-Construct Archaeology (Lincoln) (PCAL) and two within the City of Lincoln both of which were investigated by the City of Lincoln Archaeological Unit (CLAU). This combination will allow for a comparison between organisations and also within the same organisation as they encounter similar archaeology on a different occasion.

The report produced by LAS is *Castle Farm, Torksey: Exploratory Excavations* which was released in 1990 and the report produced by PCAL is *Castle Farm, Torksey: An archaeological excavation report* created in March 1995. The two reports originated by CLAU are *The Sessions House, Monks Road, Lincoln: Archaeological watching brief* produced in 1999 and the *North Lincolnshire College (New Student Accommodation Blocks) Archaeological Watching Brief* produced in 1995. All four of these reports are from the earlier half of the overall time period of grey literature report production I am investigating (1990 to 2010). None of the later reports detailed any human remains amongst their results.

### *Comparing Form*

The distinctive covers of the CLAU reports with their line drawing illustration of the City of Lincoln and Lincoln Cathedral on a yellow background immediately differentiate them from the PCAL report which has a central colour photographic image of a pottery find from the site on the cover. The LAS report on the other hand is definitely showing its age as being from 1990, one of the earliest reports within my dataset, with its extremely basic format, layout and text.

The two CLAU reports in general appear to share the same mode of report production with many of the same characteristics such as the individual sections within the report being almost identical between the two. There are also some differences; the earlier report is presented in a two column per page layout while the later report has adopted the more

standard single page layout. The length of both reports is also notable for its variation, with the 1995 report being 16 pages and the 1999 report being 52 pages in total.

The LAS report is the earliest produced within this comparison group. At just 8 pages it is extremely brief and the complete text of the main body of the report is only two pages.

The PCAL report of their later archaeological investigation at the same site is 67 pages in comparison. The PCAL report is unique amongst this set of reports for including a separate section on the planning background to the investigation.

In general the reports produced by these three organisations demonstrate that despite the similar nature of at least one category of evidence recovered from each site each organisation has a very distinct mode of grey literature report production.

### *Comparing Methodology*

In order to better understand and contrast the discussion of the archaeological results in each report, it is necessary to examine the underlying methodology of the archaeological fieldwork investigations as described in each report. All four reports made some mention of the methodology they employed during the investigation and three of the four reports (with the exception of the LAS report) have a dedicated section detailing their archaeological strategy in greater depth.

The LAS report did not make any reference to any preliminary project design document or agreed specification for the investigation which may have contributed to their methodological approach, although the purpose of the investigation, “to establish the archaeological potential of the site” is clearly noted (LAS 1990, 2). In contrast the PCAL report explicitly references, “the archaeological requirement, as defined in a project brief issued by the County Archaeologist” (PCAL 1995, 6) when discussing their methodological design for fieldwork conducted at the same site several years later.

Similarly, both of the CLAU reports describe a mitigation strategy designed in tandem

with the client, explicitly referenced as, “pre-planning discussions” which contributed to the final agreed aims and objectives of the archaeological investigation (CLAU 1995, 2). Although none of these associated project design documents or briefs were included in the archaeological grey literature (for example, as an appendix) it is apparent that three of the four archaeological investigations were undertaken using methodology agreed through prior discussion with and approved by the relevant authorities and the exception, the LAS report, concerned fieldwork undertaken prior to the advent of PPG16 and a time when archaeological fieldwork was structured under different circumstances.

All four reports gave some explanation or justification for the siting of trenches and included a plan of the overall site area with areas of archaeological investigation clearly marked. The LAS trenches at the Torksey site were located in, “areas which gave high readings on the geophysical survey” (LAS 1990, 2), while the PCAL investigation at Torksey was instead designed around, “excavating areas vulnerable to destruction during development” (PCAL 1995, 4). There is no overlap between the areas uncovered during the archaeological evaluation in late 1989 by LAS and the subsequent excavation in late 1994 by PCAL which reflects the difference in methodology between focusing on areas with highest archaeological potential versus areas with highest potential for archaeological destruction. This reflects broader differences between the ethos of ‘Rescue Archaeology’ and ‘Preservation *in Situ*’. In contrast, both of the CLAU reports were actually designed as archaeological watching briefs which allowed for, “necessary archaeological investigation and/or excavation in order to secure a full record of deposits and remains” (CLAU 1999, 3). The methodology for monitoring and recording archaeology in both circumstances was agreed in advance of the works on site and relied upon a detailed understanding of the proposed development. The 1995 CLAU investigation at North Lincolnshire College, however, experienced many difficulties in executing their agreed methodology due to,

"unexpected changes to the agreed foundation design," (CLAU 1995, 2) and other significant variations to the proposed development scheme that was submitted as part of the planning application which led to significant areas of archaeological potential being excavated without proper archaeological monitoring. Although these alterations undoubtedly caused problems for CLAU's stated aim of preservation by record, the detailed description of how their agreed methodology was unable to account for these unscheduled and unannounced changes on site and what archaeology of significance might have been lost is very useful for those who will only know the site and its archaeology through reading this grey literature report.

The widespread tendency for specific techniques of excavation to be 'black-boxed' or elided in discussions of archaeological fieldwork (as discussed in Leighton 2015) was apparent to varying degrees in each of the four reports I examined here. Both of the CLAU reports give very little detail regarding the specific methodology employed on site. The 1999 CLAU report clearly discusses where, why and by whom particular trenches are excavated but they do not specify the equipment used (which was presumably initially using a JCB with archaeological recording then completed by hand):

> "Excavation, by the site contractor, of the foundation trench for the new 'inner' retaining wall, revealed no evidence for medieval occupation." (CLAU 1999, 7)

> "A small trench was excavated by the site contractor to investigate whether a suspected lowered footpath (thought to be infilled) was still present running north-south along the length of the main west wall to the former women's prison." (CLAU 1999, 8)

The earlier CLAU watching brief report from 1995 also only describes the method used to expose archaeological remains in terms of where, why and by whom rather than how:

> "Initial groundworks included demolition of the existing buildings, the removal of the concrete floor slab of the Plasterers shop and a general (unexpected) reduction of ground level by approximately 75 mm to create a platform from which mini-piles would be inserted and groundbeam trenches cut." (CLAU 1995, 3).

In contrast, both the PCAL and the LAS reports were much more specific regarding their excavation methodologies. The 1995 PCAL report gives details regarding their excavation methodology:

> "In advance of excavation, the site was marked-out by Mr P Manton. A JCB, fitted with a toothless ditching blade, was then used to remove level spits, no greater than 200mm in depth, to the top of the first significant archaeological or natural horizon." (PCAL 1995, 6)

PCAL also specifies the intended depth of excavation for the overall site, how the mechanical stripping would be undertaken, how specific artefacts would be recorded and what further methodology would apply once the on-site work was completed, such as presenting artefactual and ecofactual remains to relevant specialists for written assessment reports (PCAL 1995, 6).

Despite the overall brevity of the LAS report, they still manage to convey some detail regarding their methodological approach:

> "Trench I, which was dug by hand in the north-west corner of the site…" (LAS 1990, 1)
>
> "…a JCB was used to excavate the other three trenches." (LAS 1990, 1)

In discussing and comparing the methodology described within each of these grey literature reports, it is interesting to note whether or not any of these organizations specified their approach to the potential discovery of human remains on site considering all four of these investigations did uncover human remains during course of each

archaeological investigation. Although four burials were recorded in the LAS report as a result of the archaeological fieldwork no indication that they may have been anticipated was given and no description of any specific methodology employed in their excavation was noted. The later PCAL report described an archaeological investigation at the same site in Torksey and explicitly references the burials found on site in the earlier LAS investigation. Despite making it clear that, "the evaluation undertaken by Lindsey Archaeological Services established the presence of a Christian cemetery," (PCAL 1995, 4) no apparent methodology specific to and appropriate for the excavation and handling of human remains was explicitly stated within the report. The 1995 CLAU report also summarized an earlier archaeological evaluation which had apparently taken place on the site (a grey literature report not in this database) and noted that, "the finding of a single unstratified fragment of human bone raised the further possibility that the Roman and later burial grounds known to exist immediately south of the site might encroach into the development area" (CLAU 1995, 2). Again, despite being aware of the potential for human remains to be uncovered on site, no specific methodology for the excavation of human remains was described within the grey literature report. Finally, the 1999 CLAU report describes that, "the greater proportion of the site is protected under the Ancient Monuments and Archaeological Areas Act 1979 as County Monument No. 269, Lincoln Roman Cemetery, based on discoveries made of Roman funerary remains in the 19th century" (CLAU 1999, 2). Again, despite the fact that the site was specifically protected as an archaeological area Scheduled Monument because of the human remains from the Roman period uncovered in the previous century, no specific methodology was described for the handling and excavation of human remains.

### *Comparing Presentation of Archaeological Evidence*

All four reports contained a section where the results of the archaeological fieldwork investigations were presented, variously titled 'Excavations' (in the LAS report), 'Results' (in both the PCAL and the 1995 CLAU reports) and 'Analysis' in the 1999 CLAU report. The LAS report presents the archaeological evidence by trench. This style of discussion presents both the methodology behind the excavation at each location and the finds and features as encountered in each individual trench:

> "Trench II was dug in the south west corner of Grid 1. The overburden was even deeper at this point, being 1.50m in depth. Very few pottery sherds were recovered, all of which were Torksey Wares and no feature were recorded." (LAS 1990, 1)

The PCAL report of subsequent investigations at Torksey, on the other hand, organised the presentation of the results by evidential form. This distinctive method of presenting the archaeological evidence focuses on grouping the features and artefacts found into classes of evidence types. This is reflected by how the PCAL 'Results' section is subdivided into a number of headings: The kilns, the cemetery, post-medieval building remains, areas preserved *in situ* and other features. Each of these sections deals with a specific class of evidence where individual finds and artefacts were discussed holistically as a complete feature where their function, purpose and use over time were ascribed. The PCAL results section often incorporates separate evidence from various specialist analyses and also presents an on-site narrative where hypotheses are formulated and explored:

> "The oven of a further kiln was exposed…This was of a different character to other ovens and had been cut through three earlier phases of archaeology…Above the charcoal horizon were localised areas of eroded kiln lining and up to 16cm of what appeared to be compact, mottled degraded limestone…A sample was submitted for

> analysis, to test a suggestion made by the excavator that the kiln was used (or possibly re-used) to produce lime." (PCAL 1995, 14)

The 1995 CLAU report regarding excavations at North Lincolnshire College takes a similar approach to presenting the results by trench; in this case the site as a whole was arbitrarily divided into four areas, "for ease of recording" (CLAU 1995, 3) which then also structured the presentation of the results of the archaeological investigation. There was some attempt to link connecting features through several areas but features and artefacts were in general discussed in isolation:

> "Late Saxon deposits survived primarily in the south western part of the Area. They are represented by 305….a friable mid brown sandy silt containing occasional sherds of Late Saxon pottery, and a similar deposit….recorded in an adjacent trench. This material formed what appeared to be a homogeneous layer (also occurring within Areas 2 and 4) which can best be interpreted as a cultivated horizon following a period of abandonment of the site." (CLAU 1995, 4)

The 1999 CLAU report divides their discussion of the archaeological results by the phase of construction works rather than by trench or area or by archaeological findings. This report subdivides their analysis into categories such as 'enabling works', 'stairwell and lift pit' and 'women's prison area'. Effectively this approach ends up being similar to presenting the results by trench as each construction phase is treated as an independent unit in terms of the discussion:

> "Excavation to remove the diesel tank from the site uncovered deposits considered to be medieval in date. The earliest deposit recorded was [211] (18.88m OD), a substantial deposit of firm, mid brown clayey silty earth containing occasional small/medium-sized limestone fragments and charcoal flecks. Some bone and pottery was also present (the few sherds recovered were of 12$^{th}$ century

> date)….Again, later truncation had also removed the majority of this deposit." (CLAU 1999, 5).

The archaeological investigation associated with the PCAL grey literature report is the one, from its described methodology, that most closely resembles an open-area excavation; as such, it is not surprising that the results of this investigation were presented in a more holistic manner than the results of the other archaeological investigations where the presentation of the results were heavily structured by the investigative approach to the site. This structuring of evidential results by investigative approach may also have a further impact on the nature of the conclusions which will be explored in more detail below.

### *Comparing Specialist Reporting*

Another element of the grey literature reporting which may impact upon the effectiveness of the end product is the inclusion, nature and positioning of any associated specialist reporting. Only two of the four grey literature reports contain any specialist reporting, the 1995 PCAL report and the 1999 CLAU report, although the description of archaeological results in the other two reports imply some specialist input, for example, to establish the age and type of recovered pottery sherds. In terms of human remains, this category of find was treated significantly differently between each report. In all cases of known specialist reporting, the author of the main report was not the same as the authors of the specialist reports. However, four specialists contributed specialist reporting to both the PCAL and the 1999 CLAU report. Where it was explicitly stated, the specialist report authors were generally not employed by the archaeological organization responsible for the archaeological investigation and main grey literature report but were instead outside contractors.

