

Coinage in 9th-century Northumbria:  
Copper-alloy, Kings and Vikings

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July 2025

## Abstract

The aim of this thesis is to undertake a radical reappraisal of Northumbrian copper-alloy pennies, commonly known as 'stycas'. Ninth-century Northumbria barely features in the documentary record, so its coinage is the most comprehensive resource we have to study the period. However, its study is neglected in comparison to the contemporary silver pennies used in other early medieval kingdoms, and suffers from an overly complex typology, which is not accepted by the numismatic community. This has led to a position where Northumbrian coinage, which is one of the richest sources for the period, is under-used and often misunderstood. Until recently it was assumed that their production stopped c.867 due to Viking attacks and civil war, however, finds of these pennies have been made in the last two decades at Viking winter camps.

To reassess Northumbrian pennies, I have created a new periodisation, which is used to assess the relative chronology of sites. It is coupled with a revised absolute chronology, based on numismatic data, which advances the regal years of the kings of Northumbria several years forward. Coupled with the historical dates of the Viking winter camps at Torksey (872-3) and Aldwark (c.875), this enables hoards and archaeological sites to be redated. It also determines that production and circulation of Northumbrian pennies continued into the late 870s, a decade at least after it was assumed to have ceased.

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## List of accompanying material

- **Spreadsheet with spatial data for Northumbrian pennies:**  
Moore\_206042218\_CoinData\_Spatial.xls
- **Spreadsheet with hoard data:** Moore\_206042218\_CoinData\_Hoards.xls

## Acknowledgements

Heartfelt thanks go to the White Rose College for the Arts and Humanities for funding this collaborative doctoral award, the Department of Archaeology and the Yorkshire Museum for hosting it, and my supervisors Dawn Hadley and Andrew Woods, who have guided me through this project with huge patience. Grants from the Royal and British Numismatic Societies helped me during the COVID-19 pandemic and enabled travel to the International Numismatic Congress, many thanks to both organisations. Thanks to colleagues at the Yorkshire Museum, and at the National Museum of Ireland, where I undertook a placement. Working in new curatorial contexts at both institutions has been inspiring. Many thanks to numismatists Megan Gooch, Wendy Scott and Elina Screen for kind words and guidance, and to the late Nick Mayhew for his mentorship. Thanks also to the many people at conferences who encouraged me with words along the lines of “I’m so pleased *someone* is working on this coinage”.

Love, respect and thanks go to my many friends and colleagues in Archaeology at York, I lost count of the number of people I sobbed at on Zoom in the pandemic, but I am so grateful to you all. Special thanks go to Yannick Signer, for teaching me ArcGIS Pro when no one else could. My former employer, Leeds Museums & Galleries, enabled me to start this project, and I am very grateful for that. My current employer, the University of Leeds, couldn’t have supported me more in this final year. I do not thank successive governments, nor at times this university, who made it near impossible to be an unpaid carer and study for a PhD. To that end, this thesis is dedicated to my Mum, Libby, who dragged me and my brother up against all the odds.

## Declaration

***I declare that this thesis is a presentation of original work, and I am the sole author. This work has not previously been presented for a degree or other qualification at this University or elsewhere. All sources are acknowledged as references.***

# 1. Introduction

“Small, dumpy, debased pennies” is the unflattering description given to ninth-century, Northumbrian, copper alloy coinage by D M Metcalf, writing in the introduction to the pivotal 1987 volume *Coinage in Ninth-Century Northumbria* (Metcalf 1987). These coins, more commonly referred to as ‘styca’s have been the subject of numismatic study for the past 330 years. With the discovery of a hoard of these coins in Ripon in 1695, numismatists, archaeologists and historians have been both blessed and cursed in pursuit of understanding them. On the one hand, there is no shortage of material to study due to the discoveries of hoards with thousands of coins in the nineteenth century. On the other hand, their study has been hindered by difficulties within the numismatic community on reaching consensus on typology and chronology. At the time of writing, various chronologies are used by archaeologists and numismatists, and the only major catalogue, *Coins of the Kingdom of Northumbria* (Pirie 1996), is rarely referred to. A renewed study is timely, brought about by new evidence connecting the coinage to Viking winter camps. This was first indicated through the recognition and investigation of the artefact assemblage from the winter camp at Torksey but has been recognised at other sites connected to the Viking Great Army (Hadley and Richards 2018).