Although the LAS report does not contain any explicitly identified specialist reporting, it does incorporate specialist knowledge within the report. A geophysical plot is attached as

a figure although without any linked explanatory text (LAS 1990, 3). The human remains were described in the main body of the text with only minimal use of specialist language such as, "the pelvis and left femur were articulated showing that the body was in situ" (LAS 1990, 1). No detailed specialist analysis of the composition and significance of the human remains such as age, sex or identifiable health issues was communicated.

The PCAL report concerning the same site at Torksey as the earlier LAS report contained four specialist reports presented as appendices to the main text: Post Roman Pottery, Environmental, Charcoal and Fired Clay and Slag. These four reports were all authored or co-authored by different individuals; there was no overlap between them. Despite the presence of human remains recovered from the site and even with forewarning of the potential for human remains on site on the basis of the results of the previous LAS evaluation, no human bone specialist analysis was conducted. Instead, the human bone was examined by the animal bone specialist as part of the environmental report. The human remains get only a brief mention in the text of this specialist report as part of the list of types of animal bones recovered from site, "These included cattle, horse, sheep, pig and human bones and a single find of goose" (PCAL 1995, Appendix 3). There was no attempt to discuss the analysis of the human remains and the author appears to perhaps find the evidence of goose bones on site to be of greater interest.

Despite the fact that the archaeological investigation at the North Lincolnshire College site produced 413 sherds of pottery as detailed in the archive contents, indicated that a sizeable amount of identifiable finds were produced, the 1995 CLAU report does not contain any specialist reporting at all. Specialist knowledge, however, is implicit throughout the report. For example, when pottery is described within the results section, it is invariably phased (i.e. as Late Saxon pottery). The human remains were only briefly described in the results section of the text as, "Roman deposits, including at least two burials, were located

a shallow depth during the excavation of groundbeam trenches…" (CLAU 1995, 3). In the archive deposition contents list there is no record of any other type of find or artefact type apart from pottery sherds being retained. It is unclear if the human remains were retained and there is no further detail on their age or sex.

The 1999 CLAU report does contain specialist reporting also in the form of separate appendices to the main text of the report and including the topics of Registered Finds and Bulk Materials, Building Materials, Roman Pottery, Human Remains and Post-Roman Pottery. Each specialist topic has a different author and consists of a small textual description and analysis and a table of the relevant finds catalogue. This was the only report to incorporate a dedicated section on the analysis of the human remains and includes details on the age, sex and pathological evidence of the collection.

I discussed earlier when examining the topic of specialist reporting within the Lea Valley case study area that the presence or absence of a particular type of specialist reporting is dependent on the presence or absence of whatever particular type of archaeological deposits or artefacts that were encountered so every report would have a different subset of associated specialist reporting (if any). However, all four of these reports definitely did encounter human remains as they themselves recorded but only one of the four reports made it explicitly clear that those human remains were analysed by a human remains specialist and included their specialist assessment of those remains. Of course, this does not rule out the possibility that the human remains described within the other three grey literature reports may have been assessed by a specialist and the results communicated orally to the author of the report but there is no explicit attribution and no details that a trained human bone specialist might be able to convey such as the sex of the deceased individual included in any of the other three reports which suggests that no human remains specialist was involved. Additionally, none of the four reports cited any special legislation

regarding the excavation of human remains or noted an application to the Home Office for the relevant permissions and licence and no specific methodology for the handling and recovery of human remains was included in these grey literature reports, despite the fact that human remains were anticipated on all of these sites prior to investigation.

Specialist reporting was only variably included in this collection of grey literature reports and even when it did form part of the overall report often certain relevant topics were clearly missing despite the fact that specialist input on that topic could be expected due to the results of the archaeological investigation (such as finding human remains on site). This may be due to budget constraints where certain specialists topics were then prioritized over others, a result of availability where certain specialists were more readily accessible than others or perhaps indicative of knowledge production networks where individuals specialising in a particular topic have stronger connections to particular site supervisors, project managers or organisations and are therefore more likely to be considered for inclusion.

### *Comparing Discussion and Conclusions*

The most valuable method to compare and contrast the merits of different approaches to the same form of archaeological evidence is by comparing and contrasting the different assessments of that form of archaeological evidence. It is necessary to examine the conclusions of all four of these grey literature results in order to determine if these reports are at all relatable despite being produced by different organisations. How did these sites handle human remains and what was their significance? How comparable are the archaeological results between these four different sites investigated at different points in time and by different groups of people under different conditions?

The conclusion of the LAS report summarizes the main findings of the evaluation trenches at Torksey and through the additional ‘Recommendations’ section also specifies the

significance of the results and potential for future archaeological investigations on the site. The burials on site are considered to be of great interest as they may indicate the location of a previously 'lost' parish church near to the site. The closing sentence of this reports states, "The extent of the cemetery needs to be determined and fuller investigation of the land adjacent to the main road is also desirable" (LAS 1990, 2).

The conclusion of the PCAL report includes a section summarizing the most significant finds as being both the kilns and the cemetery (PCAL 1995, 19). The majority of the one and half pages of text in the conclusion section then focuses on a discussion of both the kilns and the cemetery and an attempt to determine their relationship and contemporaneity (if any). Future recommendations are made to archaeologically monitor all future works within the immediate vicinity of the site in case questions relating to the understanding of the cemetery and its context may be answered with further investigation.

The 1995 CLAU report uses the conclusion section to detail the presumed sequence of occupation on the site and also to highlight problems encountered during the archaeological watching brief which may have resulted in the unrecorded destruction of archaeological deposits of unknown significance. The discussion then highlights the value of the watching brief with the, "closer definition of the limits of the previously recorded Roman cemetery" (CLAU 1995, 5) being noted as one of the biggest achievements of the archaeological investigation.

The conclusion section of the 1999 CLAU report first specifies that the management of the archaeological resource has minimized the impact of the development on buried archaeology. The findings of the archaeological investigation are then presented sequentially by time period, including acknowledgement of uncovering the truncated remains of a Roman burial. This conclusion section does not address the significance of

these finds nor does it position these results within the wider archaeological landscape of the immediate area.

Overall each of these conclusion sections share a section summarizing the results of the investigation and an acknowledgement of the significance of finding human remains but otherwise are very disparate in their approach. The LAS and the PCAL conclusion sections also attempt to place the results of the investigation in their regional context and also consider the wider ramifications of the archaeological investigation such as by making recommendations for any potential future archaeological investigations in the immediate vicinity.

### *Significance of detailed grey literature comparison*

When considering the results of this comparison of grey literature, it is interesting to note that although human remains were universally considered a significant result of each archaeological investigation as presented in their concluding summaries, none of these investigations appeared to make any special preparations for the potential of encountering human remains prior to the archaeological investigations although examination of these grey literature reports indicate that encountering human remains was not unexpected on any of these sites. Additionally, almost none of these grey literature reports showed evidence that the human remains recovered on site were analysed by an appropriate human remains specialist. Furthermore, no mention was made of the retention, preservation *in situ* or intended reburial of any of these human remains. Overall the consideration, management and associated reporting regarding human remains in all of these reports was lacking in rigour.

It is also interesting to consider the nature of all types of specialist reporting within archaeological grey literature. The analysis of pottery and CBM was shown to form the majority of the specialist reporting within the grey literature of the mid-England transect

case study area and this observation was further supported by the results of this closer examination of individual reports where pottery analysis also formed the majority of the attached specialist reporting. Other types of archaeological evidence, such as human remains, were clearly shown to not be accorded the same level of analysis and investigation. Is this focus on pottery a self-fulfilling prophecy? With the historic emphasis on pottery analysis as a typological, seriation-style approach to providing dating and phasing evidence for archaeological features, the role of pottery specialist has a lengthy background within field archaeology which may contribute towards a more widespread acceptance of pottery analysis being 'standard' for archaeological investigations. Although the examination of human remains by a properly qualified expert would quite literally expand our understanding of past human populations, this type of analysis does not contribute to the phasing of the site and therefore may not be prioritised when competing claims are made on a limited budget. This emphasis on pottery analysis creates an environment allowing for the greater employment of pottery specialists and which may also contribute to the greater support for their training and recruitment from the wider historic environment sector.

These grey literature reports illustrated a wide diversity in approach from whether or not a specification was agreed prior to the commencement of archaeological investigation on site to whether or not any recommendations for future archaeological investigations were made. Beyond the surface differences in the mode of grey literature reporting which were shown to exist between different organizations, this comparison also illustrates that the deeper content of each of these reports was shown to be substantially different as well. These differences in the process of interpretation and communication of the results of archaeological investigations illustrate once again that the creation of archaeological grey

literature is also dependent upon differences in the design and implementation of archaeological fieldwork.

Importantly, it was possible to identify broadly which reports had more (or less) reliable conclusions on the basis of only reading the grey literature report. For example, despite the lack of detailed conclusions in the 1995 CLAU grey literature report, the acknowledgement of the lack of communication between the developer and the archaeologists during the fieldwork investigation and the subsequent lack of archaeological oversight for a large portion of the development area allows the reader to put the communicated results into context and to understand that potential archaeological deposits were removed and destroyed forever without the mitigation of preservation by record.

This is linked to the fact that the relative robustness of the conclusions of each of these reports is not a consequence of whether or not the archaeology revealed was more or less significant but because the conclusions presented appeared more reliable. Providing information on the methodology, standards and guidance followed and the experience of the actual on-site investigation all contribute as much as the communication of the actual archaeological results in determining the usefulness of each grey literature report. Having a wider range of supporting evidence was also of use, showing that the value of grey literature reporting is directly connected to putting the archaeological fieldwork into the wider context.

In the Lea Valley case study, I concluded that the reports which presented the widest range of different contributing parts to the report (however this was measured) were the reports which were also more robust in their conclusions and therefore more useful overall to a hypothetical reader wishing to investigate whatever specific type of archaeology of interest

such as Iron Age settlement sites in the Lea Valley or burial sites in Lincolnshire. This has been shown to also be the case in the mid-England transect case study.

In the previous case study, I also encountered difficulties in finding comparable grey literature reports as a result of various types of meta-data and differing techniques of data tagging, filtering and organisation which continued to be the case in the mid-England transect case study area where this difficulty in finding a thematic link between unique grey literature reports resulted in concentrating on grey literature produced in Lincolnshire as this region had the highest concentration of grey literature and therefore allowed the greatest opportunity to examine grey literature reports with a comparable focus. It was incredibly difficult to extract a smaller sub-set of grey literature reports which had enough elements in common to make a useful comparison on the basis of their description within the grey literature library dataset. When looking for appropriate grey literature reports for detailed comparison purposes, I was unable to find more than one settlement site of any relevant time period and most grey literature reports from the western end of the case study area were so disparate that it proved very difficult to determine a useful linking device at all aside from the shared element of being the product of an archaeological investigation. This led in the end to the comparison of grey literature reports which were all indicated to have dealt with human remains. I do not believe this indicates an actual lack of past human settlement within the mid-England transect case study area (e.g. based on the large amount of data contained in the regional HERs) but rather the reluctance to conclusively identify fragmented and partial archaeological remains uncovered during the course of evaluation investigations as an identifiable 'settlement site'. Although the mid-England transect case study area quite definitely evidences features and finds from many time periods in the grey literature, this illustrates the difficulties of making wider analytical claims on the basis of disparate and fragmented data.

## 6.7 Conclusions

The examination of the grey literature of the mid-England transect case study area has provided the opportunity to gain a deeper understanding of the connection between archaeological investigation and grey literature reporting. This case study area covered a much broader geographical range than the Lea Valley case study area and allowed for the consideration of regional influence on the creation of archaeological grey literature. An examination of the spatial patterning and distribution of archaeological investigation and grey literature reporting gave further evidence of the relationship between development pressures and archaeological investigation in the period between 1990 and 2010. It also illustrated the influence of environmental affordance on the potential for archaeological investigation as shown for example by the lack of archaeological fieldwork investigation in the historically heavily wooded region of Sherwood Forest, Nottinghamshire. Spatial distribution was also shown in this case study area to be influenced by different modern-day practises of recording and data management which may, for example, give false impressions of relative density in archaeological investigation along the border of two different counties. Localism and regionalism were again clearly apparent within the case study area with all of the grey literature producing organisations operating within visibly defined territorial areas and almost universally employing regional signifiers in their organisational title such as Trent and Peak Archaeology. The examination of the archaeological investigations and grey literature reporting within comparable ten kilometre square sample areas illustrated widespread differences in data management and sharing practices and further emphasized the narrow regional concentration of the vast majority of organisations involved in the production of archaeological grey literature reporting. Closer examination of the character of grey literature reports produced by a number of different organizations showed that each organization had a recognizable mode of report production

which was further shown to also evolve over time. Finally, a detailed and in-depth comparison of the contents of four grey literature reports concerned with presenting the same type of archaeological evidence, human remains, clearly demonstrates that grey literature reports have varying levels of usefulness to broader archaeological understanding and that a number of factors contribute to this usefulness; the recognition of these factors in other reports may allow for the swifter identification of grey literature with greater potential for increasing archaeological understanding.

The investigation of the mid-England transect case study area has allowed for a greater exploration of how different locations contribute to differing regional characters of archaeological investigation and grey literature reporting and explored some of the ramifications of this regionality to the creation and understanding of the archaeological record. This case study area allowed for a deeper examination of differences in archaeological reporting and dissemination across a broad geographic area and added to a greater understanding of how investigation and reporting have changed over a twenty year time period. The broad range of this case study area has brought up issues of comparability and consistency in grey literature reporting across a broad area. With this in consideration, the next case study area will examine the nature of grey literature reporting in an area which is very different in the character of its landscape, archaeological investigation and reporting once again; the third case study area will comprise a much more compact region in the very north-east of Northumberland.

# 7 North Northumberland case study: Regional Reporting

## 7.1 Introduction

The focus of Chapter Seven is on exploring the influence of different archaeological organizations and wider connective networks of research and investigation across England. In this chapter I introduce the north Northumberland area in the north-east region of England and the reasons why it makes a particularly strong case study area to examine the influence and effect of different archaeological organizations and the methodologies they employ upon grey literature reporting. I then briefly characterize archaeological investigation and associated grey literature reporting as represented within this case study area between 1990 and 2010. I make a more detailed examination of archaeological practice and reporting using three 10 km square sample areas as a comparative basis. I investigate in detail the grey literature produced by different organizations operating across the case study area. I then discuss the results of an analysis of the efficacy of five different reports presenting the results of archaeological investigation at sites experiencing the same modern era development pressures, aggregate extraction quarry sites.

## 7.2 The north Northumberland case study area

The very rural area of north Northumberland is bordered by Scotland to the north west and the North Sea coast to the east (Figure 73). This is an area with both upland and lowland coastal topography and has a diverse range of archaeological remains. This case study area forms the smallest of my three case study areas.

### *Character and Form*

The case study area includes part of the Northumberland National Park encompassing the Cheviot Hills and characterised by moorland and riverine valleys dropping towards the exposed coastal plain and the Northumberland Coast Area of Outstanding Natural Beauty (AONB). Both the A1 and the A697 roads as well as the East Coast Mainline Railway run north to south across the study area and there are two relatively small population centres; Alnwick in the south-east of the case study area and Wooler towards the north-western portion of the case study area. The border settlement of Coldstream lies just outside the case study area to the north and the border between England and Scotland runs immediately to the north and west of the case study area.

The superficial and underlying geology of the study area is a combination of overlying deposits rich with the potential for archaeological remains and a complex underlying geology forming the basis of the Cheviots within the case study area (Figure 74). Superficial deposits of Alluvium, River Terrace Deposits and Glacial Sand and Till are widespread across the case study area with smaller areas of Peat in the Cheviot uplands; these are all deposits generally favourable for the preservation of past human activity. The underlying bedrock geology is mainly comprised of extrusive lava and tuff and intrusive igneous rock forming the upthrust of the Cheviots range and various softer sandstone formations of the Yoredale Group shelving towards the coast of England. Additionally some parts of the case study area are underlain by more of the Coal Measures Formation, similar to the mid-England transect case study area and indicative of a regional history of mining activity and disturbance of below-ground deposits.

### *Why the north Northumberland case study area?*

The analytical strength of the study area lies in the opportunity to examine an area that has a much lower overall rate of archaeological investigation and grey literature reporting over the two decades between 1990 and 2010. In general, this is an area with a much lower

level of development activity than found elsewhere in England and this appears to be reflected in a similar paucity of development-led archaeological investigation during this time period. When looking at the national distribution of active archaeological organizations within England it was apparent that almost none of the most active organizations within England overall conducted fieldwork investigations within this area; an investigation into which organizations actually do undertake fieldwork investigations and create grey literature reporting in this area forms another interesting reason to examine the case study area of north Northumberland more closely.

### *Archaeological framework of the north Northumberland area*

The political, legal and social framework through which archaeological fieldwork is generally conducted within the case study area is mainly organized at the county level or through the Northumberland National Park who have their own archaeological specialist to provide relevant planning advice and management services.

As Northumberland was created a Unitary Authority in 2009, all planning related roles are based with the County Council based in Morpeth which includes the Conservation Team and the Historic Environment Record officer. Prior to 2009 (covering the majority of the period under examination), Northumberland had a two-tier system with six local districts with their own local authorities which were Blyth Valley, Wansbeck, Castle Morpeth, Tynedale, Alnwick and Berwick-upon-Tweed.

Northumberland county council is responsible for the maintenance and updating of the Northumberland HER which is held at the County Hall in Morpeth and which has also been accessible online in an abridged form via the 'Keys to the Past' website since 2004. Further divisions of archaeological oversight and guidance within England are provided by the relevant Regional Research Frameworks; in this case the *North East Regional*

*Research Framework for the Historic Environment* was originally published in 2006 (NERRF 2006).

Additionally, Northumberland National Park has released their own strategy document for the management and understanding of the archaeological assets within the national park (Northumberland National Park 2015). Northumberland County Council also provide specific guidance on the management of the archaeological and palaeoenvironmental resources of the Till and Tweed Valleys in the form of the 'Planning for the future' guide and associated digital mapping, highlighting both the archaeological sensitivity of the area and recognizing the development pressures of the area.

## 7.3 Characterising fieldwork investigations and grey literature reporting in the north Northumberland case study area

Data relating to known archaeology within the case study area illustrates that the north Northumberland landscape is rich in known archaeological features and monuments but when data relating to the spread and density of archaeological excavation and grey literature are spatially mapped, there are very few records in the datasets (Figure 75). These record 17 unique archaeological organizations which have either undertaken archaeological investigation and/or produced grey literature reporting between 1990 and 2010 and which had results linked to the period between 1500 BC and AD 1086.

When these three datasets are compared it is apparent that not only does this case study area have far less data overall than the previous case study areas but that the Grey Literature Library has far fewer relevant records than either the Archaeological Investigations Project or the Excavation Index. It is likely that much of this disparity is due to the differential rates of data entry in the Grey Literature Library across the country; it takes time to upload and update older data into the OASIS system and this region is one

of the ones which was initially further down the list and which is now receiving more attention (Tim Evans ADS, Pers. Comm.). These datasets are further compared in greater detail below.

### *Spatial distribution*

The point pattern spatial distribution is clearly different for all three datasets (Figure 75) which is reflected when trend surfaces are created using the KDE tool in ArcGIS for each dataset across the study area which illustrate very different areas of concentration and absence of data between each dataset (Figure 76).

Although the GLL data indicates grey literature being produced in connection to sites only in the north of the case study area, both the AIP and the EI illustrate that the majority of archaeological investigation and reporting within the relevant time period has taken place in the south and west of the case study area. A large proportion of these sites fall within the Northumberland National Park and the lack of GLL data for the national park here follows a similar pattern to what was observed in the Mid-England Transect case study area and the Peak District National Park; there was a complete absence of data from the National Park in the grey literature library although both the AIP and the EI indicated that archaeological investigation and the creation of associated grey literature reporting was underway during the time period of 1990 to 2010. Both National Parks have their own separate archaeological planning advice teams which operate under similar overarching National Park guidance which may not explicitly require archaeological organizations to participate in the OASIS system and which would explain the lack of GLL data for these areas. It may also be an indication that more of the archaeological investigations undertaken within the National Park areas are driven by research and conservation and landscape management needs rather than by commercial development. This may reduce the amount of grey literature that is produced as a result because certain documents would

be published either as a formal publication or as part of a larger strategy document covering many subject areas where the archaeological content is not explicitly recognized; the grey literature report may not be as commonly expected an outputs of archaeological investigation for this sub-group as it generally is within commercial development-led archaeology.

Out of the three datasets, only the EI has a substantial number of records relating to sites along the coast which may have a similar explanation to the spatial distribution pattern apparent within the National Parks. The unique results from the EI may be a result of the Northumberland Coast AONB restricting the amount of development and therefore also restricting the amount of development led archaeology and grey literature reporting.

A concentration of data from all three datasets appears near Milfield and the associated Tarmac's Cheviot Quarry located to the north of Yeavering which has generated a concentration of archaeological investigation and reporting in the area especially regarding the potential location of the Anglo-Saxon settlement of Maelmin associated with nearby Yeavering Bell.

Overall, a combination of both landscape designations and development pressures have strongly contributed to the spatial distribution of archaeological investigation and reporting within the north Northumberland case study area from the overall lack of data in comparison to the rest of the country to the differences and similarities in distribution between each dataset.

### *Temporal distribution*

The temporal distribution of these three datasets within the case study area can also be compared (Figure 77). Although the volume of investigation and reporting between each dataset is very different over time and the spatial distribution (as has been shown above) is quite varied, they do share a common profile of highs and lows in archaeological

investigation and reporting over the twenty year time period from 1990 to 2010. All three datasets share a peak of reporting and investigation in the mid-nineties, at the turn of the century and in the mid-2000's. As has already been shown, planning application data for the same time period shows a similar pattern although with a slight chronological lead.

## 7.4 Sample Square Comparison

To attempt to explain these differences and in order to gain a more detailed understanding of the types of archaeological investigation and reporting taking place in the north Northumberland case study area, I made an in-depth study of three separate 10 km square areas, one on the coast, one in the comparatively more populated central region of the case study area and one within the Northumberland National Park (Figure 78).

These three sample areas show a wide variety in patterns of archaeological investigation and reporting (Figure 79). Overall the GLL contributes only a small percentage of the data on reporting within each sample square area; the majority of records are shown to come from either the AIP or the EI. Similar to the results obtained in earlier chapters, each of these 10 km squares had unique characters although all of the North Northumberland 10 km square sample areas share a distinctively low overall amount of recorded archaeological investigation and reporting (Figure 80).

### *Coastal Northumberland*

The coastal Northumberland 10 km square area incorporates part of the Northumberland Coast AONB, including Budle Bay and Budle Water, as well as the coastal settlement and castle at Bamburgh (Figure 81). The Budle Water is fed by the Ross Low from the north and Waren Burn from the south. The A1 and the east coast mainline railway run northwest to southeast across the sample area with the town of Belford located on the south side of the A1. The significant early medieval site of Lindisfarne Holy Island lies just outside the

10 km square area to the north. This landscape is largely rural and is not heavily populated.

As evidenced by the volume of HER data for the area, this is an area dense in archaeological evidence. There are a number of SM's within the 10 km square sample area which mainly consist of a number of Iron Age hillforts overlooking Budle Bay, while survey work undertaken in and around Bamburgh Castle and its associated landscape has also indicated a rich archaeological resource for the area.

Despite the large amount of HER data relating to the time period between the middle Bronze Age to the Domesday Survey, there is almost no related data from the AIP, EI or GLL. There are five records from the EI and two records from the GLL; all of these records are connected to investigations undertaken at Bamburgh Castle under the auspices of English Heritage.

Overall this 10 km square sample area illustrates the lack of data regarding archaeological investigation generally found within the north-east case study area. The only investigative fieldwork undertaken in this area was related to Bamburgh Castle and its environs and conducted primarily for research and heritage management purposes, rather than as a by-product of commercial development. However, a large proportion of this area is covered by the Northumberland Coast AONB; AONB impose greater scrutiny on proposed development projects which may limit the amount of development undertaken within the sample area.

### *Central Northumberland*

The central Northumberland 10 km square sample area is dominated by the valley of the River Till, fed by Lilburn Bank, Roddam Burn and the River Breamish near East Lilburn in the south of the sample area, and which runs towards the River Tweed far beyond the sample area to the north (Figure 82). The A697 runs diagonally south-east to north-west

across the southern half of the 10km square sample area and the Northumberland National Park just edges into the south-western edge of the sample area. This area is a sparsely populated agricultural and pastured landscape with some large scale aggregate extraction quarries to the south. To the east of the River Till the high ground is dominated by the 13th century Chillingham Castle, while the western half of the study area is also formed of higher ground separating Wooler Water and the settlement of Wooler (both just outside the sample area to the west) from the River Till valley.

Again, previously identified archaeology from the middle Bronze Age to the Early Medieval period is densely distributed across this sample square area. The Roman Road known as the Devil's Causeway runs north to south across the sample area. A large number of Iron Age or Roman hillforts and enclosures dominate the high ground of the 10 km square area and there are also many recorded prehistoric rock art sites, as well as cists, cairns and standing stones. Finds including worked flints, stone hammers and axes have been found across the sample area and a large number of circular and enclosure cropmarks have been identified.

Despite the large range of identified archaeological evidence, this 10 km square sample area has very little data from the AIP, EI or GLL datasets. There are three AIP, six EI and one GLL records in total which relate to a total of five distinct sites; an evaluation at West Horton, a survey at West Weetwood Moor, survey work undertaken at Chatton Environs as part of the Bournemouth University Rock Art Project, a survey undertaken at Chillingham Wild Cattle Park and several phases of archaeological investigation at Wooperton Quarry prior to aggregates extraction work. The archaeological investigations were undertaken for a variety of reasons; prior to development work, as part of a University directed research project, as part of the conservation management work required in a heritage landscape and in advance of large scale aggregates extraction work. Six unique

organisations contributed to the work undertaken within this sample square area but over fifty percent of the work was undertaken by either Headland Archaeology or Archaeological Research Services.