Figure 1.1: Copper-alloy penny, commonly known as a ‘styca’ (E.7773). This coin issued by Archbishop Wigmund of York by moneyer Coenred is typical © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\) licence](https://creativecommons.org/licenses/by-nc-sa/4.0/).

It was assumed that production and circulation of coins stopped about the time of the Viking conquest of York c.866, but there is now established evidence of Viking interactions, through the presence of large numbers of these coins at sites of Viking winter camps. These provide a tantalising glimpse of the extended life of the coinage and begs the questions of whether production and circulation did cease in c.866 (Williams 2014). Viking interaction with Northumbrian coinage adds another layer of complexity to its history and economics but also has the potential to clarify challenges to typology and chronology.

## 1.1. Introduction to Northumbrian pennies

Originating in the Kingdom of Northumbria, this region has a long monetary history beginning with the production of gold coins known as thrymsas in York in the seventh century, followed by early medieval silver pennies used during the 8th and early 9th centuries (Grierson and Blackburn 1986; Naismith 2017). These coinages were produced on a more sporadic basis with relatively small numbers of coins minted (Booth 1987; Bude 2016). During the first half of the 9th century there was a major shift in production and the metal alloy used changed from increasingly debased silver to copper alloy (Metcalfe 1987). It is these copper-alloy pennies that are the main subject of this thesis. Produced in far greater numbers than the earlier silver issues, these small (around 13mm in diameter) copper-alloy coins are a unique production in early medieval Europe. All other contemporary coins minted in the 9th century were made of silver and were larger with a much broader flan (around 19mm). This position as an unusual coinage located at the fringes of coin production both in Britain and in Europe has meant that the coinage has not been studied to the same extent as contemporaneous silver pennies (Abramson 2018).



Figure 1.2 (left): Gold shilling, referred to as 'thrymsa' found in East Yorkshire (YORYM-AA9654) CC BY York Museums Trust.

Figure 1.3 (right): Silver penny, referred to as 'sceat' (E.9346). © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\)](https://creativecommons.org/licenses/by-nc-sa/4.0/) licence. (not to scale)

Northumbrian pennies usually feature the name of a king or archbishop on the obverse, and a moneyer on the reverse. Many of them do, but there is also a considerable number whose inscriptions are not legible but do resemble more literate issues. All are found together in hoards and assemblages and appear to have been circulating on the same terms. Commonly for this period, moneyers could work for multiple kings or archbishops, and there are no historical sources to help understand what the routine for minting was. Plentiful evidence is, then, matched by plentiful questions.



Figure 1.4: Copper-alloy penny from Northumbria, inscription on obverse (right) reads +EANRED REX and +MONNE on reverse (left). FAKL-874F63. CC BY Portable Antiquities Scheme. Scale = 1cm.

## 1.2. Terminology

Whilst these coins are commonly referred to ‘stycas’, this author prefers, and encourages others to adopt, the term Northumbrian penny to describe these small, copper-alloy coins. The reasons for this are threefold. Firstly, the noun itself is something of a fantasy. Its first use is traced to the letters of the antiquarian Ralph Thoresby, where an Old English term “stycce” was drawn upon as a name for the copper-alloy coins he was studying. This word was traced to the Latin phrase *duo minuta* (translated into Old English in the Lindisfarne Gospels as two mites or two copper coins) (Pirie 1982a; Abramson 2018). However, there is no evidence that this term was used to describe the coinage during its circulation and it is likely they were referred to as pennies (Grierson and Blackburn 1986, 296). To continue to use a name unfamiliar to the people who minted the coins, seems somewhat disrespectful to Northumbrian culture and identity, and places an additional barrier between us and the past.

Secondly, the term ‘styca’ emphasises artificial separation from contemporaneous silver pennies. A separate name also denies the fact that these coins were much more of a direct descent from eight-century silver coinage, demonstrating continuity of development. The legacy of this distinction continues today with negative descriptions as seen at the beginning of this chapter. Thirdly, from numismatic literature it seems that the term is long recognised as problematic – North (1963) uses inverted commas to describe it. Others follow suit, sometimes using a single inverted comma (Kershaw et al. 2023), and Naismith (2012, 2017, 2025b). The latter has repeatedly argued against continuation of use. I suggest that they are *not* ‘stycas’ and Northumbrian pennies is a more respectful, equitable, and most of all accurate term to use. A similar transformation of terminological exactitude has undergone for ‘sceattas’, those early medieval pennies.