Overall this 10 km square sample area is densely populated with known archaeological evidence but experienced very little archaeological investigation or grey literature reporting relating to the middle Bronze Age to the Early Medieval period as recorded by the AIP, the EI or the GLL over the twenty year period between 1990 and 2010.

### *Northumberland National Park*

The final 10 km square sample area lies entirely within Northumberland National Park and the Cheviot Hills (Figure 83). The peaks of Comb Fell and Hedgehope Hill dominate the north of the sample area, while the peaks of Bloodybush Edge, Cushat Law, Shill Moor and Wether Cairn are located in the southern half of the sample area, divided by the valley of the River Breamish which runs west to east across the 10 km square; the peak of the Cheviot itself, the highest summit in the Cheviot Hills, lies just beyond the edge of the 10 km square sample area to the northwest, and a small segment of the Pennine Way National Trail leading to the summit falls within the northwest corner of the sample area. Part of Threestoneburn Wood is included in the north of the sample area, while a large portion of Kidland Forest lies within the southwestern corner of the sample area. The small settlement of Alnham is located in the southeast corner of the sample area, and is the only settlement within the 10 km square area. The Cheviot Hills are mainly peat covered, while the superficial geology of the haughs of the Breamish valley are alluvium with some glacial till; this area is unusual in England for the underlying geology formed of extrusive igneous rock.

This is a landscape with extensive evidence of past human activity. There is a dense distribution of previously identified known archaeological features and finds, including

prehistoric field systems, enclosures, burial cairns, Castle Hill univallate Iron Age hillfort, Romano-British homesteads and Early Medieval sheilings, which the Northumberland National Park website describes as, "one of the most important archaeological landscapes in England" (Northumberland National Park 2015).

However, continuing the common pattern found between each of the 10 km square sample areas within the Northumberland case study area, there is almost no data related to archaeological investigation and grey literature reporting within the three significant datasets of the AIP, the EI and the GLL. Only the AIP records any relevant records at all; two individual reports, one of which was produced by English Heritage in 2001 related to the SM of Castle Hill hillfort while the other was produced by Archaeological Research Services relating to a survey of a Bronze Age cairnfield, another SM. Similar to the results from the 10 km square that fell within the Northumberland Coast AONB, the only recorded archaeological investigations within this area were related to known archaeological remains with protected status (as SM's).

### *Sample Square Comparison Overview*

When the findings from examining each 10 km square sample area are considered collectively, the paucity of archaeological investigation and grey literature reporting recorded within each database across Northumberland is readily apparent. This is shown to be even more significant when other sources of grey literature reporting, such as physical copies held at the Northumberland HER are collected; it is apparent that grey literature and associated archaeological investigation is more widespread than might appear from a search of the digital holdings of the ADS for example. This has been acknowledged at many points throughout this presentation of my research, but the Northumberland sample square areas provide an excellent opportunity to discuss this in more detail.

For example, the final 10 km square sample area located within the Northumberland National Park had almost no data relating to archaeological investigation and grey literature reporting according to the AIP, EI and GLL datasets. However, this landscape has actually been intensively studied in the period between 1990 and 2010 and many grey literature reports relating to archaeological investigation in this area have been produced; for example, the vast amount of work recorded over a decade by the Breamish Valley Archaeology Project (Frodsham and Waddington 2004). Although available in hard copy form from the Northumberland HER offices, this report is not indexed in other grey literature datasets and is also not easily digitally available. An entry for the Breamish Valley Archaeology Project appears in the BIAB as an article summarizing the results of excavations from 1994 to 2002 published in The Archaeology in Northumberland National Park (Frodsham and Waddington 2004)[15] but many more detailed grey literature reports relating the results of archaeological investigation in the Breamish Valley were produced (i.e. Breamish Valley reports 1993, 1994, 1995, 1996, 1997, 1999, 2000 and 2004). In both case study areas where National Parks formed a substantial portion of the area under investigation (Northumberland National Park and the Peak District National Park), a distinct lack of recorded archaeological grey literature across several datasets was apparent but it is also clear that a lack of recorded grey literature reporting does not equal a complete absence of grey literature in itself; in fact, this research shows that large amounts of grey literature are available once further enquiries and alternate routes of investigation are made. Grey literature often lurks in repositories that require different techniques to access such as travelling in person to specific sites or by contacting helpful experts such as the Northumberland HER. Although many online initiatives such as the previously mentioned and award winning Northumberland Keys to the Past website provide excellent

[15] As shown by the entry in the BIAB, this is a formal publication summarizing previous grey literature reports, not an unpublished grey literature report in itself.

outreach of the results of archaeological investigation in summary form, it can be difficult to access the full grey literature reporting without directly contacting the HER or visiting in person.

A comparison of the grey literature report producers working within each of these sample areas also reveals some interesting patterns shared between each 10 km square sample areas and which contrasts with the findings from other 10 km square sample areas in other case study areas. The majority of archaeological investigation and reporting within each of these sample square areas was shared between three organizations only; Archaeological Research Services, University of Durham Archaeological Services and Headland Archaeology Ltd. Similar to other 10 km square sample areas examined as part of previous case studies, it was rare for individual grey literature report producers to be found in more than one 10 km square sample area and there were no grey literature report producing organizations identified as contributing in all three sample square areas. Overall, only two out of ten unique grey literature report producers were based in Northumberland (whether or not they were inside the actual north Northumberland case study area or not), with a further four based in neighbouring counties such as Tyne and Wear or Durham; However, the majority of archaeological investigation was actually conducted by organizations based far to the south of Northumberland, such as in London or Dorset. In contrast to the other case study areas, the Northumberland sample square areas illustrates a region where the majority of archaeological investigation has been undertaken by organizations based at a remove from the area of investigation.

Although much of the archaeological investigation in each sample square area was clearly generated as part of the development process, a comparatively large proportion of archaeological fieldwork was generated as a result of either a more research-led process, such as the Bournemouth University Rock Art Project, or as a requirement related to wider

heritage or landscape management processes rather than as a result of commercial development needs.

By examining the 10 km square sample areas, it was possible to identify patterns in archaeological investigation and reporting unique to Northumberland. There is a noticeable paucity of digital data for the region. In addition, much of the archaeological investigation in Northumberland appears to be undertaken for reasons unrelated to commercial development-led requirements and a large proportion of the investigative work is conducted by organizations not local to the county as a whole.

## 7.5 Report Producers and Grey Literature Character

In order to counteract the low amount of grey literature reporting available via the GLL for the north Northumberland case study area, additional reports collected from the Northumberland HER were examined in order to allow further comparisons between different grey literature report producers and to determine if there were any underlying differences between those producers whose reports had been digitized into the GLL and those producers whose reports were not easily accessible online.

Of those grey literature producers, only a very small selection produced multiple grey literature reports in the case study area and represented several different types of organizations, from commercial archaeological practices to HE itself in the form of the English Heritage Research Department. This case study area also produced a number of specialist grey literature report producers where the originating organization concentrated on one particular type of specialised fieldwork such as aerial photographic or geophysical survey.

Archaeological Research Services (ARS) is a commercial archaeological practice which was established in 1999 with several regional offices across England, mainly in the north, the closest to the case study area being their Newcastle office. They have approximately

21 employees as of 2015 (Archaeological Research Services 2015). They have been involved in a number of large scale projects within the case study area including excavations at Cheviot Quarry and survey work at Chillingham Wild Cattle Park. Archaeological Services University of Durham (ASUD) is embedded within Durham University's archaeology department. Although they are known for their specialist work in environmental archaeology and geophysical surveying, they provide a full suite of commercial archaeological services. Cambrian Archaeological Projects (CAP) was formed in 1992 and is based in Wales. Historically CAP has worked widely across England but currently focuses on ecclesiastical projects only. The research arm of English Heritage[16] commissions or carries out archaeological investigation for a wide variety of purposes across England.

The paucity of available grey literature from this case study area did allow for a complete review of all 14 grey literature records held within this case study area.

### *Comparison Group One: Archaeological Research Services, Archaeological Services University of Durham, Cambrian Archaeological Projects Ltd and English Heritage Research Department*

The grey literature reports held by the GLL for the north Northumberland case study area, although few in number, were drawn from a distinctively wide range of organisational types and also illustrate two organisations (ARS and ASUD) at various points over time. Similar to the previous comparison groups, these reports had a number of common structural elements that were easily identified; they all shared a typewritten, word processed format and were written in neutral, formal language. They were also all produced after 2004 and so fall into the latter part of the overall study period and this is reflected in the clear formatting and production quality provided by modern computing, especially of figures and photographs. It also became clear that these grey literature

[16] EH Research Department is now known as Historic England Research and maintains and adds to the research report series.

reports shared some characteristics which were not found in previous case study areas comparison groups and are perhaps regionally distinct. However, my examination revealed that these reports also had many individually unique characteristics that were not shared across the group and which reflected the underlying individuality of the producing organisations and the circumstances of the originating archaeological investigation.

All the reports, with one exception, had an identifiable cover and these covers all indicated the name of the report producing organization, the name of the site and its location, and the type of archaeological investigation undertaken while other information presented on the cover varied widely, such as including the names of authors, clients or the issue date of the report. Although the one report without a cover (the CAP report) is most likely missing it because it was not digitized with the rest of the report rather than being originally created without a cover, it is interesting to note that I was also unable to attribute this report to an acknowledged author, most likely because the only location in the report where that information was communicated was on the cover; the authors of all the other reports were clearly identified. Unlike previous comparison groups in other case study areas, the known authors here were all explicitly identified as part of the site investigation team, clearly linking authorship to fieldwork participation. The client, on the other hand, was only indicated on the cover for half of the reports; this is again in contrast to the findings in previous case study areas where the client name and even logo was more often prominently displayed on the cover plate.

All reports included an abstract which detailed both the location and the impetus for conducting the archaeological investigation; additional information contained within the summary section was more variable between reports. Only the EH report identified the authors in the summary and while the summary section of most reports referred, however briefly, to the archaeological results of the investigation, the CAP report was the sole

exception, describing the archaeological investigation conducted ("the excavation of 12 evaluation trenches", CAP 2006, 1) but without indicating the resultant findings within the introductory summary.

Only one report had a dedicated QA section, although more than one report indicated textually that the report had been reviewed before release. Although all reports indicated the site code for the associated fieldwork investigation, not all reports included a reference report number. ARS were more likely to give additional information such as planning reference numbers and naming the conservation team. All reports included the details of when fieldwork investigation started and stopped, but not all reports included a date of issue. Where the date of issue was included, it was possible to plot the lag between the completion of fieldwork and the release of the associated grey literature report; the longest recorded gap was two months.

The internal divisions of the reports in this comparison set, as indicated by their Table of Contents, had much in common; all shared a section describing the site and its topography, methods used during the archaeological investigation, the archaeological and historical background of the site, a clearly signposted conclusion or discussion section and a bibliography. Four of these reports also included at least one specialist report, all included in the main text of the report rather than as an appendix. Environmental and geophysical survey data were the most frequent type of specialist report to be included, followed by pottery and finds; these categories accounted for all specialist reporting. This is an entirely unique pattern in comparison with the other case study areas where pottery was always the most numerous type of specialist reporting. This preference for non-intrusive survey techniques is noticeable in the case study area as whole and can be considered as characteristic for the region; this trend is apparent even when considering the titles alone

of grey literature reports from the other datasets apart from the GLL (which often describe the type of archaeological investigation in the title).

None of the reports included a dedicated section detailing research frameworks, legislation or guidance but many of these reports did refer in various ways to these elements. Unique to the north-east, almost all of the reports reviewed included a reference to a specification or brief of works and many reports included the actual document specification of works as an appendix. Two of the reports, by ASUD and EH, explicitly refer to undertaking the fieldwork investigation in accordance with archaeological standard and guidance despite the fact that neither of these reports has been undertaken within a development-led context. Both ARS and ASUD reports refer to the regional research framework, while another ASUD report is missing reference to standards, guidance or the regional research framework but does specify that the archaeological investigation is being conducted in accordance with an agreed method statement. In general, this selection of grey literature reports was far more likely to refer to research frameworks, guidance documents and various forms of project design briefs and external oversight of project design than was found in other case study areas.

Only half of these reports included an acknowledgement section, but those that did (ARS, CAP and EH reports) universally acknowledged the excavator(s), and most additionally identified the project officer(s) and site supervisor(s). The client was only acknowledged twice, while the landowner and the County Archaeologists were both acknowledged once. This trend for identifying and explicitly thanking the field archaeology team over other actors within those contributing to the archaeological investigation and production of the grey literature report forms part of the larger trend identified in the north Northumberland case study area as whole for foregrounding the archaeological fieldwork in the midst of other contributing elements within the lifecycle of the associated project as a whole.

The length of these reports varied from 12 to 119 pages, with the majority being between 15 to 40 pages (Figure 84). The lengthier reports were both associated with archaeological investigations that were not conducted within the context of development-led archaeology but were instead archaeological surveys instigated primarily for conservation purposes. Comparing the grey literature reports produced by different organisations illustrated some interesting differences between particular groups but was more useful in illustrating similarities common to the north Northumberland case study area as opposed to the previous two case study areas. There was a marked increase in the number of non-intrusive survey projects as a proportion of archaeological investigation and for projects to cover a larger geographical territory. There was also an increased tendency to acknowledge those conducting the fieldwork, to link authorship to fieldwork participation and to explicitly share written specifications for fieldwork design, often linked to research framework objectives. Conversely the commissioning client was indicated far less prominently unlike what has been found in the previous two case study areas.

### *Comparison Group Two: Clive Waddington and the Archaeological Practice, Alison Deegan, Geoquest Associates and Oxford Archaeotechnics*

These reports range in date between 1994 and 2005 and all share the same general characteristics which are apparently common to most if not all grey literature reporting; they are word processed documents written in formal neutral language. Additionally, they each have a cover page, table of contents and summary section and they all have a section for results and for references or a bibliography. Beyond that, they are again variable, ranging in length from 13 to 55 pages, with different internal design and presentation of fieldwork data, depth of discussion and analysis.

Although, similar to the comparison group above, each cover included the name of the originating report producer, the name and location of the site and the type of archaeological investigation undertaken, they all also included the name of the

commissioning organization as well. Again, the report authors were all explicitly noted as forming part of the field team and other members of the fieldwork team were often also individually named.

Each report included a summary abstract which described the archaeological results of the fieldwork but, unusually, this group of reports often also included a brief justification of the chosen archaeological approach (i.e. the benefits of geophysical survey and trial trench evaluation) and a small explanation or description of the chosen archaeological method. This may be related to the large amount of reports in this comparison group detailing the results of geophysical survey, which may require more explanation for a non-geophysical survey specialist, rather than archaeological trial trench evaluation or open-area excavation. This ratio of survey to intrusive investigation is in itself unusual in contrast to the other comparison groups I have examined.

None of these reports included a dedicated QA section and were also all lacking cross-referential information such as site codes and the dates of the associated fieldwork although most indicated the date the report was released. The lack of dates provided made it impossible to plot the lag between fieldwork and report production within this comparison group. Uniquely, all of these reports included a copyright notice (i.e. "this work is the copyright of the author") while TAP reports went one step further by including a Publicity, Confidentiality and Copyright notice as well as a Statement of Indemnity. Although all of these reports shared an Introduction, Methodology, Results, Conclusions and Recommendations, and References sections, only TAP included a section for the archaeological and historical background of the site. Interestingly, all conclusion sections from these reports were titled 'Conclusions *and Recommendations*', indicating that each of these grey literature reports was explicitly making recommendations for further action in addition to summarizing archaeological results.

Given that the report producers in this comparison group include two organisations which specialise in geophysical survey and one which delivers aerial photograph interpretation, it is unsurprising that the majority of the reports in this comparison group could be considered specialist grey literature in and of themselves and certainly this matches the trend identified earlier that non-intrusive survey techniques are noticeably more widespread in the north Northumberland case study area. However, along with the TAP reports which included a variety of specialist reporting both within the text and included as an appendix, both OAT and GQA reports included additional specialist reporting (usually on pottery) to support the findings of the geophysical fieldwork investigation. Overall the TAP reports had the widest range of additional specialist reporting, including archaeobotany and radiocarbon dating results.

None of the reports referenced research frameworks or legislation, although many referenced a specification or brief of works. TAP reports included an Objectives section which detailed the intended research focus of the work. Both the OAT and GQA reports detail the method they employed for geophysical survey but neither refers to any published standard or guidance on conducting archaeological geophysical survey.

All of the TAP, OAT and GQA reports included an acknowledgements section, all of which clearly identified the participants in the fieldwork. In addition, TAP also thanked landowners and grant providers in their acknowledgement section.

Overall, the OAT and GQA reports appeared fairly similar in this analysis, while the TAP grey literature and the AD grey literature had more individual differences. This supports the observation that the technique of archaeological investigation employed (aerial photographic mapping, open area excavation or geophysical survey) may have a greater influence on the form and structure of the resultant grey literature report than previously expected. However, similar to the first comparison group examined, above, this

comparison group revealed far more similarities than differences and, further, many of these shared similarities were in contrast to the results of the comparison groups in my previous case study areas. Archaeological fieldwork was much more likely to take the form of non-intrusive survey and project areas tended to be geographically large. Those participating in the fieldwork were usually acknowledged and authors were explicitly named as part of the fieldwork team.

### *Consistent Modes of Report Production*

Taken together, the observed factors begin to identify consistent modes of report production unique to each report producing organization as well as an overall mode of report production that may be unique to the case study area itself. Not only do the individual report producers appear to express distinct identifiable mannerisms but, as became visible in the mid-England transect case study, the nature of the archaeological investigation undertaken appears to also contribute towards a distinct typology of reporting.

The modality of report production is here shown to be formed through a number of factors; the character and primary purpose of the report producing organisation (i.e., a commercial contracting organisation, part of a university department, a governmental organisation), the type of archaeological investigation undertaken (i.e., geophysical survey or open area excavation) and, as is becoming more clear, the broader regional location of the archaeological site. Many of the characteristics examined here were shared between the grey literature reports within the comparison groups but were in contrast with the characteristics identified in the other case study areas. This may be a result of the comparatively larger number of survey based archaeological investigations within the north Northumberland case study area influencing the apparent overall character of grey literature from this case study area.

## 7.6 Archaeological investigations at quarry sites in grey literature

In the process of examining and comparing in detail the content of grey literature reports in previous case study areas, I chose to first examine grey literature reports from different producers which dealt with the same archaeological site type (an Iron Age settlement site). Secondly, I then chose to examine grey literature reports from different producers which dealt with the same evidence type (human remains). In this final case study area, I have chosen to examine different grey literature reports produced in response to the same development pressure; quarry sites for aggregate extraction.

Whereas in my previous case study areas, I was interested in trying to control for potential variation between grey literature reports through selecting reports dealing with similar subject matter, I have found the influence of the type of archaeological investigation on grey literature to be intriguing. I considered that the original impetus for the archaeological investigation might influence the character of the resultant grey literature report and the frequency of archaeological excavation at quarry sites in the north Northumberland case study area provided an excellent opportunity.

One of the most immediate characteristics of grey literature produced as a result of quarrying activity was the seasonal/repeatable nature of the grey literature reports. Grey literature reports produced as a result of quarrying activity are usually part of a series, as new areas of the quarry are opened up each year and archaeological investigation is undertaken in advance of quarrying works in each new area. These types of archaeological investigation allow for a thorough investigation of a larger landscape over time, as each additional year of archaeological investigation adds another section to the overall area.

I chose to examine the reports associated with Lanton Quarry, Northumberland. Lanton Quarry is a sand and gravel site operated by Tarmac Ltd, which was granted permission to dry work sand and gravel extraction in 2004. The sand and gravel reserve at Lanton is of

high quality and is used in the local construction industry. Archaeological grey literature reports detailing the results of fieldwork investigations at Lanton Quarry were produced by Archaeological Research Services in 2007 and 2009; *Archaeological Excavations at Lanton Quarry, Northumberland (ARS 2007)* and *Lanton Quarry, Northumberland: Report on an archaeological excavation (ARS 2009)*. I also chose to examine the reports associated with Wooperton Quarry. Wooperton Quarry is a sand and gravel site originally extracted by Northern Aggregates Ltd but which is now owned by Cemex and is currently inactive. Archaeological grey literature reports detailing the results of fieldwork investigations at Wooperton Quarry were produced by Headland Archaeology in 1997 and 2004; *Wooperton Gravel Quarry Phase 1 Second Strip Assessment Report (HA 1997)* and *Wooperton Quarry: Phase 2 Second Strip Assessment Report (HA 2004)*. Additionally, a geophysical survey grey literature report on Wooperton Quarry was produced by Oxford Archaeotechnics in 1994; *Land at Wooperton, Northumberland: Topsoil Magnetic Susceptibility, Gradiometer Survey, and Trial Trenching (OAT 1994)*.

These are only a selection of the total archaeological grey literature reports associated with these two sites but this selection enables a useful comparison of each site over time using the same report producer at each site. The benefit of contrasting several reports in a series produced in association with fieldwork investigation taken at two different quarry sites is the ability to contrast both changes in report production at the same site and to compare reports produced in association with different sites.

### *Comparing Form*

Both grey literature reports associated with Lanton Quarry share the same distinctive cover layout, with right-aligned text and a full colour photograph; the photograph on the 2007 report is captioned as an “Early medieval settlement after excavation” while the 2009 cover image is unascribed. In contrast, the grey literature reports associated with

Wooperton Quarry each have very individualistic covers; even the two reports produced by Headland Archaeology have quite different cover layouts (despite the Headland Archaeology logo remaining unchanged) but considering there is a seven year gap between these two reports, it is unsurprising that the mode of cover design has changed in the intervening time. All reports share the same word processed layout using colour throughout, especially within maps and figures, with even the earliest report (the OAT 1994 geophysical survey report) including high quality digitized and computer processed figures and plots.

Both the HA and the ARS reports for each quarry site were internally very consistent, with almost identical internal report divisions in the grey literature produced by the same organisation, although there were many differences between the grey literature reports for Wooperton Quarry and Lanton Quarry respectively. The OAT report was structurally unique among this group of reports with distinctive sections presenting the technological and methodological approach. Both ARS reports included a section for 'Publicity, Confidentiality and Copyright' as well as a 'Statement of Indemnity' which was identified as a unique ARS grey literature characteristic above, and which were not present within the OAT report.

All of these reports were on lengthier side of the average north Northumberland grey literature report with all but one report being 40 pages in length at minimum and the longest report, the ARS 2007 report, being 292 pages in total.

The ARS 2009 report included an unusually titled section, 'Section 6 Stratigraphic Report' (ARS 2009, 10), but which in content appeared to be similar to the ARS 2007 report sections presenting results divided by time period (i.e. 'Section 6 Neolithic Period' ARS 2007, 21). Both HA grey literature reports included a section on 'Storage and Curation' which explicitly detailed the agreed approach to the storage and curation of artefacts

recovered from site. The OAT report was a more technically specific grey literature report, with sections detailing the methodological approach taken to geophysical survey and the results, but without any detail on the archaeological or historic background of the site.

### *Comparing Methodology*

An examination of the methodological approach to the archaeological investigation that forms the basis of the grey literature report is necessary when considering the comparative usefulness of each grey literature report. Attention to both the content and the description of each approach is necessary to determine if enough useful detail regarding the conditions of work and the method employed are presented to the reader to make an informed decision regarding the archaeological results of that methodological approach.

Within this group of grey literature reports, the length of each methodology section varied widely, as did the level of specificity regarding approach. Although each of the ARS and HA reports all specified an identical approach to the initial topsoil stripping, detailing the machinery used and the method for marking out observed features, only the ARS reports included additional detail regarding the underlying causes for the changes in visibility of archaeological features and which explained the methods taken to address these changes:

> "The dry conditions which prevailed through most of the field work resulted in sediments drying out quickly, which necessitated their immediate marking so they could be detected later. As the sediments dried out additional features became visible that were not evident immediately after stripping. The ideal time for identifying features was around two weeks after the surface had been stripped and cleaned." (ARS 2007, 13)

Overall, the HA reports were far more concise in presenting their methodological approach to the archaeological fieldwork, taking only one short paragraph to describe while ARS took four or five longer paragraphs to detail their approach. However, the HA reports, unlike the ARS reports, also included a reference to a project design specification

approved by Northumberland County Council which presumably contained more methodological specifics.

The OAT report was unique in taking over three pages to describe the methodology used in their magnetic survey design and went beyond merely detailing how the data was collected by also including detail on the methodology employed for the data storage, processing and presentation all of which could be significant to the final interpretation of the results.

Generally there was no apparent difference in the methodological approach between the earlier and later reports associated with the same site and those sections appeared almost word for word identical, although the HA 2004 report did reference both the earlier project design specification and the more recent one generated for the current 2004 phase of work as framing their current approach. Even the more minimal descriptions of methodological approach allowed the reader to understand how the fieldwork investigations were conducted.

### *Comparing Presentation of Archaeological Evidence*

One of the more unique aspects to archaeological investigations conducted in association with a working quarry site are both the size of the area under investigation in one phase and also the ability to add the results of earlier phases which took place in the adjacent areas; it was interesting to review how that impacted the presentation of the archaeological findings. All of these reports included a section which presented the results of the archaeological investigation, titled variously *results* or *stratigraphic report*.

Both the HA reports and the ARS reports started their presentation of the results of the archaeological investigation with a brief summary of the overall findings at the start of the section. The introductory summary section of both HA reports was extremely brief, and included a list of features identified (i.e., pits and ditches), while the comparable summary

section for both ARS reports was at least a page in length and also divided features into chronological groups or natural (versus human-made) features. The OAT report, conversely, began the presentation of the results with more detailed comments on the approach taken and its impact on the results presented:

> "Susceptibility is reported in SI:volume susceptibility units (x $10^{-5}$), a dimensionless measure of the relative ease with which a sample can be magnetized in a given magnetic field: the lack of dimensions (a common situation in physical science) is an algebraic artefact (the actual units of measurement cancelling each other out in the formula for volume susceptibility) and in no way indicates subjectivity or lack of precision in the result." (OAT 1994, 10).

Beyond the introduction to the results section of each report, the OAT report continues to be the outlier in terms of structure within this comparison group. The OAT report divides its results section into categories based on the investigative technique employed so that it is sub-divided into three sections: topsoil magnetic susceptibility survey, magnetometer (gradiometer) survey, and exploratory trenching and surface observations. The HA reports present their results by groups of features within sub-divisions of the overall area (i.e., the north area) while both of the ARS reports present their results in terms of groups of features in chronological order (i.e., Neolithic to Early Medieval, with a section for features of unknown date).

The HA reports both identify clusters of features observed on the site and relate them to other observed features and known archaeology from the wider landscape, such as comparative alignments with the Devil's Causeway (a Roman road in the immediate area). Features are given their context number reference and then described narratively. A common issue between reports was the lack of dateable evidence in discrete clusters of features making it difficult to determine the relative or absolute age or function of different pit and posthole clusters which also makes it effectively impossible to present the results in chronological phasing; this is a frequent concern with strip map sample excavations where

there is a lack of horizontal stratigraphy present on the site and is not a fault of those reporting. The HA reports also include a summary of results section which briefly reviews the evidence presented but also explicitly refers to the aims and objectives of the project design brief and considers what and how they have been achieved.

In contrast, after the introductory summary of the results, the ARS reports both then describe the level of previous truncation on each site, including the location of modern disturbances, and then present observations on the topsoil layer and the underlying fluvio-glacial deposits. The archaeological features and finds are then discussed in chronological order starting with the Mesolithic period. Results are narratively described, as was the case with both of the HA reports, but are also presented in a table for each time period division, using the following categories: Context, Number, Description, Max Dimensions (m.), Max depth, Colour of fill, Texture of fill, Small Finds, and Provisional Date /$^{14}$ C Dates bp (uncal.). Alongside the narrative and tabular presentation of results, the ARS reports also included photographs of the relevant features and also plans and sections within the main body of text. In the ARS 2007 report this section is 135 pages of the entire report and includes 102 of the total 106 figures (including all photographic plates) and eight of the total of 13 tables, making up a significant proportion of the entire report; this section of the ARS 2009 report was similarly proportionately large in comparison to both the overall report and in comparison to the length of the results sections of both of the HA grey literature reports and the OAT report.

Rather than taking an area based or chronological approach to the presentation of the results of the archaeological investigations, the OAT report presents its results as situated within a theoretical framework (i.e., how the magnetic variability of the underlying geology might influence the results) and also as fitting within a wider supporting archaeological investigation including, “aerial photographic cropmark evidence and

demonstrable archaeological material confirmed by trial trenching." (OAT 1994, 11-12). The results are plotted on a series of figures and the plots are then discussed in more detail. Although all of these reports incorporate evidence relating to finds of pottery, charcoal or other specialist topics within the main body of text relating to individual features, both the HA reports and the ARS reports include specific specialist reporting as separate sections after the results section (which will be discussed further below).

While all four of the HA reports and the ARS reports have clear structural similarities in their presentation of archaeological evidence, this comparison reveals they clearly demonstrate a distinct mode of presentation which differentiates the HA reports from the ARS reports. Although the nature of the archaeological evidence uncovered was overall very similar, consisting of alignments of pits and ditches over a broad landscape area, and mainly dated from the later prehistoric to early medieval periods, that evidence was actually presented in a different manner between each organization. The OAT report, on the other hand, is very distinct from the other four reports dealing with large open area excavations. Clearly for this report, the defining element for the structuring and presentation of the results of the investigation is by the methodological technique applied. The results in the OAT report are generally divided into observations of archaeological and non-archaeological features and are concerned with the density versus sparseness of features, rather than a chronological breakdown. This reflects a method of archaeological investigation which is concerned with presence/absence of archaeological features but which cannot provide dating evidence, either absolute or by seriation but instead only possibly inferred by form observed in plan.

### *Comparing Specialist Reporting*

As has been previously demonstrated in earlier case study areas, the inclusion, nature and positioning of any associated specialist reporting also has an influence on the presentation

and understanding of fieldwork results. All of the grey literature reports being examining here included reference to specialist reporting for specific classes of archaeological evidence.

Both HA reports include a brief summary of the artefact and environmental records for each phase of site, along with the full text of the specialist reporting included as appendices at the end of the main text of the grey literature report. Both ARS reports have incorporated the results of the specialist reporting into the main body of their results text, although the separate specialist reporting is also included as appendices at the end of the main text of the grey literature report. The OAT report could be considered a specialist report in its own right but also incorporates the results of other specialist reporting, such as analysis of the pottery finds, both within the main body of the text, but also in full as appendices at the end of the report.

Both HA reports had similar topics of specialist reporting including the flotation of environmental samples and roman pottery; the HA 2004 report also included an assessment of prehistoric pottery. In contrast, the ARS reports had a far larger range of specialist reporting and no overlap in specialist reporting topics between what was included in the main 2007 and 2009 grey literature reports at all. The ARS 2007 report had appendices for specialist topics in a wide range; environmental samples, vertebrates, lithics, coarse stone, prehistoric ceramics, anglo-saxon pottery, anglo-saxon fired and unfired clay objects, conservation assessment and X-radiography of materials and soil samples. The ARS 2009 report, unlike the ARS 2007 report, included all of its specialist reporting as separate sections in the main body of the report, with only one appendix of supporting data tables for the plant macrofossil analysis included separately at the end of the report. The specialist topics included in the main text or as an attached appendix by the ARS 2009 report were completely different than those of the ARS 2007 report and

included human remains, radiocarbon dating and plant macrofossil analysis, pollen and charcoal assessment. The OAT 1994 report included one specialist report as an appendix, regarding pottery.

Interestingly, a completely separate grey literature report, *Lanton Quarry Northumberland: Specialist reporting on artefacts and ecofacts* (ARS Jan 2009), included the other 'missing' categories of specialist reporting, the same as those that were covered in ARS 2007. This additional 129 page grey literature report certainly adds to the analysis of the Lanton Quarry site investigations of December 2008 to February 2009 which form the basis for the ARS 2009 report but, despite an earlier 2009 release date than the main grey literature report for the site, this specialist document is not explicitly referenced in ARS 2009; it is not referred to in the main body of text and it does not appear in the list of references at the end of the report. Although some of the conclusions and observations found in the ARS Jan 2009 grey literature report of specialist studies may have found their way into the interpretation of the excavation results in the ARS 2009 grey literature document, without an explicit link it is difficult to tell and a reader who was unaware of the existence of the ARS Jan 2009 specialist document would continue to be ignorant on the basis of only having the ARS 2009 document to review.

Most of these specialist reports acknowledged the individual authors although some credited an entire organization for the authorship of the relevant section, such as the Scottish Universities Environmental Research Centre (SUERC) which contributed the radiocarbon dating section of the ARS 2009 report. There was also some overlap between the specialist report contributors between different grey literature reports from the same organisation but not generally between reports produced by different organizations with the exception of the OAT 1994 pottery report which had the same author as the ARS 2007 prehistoric ceramics report; however, both the OAT 1994 report and the ARS 2007 report

dealt with archaeological investigations at Wooperton Quarry so continuity between specialist contributors is perhaps unsurprising.

Generally all of these specialist reports followed their own individual formats for the presentation and discussion of their methodologies and results, with the exception of the ARS 2007 grey literature report. Here, each individual specialist report in the appendices following the exact same structural format and headings, lending a uniformity to the individual reports which was much more cohesive than the more usual approach of complete individuality for each type of specialist reporting. This indicates a level of editorial control unusual within grey literature reporting as observed so far during my research.

A further contrast between the HA and the ARS specialist reporting was that almost all of the HA specialist reporting was produced by in-house specialists employed by HA, in contrast to the ARS specialist reporting which was produced by a wide variety of contributors, including other commercial consultancy groups, a variety of university departments and research centres and included individuals based as far afield as, for example, London. Despite the wide ranging locations of the producers of the source material, overall the specialist findings appeared to be better integrated into the presentation and analysis of the results of the archaeological investigations reported by ARS than was the case with the HA reports.

### *Comparing Discussions and Conclusions*

In place of a discussion or conclusion section, the HA reports both had a section titled Statement of Potential. This section was used to summarize the significant archaeological results and recommendations for future action to be taken and so despite the unusual title, this section essentially fulfils the same function as a discussion or conclusion section.

Both HA reports made recommendations regarding the Roman pottery collection

recovered from the site, considering it is of national significance and should be published in full, while the rest of the results of the archaeological investigation merited publication in an appropriate regional or specialist journal. As a follow up, I investigated whether or not these recommendations were carried out. Although the Roman pottery collection does not appear to have been published in full as of yet, summaries of the results of the archaeological investigation were published as suggested. For example, a note appears in the peer-reviewed Brittania journal regarding the fieldwork at Wooperton as part of the roundup of Roman sites explored in Britain in 1998 (although this phase of the site was actually investigated in 1997):

> "Wooperton, Wooperton Quarry (NY 049 204): excavation between a pit alignment and the line of the Devil's Causeway Roman road revealed a complex area of rectilinear ditches/gullies, post-holes, and pits containing pottery (including samian and Dressel 20 amphorae) predominately of Flavian date. There were pits along the presumed line of the road." (Keppie et all 1999, 334).

The conclusions section of the 1994 OAT report for the same site discusses each area of identified archaeological potential and clarifies the specific significance of each observed feature. I have found this to be typical for a conclusions section in the majority of grey literature reports; there was no difference in the mode of discussion shown here between reports presenting the results of intrusive versus non-intrusive investigations. A summary figure indicating an overview of the field survey results is also referenced in the OAT 1994 conclusions section. Interestingly, this section states that, "no trace of a feature which might have been associated with a Roman road was observed" (OAT 1994, 25) and this question regarding the exact location of the Devil's Causeway Roman road becomes a theme repeated in later investigation at the same site. The later HA reports of archaeological investigation at Wooperton often reference ditches and pit alignments that appear to be in parallel to the assumed alignment of the Roman road but without being able to confirm the exact location of this road within the confines of the site area.

In contrast, the ARS reports both include a separate section titled *Discussion* which reviews and summarizes the evidence presented earlier in the report. It discusses the archaeological findings with reference to discoveries made at neighbouring sites and draws together a narrative highlighting the key discoveries, such as the early medieval industrial site and its significant location between the royal sites of Maelmin and Yeavering (ARS 2007, 149). In addition, the discussion section of the ARS 2007 report includes a number of comparative tables and plans which illustrated the presented conclusions but these comparative illustrations do not appear in the ARS 2009 report.

The presented interpretation of the archaeological evidence was clearly stated for all five grey literature reports considered here, despite some variation in the exact mode of presentation. Summary figures or tables were only occasionally inserted into the conclusions section but when they were, they contributed to effective communication of the discussion. The opportunity to draw on findings from earlier investigations at both Lanton and Wooperton Quarry strengthened the conclusions presented in the later grey literature reports where connections between archaeology observed in the most recent phase to archaeology observed in earlier phases could be made. Landscape scale features, such as boundary enclosures and complex pit alignments, were discussed with reference to their appearance of continuation into or being parallel to features that were visible within previous areas of archaeological investigation. However, previous analysis and interpretation of features was not explicitly revisited or reinterpreted at any point; conclusions drawn in earlier reports were not reiterated and then re-examined in light of additional new evidence. This was especially evident at Wooperton where the results of the 1994 geophysical survey were not explicitly linked to the results of the intrusive fieldwork investigation presented in the 1997 HA report. The lack of explicitly testing the conclusions regarding the nature and location of archaeological features made on the basis

of the geophysical survey against the results of the later archaeological investigation of the site does not mean that they were not considered at any stage during the later investigation or that it would be impossible to manually compare the results between reports by reading both in order to determine connections between anticipated and actual archaeology, only that the interested party would have to pursue their own research. Overall, the later phases of archaeological investigation at the same site did reference connections between features and finds from earlier phases which gave additional depth to the wider conclusions about the nature of the site.

### *Significance*

All five of these reports appeared very useful when examined in detail, although still quite different from each other. The ARS reports were both very detailed; they had the highest number of illustrations, photographs and attached specialist reporting, as well as being the lengthiest of the grey literature reports examined in this section. They also had evidence of a greater than usual level of editorial control over externally authored specialist reporting and implied a high level of authorial synthesis through the detailed presentation of the results. They were extremely thorough and investigated many distinct opportunities provided by the archaeological material recovered. The HA reports, on the other hand, had far fewer illustrations and much less text, making them far more concise. They only included a minimal amount of specialist reporting, especially in comparison to the ARS reports. Interestingly though, I found them very effective at communicating the results of the archaeological investigations at Wooperton Quarry; perhaps not as complete or detailed as they may have been if they had followed the same format as the ARS reports and included a wider range of specialist reporting (as the archaeological evidence at the site would allow) but certainly I understood the interest and value of the archaeological results at Wooperton Quarry. The HA reports effectively communicated the approach

taken, the results obtained and put those results into the wider context of archaeology from the surrounding landscape; I consider that they fulfilled the remit of effective archaeological grey literature. Without presuming to know the details of the commercial relationship between these organisations and their respective clients at each quarry, it is encouraging to consider that brevity (which in some circumstances could be related to the amount of time allowed for writing up the results) or a smaller range of specialist reporting (which could also be indicative of the budget allowed to commission analyses of the results of the fieldwork investigation) does not inescapably result in an ineffective report. In this comparison group, grey literature that was comparatively brief and with a comparatively smaller range of specialist reporting was demonstrated to result in an equally effective communication of the method and results of archaeological investigation as compared to a much longer and more detailed report considering a very similar site in terms of area and resultant archaeological findings.

Examining the grey literature produced as a result of development at quarry sites allowed a comparison between sites with similar histories of excavation, covering similar areas, with similar underlying geology and, as became apparent on reading the associated grey literature reports, providing very similar archaeological records. It also allowed for the consideration of archaeological reporting which incorporates several phases of work at a site, not all of which were conducted by the same organisation; I was able to observe that an ongoing excavation at a larger site allowed for a greater understanding of the wider archaeological landscape and the drawing together of results from various phases to strengthen the presented conclusions. This is in contrast to some archaeological investigations conducted in adjacent areas for different clients (i.e., in an urban setting where different blocks may be developed by different commercial entities decades apart) where the archaeological results between neighbouring sites are often not as strongly

connected in the resultant grey literature as was apparent here (Wendy Morrsion and Roger Thomas 2015, pers. Comm.).

## 7.7 Conclusions

Initial observations revealed that the north Northumberland case study area had a very distinct character in comparison with other regions investigated and closer inspection proved this to be true in many ways. A larger proportion of archaeological investigation in this region was undertaken in the form of non-intrusive landscape survey; although there was less recorded investigation overall, much more of it was undertaken over many years and sites often covered larger geographical areas, such as the Breamish Valley Archaeological Project. The drivers of archaeological investigation within this region were also more varied; commercial development, although still a major contributor, did not dominate as a catalyst to archaeological investigation to quite the same extent as observed in other regions of England throughout this case study. Instead other interests, such as conservation requirements or academic research topics also formed the basis for many of the archaeological investigations recorded in the AIP, the EI or the GLL. The spatial patterning and temporal distribution of archaeological investigation and grey literature in north Northumberland showed a much more sparsely investigated landscape, although this was not reflected by the densely patterned known archaeological record as revealed by the historic environment records for the area. In this area in particular, clearly the data held by the AIP, the EI and the GLL cannot be relied upon entirely as a proxy for all forms of archaeological investigation. Grey literature contributors in this area were more likely to be based outside of the case study area, although many were still based in the north of the England. The examination of each sample square area revealed the influence of landscape designations on the opportunity for archaeological investigation; the Northumberland Coast Area of Natural Beauty had a very limited amount of

archaeological investigation, while the Northumberland National Park showed evidence of much archaeological investigation which was not conducted as a result of development pressures but instead as a managed program of archaeological research or for conservation purposes. A close review of archaeological grey literature produced by different organisations showed that organisations produced grey literature in distinct and recognizable modes which evolved over time. Finally, a detailed and in depth examination of the contents of five grey literature reports related to archaeological investigations undertaken at two different quarry development sites not only demonstrated the opportunity provided by long term seasonal site investigations to build a greater archaeological understanding over a larger landscape area, but also demonstrated that, although extremely detailed and wide-ranging grey literature reports will always be a pleasure to review and a useful addition to archaeological understanding, grey literature producing with a more limited use of photographs, plans, figures, specialist reporting or other additions can still be equally illuminating in communicating the results of archaeological investigation. This is an especially significant point to consider; although it would be wonderful if all archaeological investigations were conducted with unlimited resources and with no time or access pressures on conducting the fieldwork or producing the associated report, the reality is that most archaeological investigations are conducted within a limited budget and a very constrained timescale. Observing that grey literature reports can effectively fulfil their remit without engaging a huge range of resources is an encouraging observation for the future of archaeological investigation in England.

The north Northumberland case study area has allowed for a more nuanced investigation into the links between the nature of archaeological investigation and the resultant grey literature, including how some of the more unusual drivers of archaeological investigation, which were more visible within this case study area than in other regions of England,

impacted the creation and content of grey literature. The comparatively lower level of development pressure in the region revealed a complex network of other influences for archaeological investigation and reporting which intense development pressure may mask, such as within the Lea Valley case study area. Grey literature producers working in the region were more likely to be based farther afield from the area of investigation and producers with a focus on specialist topics were more likely to be primary report producers.

# 8 Discussion: Effective grey literature reporting

## 8.1 Introduction

This chapter provides the opportunity to consider the findings from each case study area in a broader context and to move from the consideration of the recent past of archaeological practice to the present and future of archaeological investigation and associated grey literature reporting in England.

## 8.2 Review

This project began with an overview of archaeological investigation and grey literature reporting in England from 1990 to 2010. I examined the creation and composition of three major datasets related to the topics of archaeological investigation and grey literature reporting across all of England; the AIP, EI and GLL. I considered how these different datasets were created, curated, accessed and shared, and how all of this might impact, distort or enhance our conception of recent archaeological investigation in England. I examined their distribution through mapping and considered the factors that influenced this spatial patterning. Through an investigation of these three major datasets, I identified over 2400 individual archaeological organizations involved in producing archaeological fieldwork investigation reporting and examined their distribution throughout England. In order to gain a more detailed understanding of the formation processes behind grey literature, I selected three case study areas in order to address questions raised when looking at these datasets at the national level. The first case study area, the Lea Valley, provided an opportunity to examine the wide diversity of grey literature reporting by selecting an area which included both urban and rural areas. I compared the AIP, EI and GLL data for the case study area in detail and identified factors which influenced the spatial patterning. I characterised grey literature producing organisations in the case study

area and I conducted a detailed examination of 114 grey literature reports using a variety of methods.

For my second case study area, the mid-England transect, I selected a region that would allow me to investigate the influence of regional divisions and frameworks on the production of grey literature reporting. Again, I compared the AIP, EI and GLL datasets in detail for the case study area, and identified factors which influenced their spatial patterning. Using the same techniques employed in the first case study area, I again characterised grey literature producing organisations in the case study area. Using a variety of methods, I made a detailed examination of 289 grey literature reports.

For my final case study area, north Northumberland, I selected a region with a comparatively low level of development pressure in order to investigate the resultant impact on the nature of grey literature. I made a detailed comparison of the AIP, EI and GLL datasets and considered the factors which influenced their distribution. I characterised the grey literature report producing organisation in the case study area and contrasted these findings with the earlier case study results. Finally, I employed a wide range of methods to make a detailed examination of 14 grey literature reports.

The repeated application of the same investigative techniques allowed the results of each case study area to be broadly comparative, although I also adapted my investigation in each region to address particular areas of interest and to cope with the particular idiosyncrasies of various areas. The case study areas provided a different scale of analysis to compare with the broader investigation of grey literature production at the national level; combining all of these has provided a greater understanding of the complex character of grey literature, its producers and the associated framework of behaviours, regulations, economics and relationships which structure and define grey literature.

## 8.3 Structure

One of the most significant findings of this investigation has been the recognition of the centrality of structure to all aspects of grey literature. How data is structured fundamentally changes our relation to that data. The underlying structure of our archaeological data, as generated by archaeological fieldwork and shared through grey literature reporting, transforms our understanding. There are three major categories of structuring which impact archaeological grey literature; affordance, commercial drivers and technology.

### *Structure and affordance*

Affordance, bias and obscuration have been demonstrated to have major impacts on the resultant form of the grey literature dataset, as illustrated repeatedly in each of my case study areas. The English landscape exerts a force which can be observed in where archaeological investigation is undertaken, what form that investigation may take and how densely or frequently a particular region is investigated. Simple aspects of geography and geology are reflected in the spatial patterning of archaeological investigation; sometimes exerting a direct influence, as in areas of historically and current dense forestation which show much less evidence for archaeological intervention than more open areas, or more indirectly, such as areas with greater political and legislative protection as a result of their perceived beauty or intrinsic natural value such as a location designated as an AONB or a National Park which have here been shown to sometimes evidence higher rates of archaeological investigation as a result of landscape controls but which also tend towards higher rates of investigations related to conservation management and landscape survey than found elsewhere. The different affordances for archaeological investigation across the landscape have an influence on the type of archaeological grey literature found in each area (i.e. greater amounts of non-intrusive survey or keyhole investigations) and the

density or paucity of investigation; these factors influence the resultant data which enters into the archaeological record and in turn influences the creation and synthesis of the archaeological regional narrative. In the words of my colleagues Green and Cooper, "Data is characterful" and that character colours our own relation to that data; we must attempt an understanding of that character in order to appreciate the intrinsic affordances that are allowed by the peculiar peculiarities that influence the creation of our archaeological record. In order to synthesize, we must be able to better identify absences and holes in our regional analyses and apply a more hermeneutic understanding of data character to address inconsistencies and gaps.

### *Structure and drivers of development*

Also contributing to the underlying structure of archaeological data are the drivers of archaeological investigation. The economic needs of commercial development are a major structuring force for the creation of archaeological data (as shown by the work of Darvill and Russell 2002). These economic drivers are particularly significant as they can be considered external forces to the hermeneutics of archaeology; they initiate a sequence where the archaeological investigation is a fallen domino much further down the chain from the instigating action. This investigation has demonstrated that archaeological grey literature is overwhelmingly a product of development-led archaeology and so the changing development pressures of the last decades have powerfully shaped our resultant archaeological record. Housing developments, aggregate extraction sites, road schemes, major infrastructure upgrades, the expansion of urban centres and the siting of airports are all factors in the creation of our archaeological record. Any works which synthesize results across a region are not only demonstrating our current understanding of, for example, the spread of Iron Age settlement sites but also reflect the distribution of the much more recent activities of the construction sector. Figures which illustrate artefactual

or past settlement distributions may actually be communicating more about the present than they are about the past.

### *Structure and technology*

Finally, archaeological data is hugely structured by technology and technological change. Advances in computer processing power, software packages and analytical tools have greatly changed both the nature and the accessibility of archaeological grey literature. Since 1990, there have been great changes in the approach to the production and dissemination of grey literature due to technological change and associated impacts which I was able to observe directly during the course of my research. Where documents initially had to be typewritten and made into limited sets of physical copies which would be held at particular physical repository sites, enhancements in digital technology such as the PDF format along with improved internet infrastructure have allowed grey literature documents to be more readily shared through email, online archives, websites and links to digital datasets. Technology not only structures the basic form of grey literature and its accessibility but has also influenced our understanding of grey literature as a distinct category of data. The work of Evans in exploring the use of the semantic web, database management and improving meta-data is key to adapting grey literature to changes in technology (i.e. Evans 2013, 2015). OASIS exists in the form it does because the internet also exists and because data can be stored and shared in a fashion which allows for the collection of metadata; the data we collect about our data shapes our understanding of the character of that data. The current form of archaeological data and metadata informs our interrogation of that data and which in turn generates projects like the AIP, initiatives like OASIS and makes projects like my own investigation into grey literature possible.

## 8.4 Character

The underlying structure of data creates its character and understanding the character of data is the key to its interpretation. This investigation attempted to characterise grey literature between 1990 and 2010. In order to do so, it was necessary to gain an understanding of the complex entangled interactions of the many systems, organisations and actors which contribute to the production of grey literature. Archaeological investigations were shown to be influenced by local, regional and national pressures and variations in the nature of grey literature were also shown to be a result of overlapping influences of different geographic or economic scales.

### *Development-led character*

Investigative fieldwork and grey literature production is overwhelmingly conducted and produced by development-led archaeology and commercial archaeology organizations. This inevitably forms the basis of the grey literature character; it is economically constrained in all directions. As shown by the work of Aitchenson and Rocks-Macqueen (2013), commercial forces dictate the nature and size of the area under investigation, the investigative technique selected from the wider range of options open to archaeology, the number of staff assigned to a project and the time allowed for all stages of the project, the manner in which artefacts, finds and features will be analysed, curated and presented, and how all of these elements are transmuted into the data presented in the associated grey literature report. Grey literature is a commercial product manufactured to fulfil a developer's obligation to the local authority and as such has a specific function which has been shown throughout my research to structure grey literature reports, creating pressure to rapidly produce efficient and concise reporting which communicates if the results require further investigation or if the obligation to the local authority is now discharged rather than an aim for reporting to further archaeological interpretation and synthesis. Commercial

forces also influence the wider milieu of development-led archaeology; the number of active archaeologists in the workforce, their level and access to skills and training, the relations between archaeological organisations and those responsible for monitoring and oversight. Again, this milieu has direct influence on the nature of archaeological grey literature.

### *The influence of professionalism*

Development-led archaeology has contributed to the increasing creation of professional archaeologists, whose role is to conduct and interpret archaeological fieldwork and communicate the results; this communication is filtered through their skills and abilities. Archaeologists who are employed within development-led archaeology are expected to demonstrate a wide range of skills as illustrated by reviewing the requirements for the various levels of corporate membership in the CIfA. Although these levels may reflect the broad requirements for practising archaeology in England, they do not represent a formalised system of teaching and training necessitated of archaeological practitioners in England. The reality is that an individual archaeologist may have received highly variable training in their employment and may demonstrate a wide range of ability when carrying out their duties; different corporate entities will also have their own corporate culture and systems of work which also contribute towards the character of the data they produce.

### *Policy, legislation and practice*

Development-led archaeology also takes place within a system of development which has varying levels of governmental controls through policy, legislation and practice. All of these also then contribute towards the underlying character of grey literature reporting, most fundamentally with the enshrinement of the principle of dissemination in the Valetta Convention and in PPG 16 and all its more recent variations. Grey literature exists for a purpose, in order to fulfil the obligations imposed by legislation on development.

Archaeological grey literature is characterised by a remit to communicate the results of archaeological fieldwork. There is a focus on the presentation and expression of immediate site related data while wider synthesis or interpretation is less regularly incorporated, considered as being beyond the generally accepted purpose of grey literature when viewed in this legislative context.

## 8.5 Variation

Archaeological grey literature clearly has character but that character is not immutable or homogenous, as this investigation into grey literature has demonstrated. Variation in grey literature was found over time, by region, by producer, by the type of investigation and the nature of the associated development. Significantly, the actual archaeology itself was generally not the structuring element to variation in reporting and grey literature reports could be very similar or very different to each other regardless of the nature or scale of the archaeological findings. Instead, similarities were more likely to be found regionally or through the clear 'in-house' styles of many grey literature producing organisations.

### *Temporal variation*

Variation through time mainly reflected how data was presented especially through advances in word processing and figure production but also through a general increase in the length of grey literature reports over the years. Grey literature also largely increased through time in terms of overall volume of grey literature being produced; being recorded; and being available. More grey literature reports were produced in 2010 than in 1990 and these reports were more likely to be registered in some manner, indexed via at least one of several means available and essentially recognized as now being in existence than in previous years. Grey literature reports were also far more easily and rapidly accessible by 2010 than they were in 1990 and that trend of increasing access has continued to the present day.

### *Regional variation*

Regional variation was clearly demonstrated throughout each of the case study areas and when grey literature reports from each of these case study areas are considered collectively, they clearly differ in both content and form. Grey literature reports from north Northumberland included more large-scale landscape survey work and were often longer with more additional specialist reporting; many of the Northumberland projects were repeating or seasonal continuations of work at an ongoing long-running site. Reports from the Lea Valley in contrast were more likely to be communicating results of trial trench evaluation or other forms of sampling and keyhole investigations along linear developments or on isolated smaller sites. The grey literature reports reflected both the different landscapes and types of development pressure in different regions. Reports from the mid-England transect clearly demonstrated that grey literature report producing organisations often had very narrow territories that they operated within, often matching older county or regional boundaries; this was also distinctly visible at the national level. This close matching of regional variation in grey literature to political boundaries suggests that the individual behaviours and oversight by differing local authorities and county archaeologists, as well as the distribution of grey literature producers within a traditional 'home territory', has a marked impact on the resultant character of grey literature reporting.

### *Variation by producing organisations*

Variation was also clearly demonstrated by individual grey literature report producing organisations. I have shown that there are clear 'in-house' styles which are not only aesthetic but influence the actual data presented. This is hugely significant to our construction of the archaeological record. The same hypothetical site excavated and reported by different organisations could end up communicating very different data about the site which would then form the basis of subsequent analysis and understanding. It is

certainly here in the consideration of the distinct variation between report producing organisations and individuals that many of the critiques of the efficacy of grey literature can be focused.

### *Archaeological variability*

Linked to this theme of variation and based on my observations, it is clear that variations in the actual archaeology itself are not connected to the variations in the nature and character of different grey literature reports, which are driven by other factors as discussed above. Variation between grey literature reports occurs regardless of the scale, extent, significance, type or time period of the archaeological results. The observed variation in archaeological grey literature is not dependent on whether or not significant archaeology was encountered during fieldwork; the actual identified archaeology appears to have only limited bearing on the resultant grey literature report.

## 8.6 Identified issues with archaeological grey literature

When these observed characteristics of archaeological grey literature are considered collectively, some underlying issues become apparent. Some of these issues may be insurmountable while others can certainly be altered and it is necessary to consider how disruptive or problematic some of these issues are when dealing with archaeological grey literature.

### *Comparability*

Once it is taken into account that archaeological grey literature varies by report producing organisation and also that most report producing organisations do not work widely across all of England but instead are mainly focused upon particular territories or smaller regions, the conclusion must be that our archaeological record itself is also variable between producing organisations and regions. If the grey literature reports which communicate the results of archaeological investigation are distinctly different according to location and

producing organisation, this begins to call into doubt how comparable the archaeological record actually is across the whole of England. Considering how many large scale synthesis projects are now underway, this issue about the fundamental comparability of archaeological data across the country is extremely significant. How can we take a holistic approach to understanding the archaeology of England when the composition of that understanding is a patchwork quilt of highly variable data? The few larger archaeological organisations which attain close to national coverage in their fieldwork such as OA mask the many smaller organisations which only operate within a small regional territory and yet which collectively produce a large proportion of archaeological grey literature and underpin much of the English archaeological record. These differences are further amplified by the many regional systems in place in English archaeology, such as the role of County Archaeologists or local HERs, ensuring that these regional differences are perpetuated and potentially making linkages in the archaeological record challenging between very different places, i.e. between the Lea Valley and north Northumberland. Researchers wishing to synthesize large datasets must be willing to adapt a methodology that can account for highly variable data (i.e. Bradley 2007).

### *Completeness*

Another issue I encountered repeatedly throughout this project was how incomplete many of these reports were. Reports were frequently found without appendices, figures, maps or photos. Even bound hard copies often had a place marker in the back for 'Appendix C: Roman Pottery' without the actual pottery report being included. The table of contents would frequently refer to sections or inclusions which were absent in the version obtained and this was especially often true of older grey literature reports. These missing sections, figures and specialist reports were implied to exist through discussion within the main body of the text but were often not traceable, especially if the producing organisation no

longer existed. The standards and methods used for archiving grey literature reports have not always been as robust as they probably should have been, especially prior to the advent of systems like OASIS or more standardised methodology and guidance such as that produced by the CIfA. A concern with understanding and improving archiving, meta-data and semantics in general is becoming more visible in the general archaeological discourse in England and many of these perceived issues are being addressed for the future, although this does not solve the problem of missing site trench plans from 1993.

### *Accessibility*

One of the greatest criticisms levelled at grey literature repeatedly over the years is that it is 'inaccessible'. The methodology employed by the AIP for example was not chosen because the researchers thought it would be pleasant to widely travel the country in order to visit the offices and organisations producing archaeological grey literature in person but because when that research project was originally instigated, that was the most accessible method for collecting all grey literature. Without a single centralized England-wide repository for archaeological grey literature, accessibility will always be differentially measured across the country. Digital initiatives like OASIS and HERALD as well as increasingly online HER databases greatly increase access, but they are not mandatory and participation is not legislatively enforced. A benefit to improved digital access to archaeological grey literature reporting is that it becomes more visible and useful to both archaeologists and non-archaeologists alike; grey literature reporting as a product which fulfils legal planning obligations for public outreach and dissemination is positively enhanced by improved digital and internet access to grey literature reporting.

### *Continuity*

Finally, regional continuity or local small scale synthesis in archaeological grey literature was often lacking. Many reports represented sites which were investigated in several

stages over time, or using different techniques (i.e. geophysical survey and trial trenching resulting in separate grey literature reports for the same site) or neighbouring sites which could be developed years apart. Although I could observe their connection through my reading of reports within a case study area and realise that these reports were linked, it was very rare for these reports to refer to each other; I found this especially surprising for archaeological investigation using different techniques which occurred on the same site which were often produced by the same organisation. Morrison, Thomas and Gosden's work on the Upper Thames Valley illustrates that although it would be extremely useful to have increased continuity between different archaeological investigations and grey literature reporting, the reality is that this is still a problematic goal (Morrison *et al* 2014 and Thomas *et al* 2015).

## 8.7 Advancing grey literature

These identified issues with archaeological grey literature reporting all have significance to the understanding and interpretation of English archaeology. Reports which cannot be understood as linked to previous fieldwork, which are impossible to find, which are missing key elements such as specialist reports or plans and figures and which cannot be compared collectively become a much larger issue which undermines the entire process of archaeological investigation and site reporting. This is a bleak view of archaeology in England; if the data collected is not usable in its present form, what is the point of conducting ever increasing amounts of fieldwork investigations and generating even more unusable grey literature reporting?

I would argue that even at its very worst, data within archaeological grey literature is still useful and the very worst examples are actually nationally very rare. These issues are not insurmountable challenges. They can be identified and addressed and in fact many of these issues are currently being addressed either directly such as through improving the

Grey Literature Library holdings at the ADS or as an indirect effect of changes to legislation, practice and methods, and advances in technology and research.

As a result of my wide-ranging examination of the character of grey literature and the changing process of its production, I have developed an understanding of what elements can contribute positively to a grey literature report. I also consider that there are specific actions we as archaeologists should be implementing which will directly benefit grey literature production and use.

A review of current and historic guidance relating to report production (i.e. CIfA 2014a, CIfA 2014b and Grinsell 1974) shows that most authors substantially agree on the basic requirements of a site report and which are not far removed from my own vision of what would be included in an ideal grey literature report which is presented in Table 10. This table was developed on the basis of the over 420 reports I reviewed in greater detail as part of each of my case study chapters. As a tool, I would view this as being indicative of the most useful manner of engagement with reporting which should be undertaken when creating grey literature rather than being prescriptive list of what must be included for a successful grey literature report.

However I did find that 'best in show' grey literature reports covered all of the contents described in Table 10 and were written in clear concise non-technical language with legible and pertinent illustrations, figures and photos. Strong reports put their investigation in the context of other regional archaeological investigations and clearly addressed research aims and objectives. They explained clearly *how* they did the work; more useful detail on methodology generally correlated with a better report overall and meant that the excavation as a whole could be understood and considered for purposes other than planning related decisions regardless of the results or types of analysis undertaken. I observed that strong reports communicated their 'results' and 'conclusions

and/or summary' separately, meaning one section concentrated on presenting what was recovered while the other section considered the wider context of the findings. Reports which concentrated on a blow by blow recitation of the contents of each individual trench with no consideration of the overall relationships on the site were amongst the poorest quality reports. There was an interesting correlation between reports which self-contextualised the producers (i.e. declaring the qualifications of the organisation such as being a CIfA RAO or including the identities of the excavation team) with being better reports overall. Reports which incorporated the results of specialist analysis into the main text demonstrated a more cohesive and coherent narrative of past human activity on the relevant site. The best reports were not necessarily the longest, the most detailed or (by implication from the contents) the most expensive to produce; the strongest grey literature reports were the ones which provided greater supporting context to both the investigation and how it was conducted, and also to the results.

There are certainly flaws within the system of English development-led archaeology and these flaws have an impact on the usefulness of the grey literature being produced as a result of this system. Greater control by curatorial authorities as well as nationally agreed standards would be hugely beneficial to archaeological grey literature and which could additionally counter the observed trends towards individual 'in-house' reporting styles of various organisations and the resulting regionalism within the English archaeological record. Ideally this curatorial input would include setting briefs or WSI's which explicitly specify the requirements for grey literature relating to useful measured appropriate guidance for report writing, as well as (importantly) having greater resources to review (and potentially reject) the finished product. Clearly archaeologists with a curatorial role already have a wide range of responsibilities and limited resources and time so any method towards greater engagement with the contents of grey literature reporting would require

support, perhaps through a central organisation already dealing with grey literature, archiving and standards such as the ADS.

## 8.8 The future is grey

As I have observed throughout my research, archaeological grey literature has evolved since 1990 and so has our understanding of the use and value of grey literature. Our evolving approach to archaeological grey literature over the last twenty-five years can be summarised as identifying, addressing and then solving problems with archaeological grey literature reports through the creation of systems of reporting, refining standards and guidance and implementing and improving archives and access.

The archaeological record is by its nature always an imperfect, fragile and even transitory conception. The pursuit of perfect data (in any field) is an impossible task which is why archaeologists have moved beyond the quest for the Total Archaeological Record. Although advances in GIS technology and increased fieldwork investigation as a result of PPG16 may give the illusion that such a thing as a modern Total Archaeological Record for all of England may be attainable, the reality is that this is not an achievable goal nor should it be. Although improving the creation, dissemination, synthesis, storage and use of grey literature in England will result in better spatial resolution and distribution of archaeological data, identify areas of null archaeological results and fill in gaps in archaeological understanding, all which also improve the archaeological record of England as a whole and make it more 'complete', this is not the only benefit to improving our use of grey literature. The spread and volume of data being produced can move the archaeological record towards a more holistic perspective of English archaeology as an entire landscape instead of fragmented parts while also allowing detailed site or material specific studies (as discussed in Thomas 2013). Data embedded within grey literature forms the basis of research frameworks and guides archaeological inquiry. The knowledge

already entrenched within archaeological grey literature is valuable and useful while future forms of archaeological grey literature will only increase this value and use. The grey literature of the future will no longer be a problematic but necessary by-product of archaeological fieldwork investigation but will instead be a driver of research agendas and a demonstration of archaeological understanding that can be easily shared within the field of archaeology and beyond.

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