Another key phrase that is used in this thesis is the term “derivative”. I use this as a catch-all term for all the coins that are characterised as having illiterate legends, which are variously described in other sources as “blundered” or “irregular”. Both terms are

somewhat negative, and it seems unfair to treat these coins as ‘less than’ just because they don’t reflect a primacy of literacy. These are produced in such high numbers that they must have been ‘*coin-enough*’ as they were. This phenomenon is also discussed in relation to seventeenth-century tokens (Burnett 2019). “Derivative” on the other hand is a term that respects the fact that many of these coins are following written designs but treating them as visual motifs to draw upon.

Other words used throughout the thesis include authority, moneyer and die cutter. Authority is used to describe both kings and archbishops when discussed in whose name coin was issued. Moneyer is the term used for the person who organised production of coin, which involved accessing coin dies and employing metal workers to coin money. Die cutter describes the person who created the metal stamps with engraved designs onto blank circles of metal.

## 1.2. Previous studies

The study of Northumbrian coinage is characterised in three major stages. The first are the antiquarian studies of the late seventeenth to early eighteenth and the first half of the nineteenth centuries. This included the attribution of the name ‘*styca*’, discussed in §1.2, as well as the studies made of large hoards recovered between 1808 and 1846. Most significant for the development of understanding of the coinage was the study of the Hexham hoard undertaken by John Adamson in 1832 (see §2.2.3). His work established fundamental principles that shaped study of the coinage until the second half of the twentieth century, and whose influence is still apparent today.

The second most significant phase is characterised by a series of seminal publications by three numismatists whose reputations have become closely entwined with the coinage: Stewart Lyon, Hugh Pagan and Elizabeth Pirie (see §3.3 and §3.4). They all addressed pressing issues: for Lyon and Pagan, chronology was the focus of their respective 1955 and 1969 papers. They both recognised the fact that the numismatic data did not concord with the historical record and addressed how this could be adjusted. Much of the periodisation in §4.3 is informed by their work. The third figure in

this era is Elizabeth Pirie, whose expertise dominated the study of the coinage from the early 1980s to the turn of the millennium (see §3.4 and §3.5). Pirie developed a new typology for the coinage, based on links between dies, which was not supported by the wider numismatic community. Nevertheless, she was the first point of contact for archaeologists, curators and metal detectorists who wanted these coins identified. It is very rare to read reports on this material that she did not author during this time, at the same time working as a curator for Leeds City Museum. Pirie also assiduously recorded finds, and her published inventories are invaluable resources for this thesis.

The third phase of influence is the association of Northumbrian pennies with the activities of the Viking Great Army. This is due to the work of several numismatists and archaeologists, including Mark Blackburn, Gareth Williams, Dawn Hadley and Julian Richards. Blackburn was the first to connect single finds from the area around Torksey with an entry in the Anglo-Saxon Chronicle; Hadley and Richards led the archaeological investigation into the site of the winter camp; Williams, with colleagues from York Archaeology, led on the investigation of now-recognised camp at Aldwark. Both sites were marked by their large assemblages of Northumbrian coinage, and it is this association, particularly with Torksey lying as it does outside the kingdom, that has precipitated this research project. New finds in new contexts require new approaches to familiar material, and it is timely to consider how Northumbrian coinage did affect and was affected by Viking migration.

### 1.3. Research questions

Northumbrian coinage is well overdue a reassessment, especially considering finds from Viking winter camps. This thesis addresses the following questions:

- Northumbrian pennies have been excavated from a range of sites: what implications are there with the use of a new periodisation for their analysis, and can this enlighten the end of the coinage further?

- Hoards were the major source of Northumbrian pennies: what impact does periodisation have on our understanding of their chronology and the reasons why they were concealed?
- Is there a pattern in the profile of assemblages of Northumbrian pennies at Viking Great Army sites? If there is, how do the derivative issues fit in the picture?
- What additional insight can the wealth of metal-detected data add to understanding of the loss and circulation of Northumbrian pennies? What influence might the Viking Great Army have had on this?
- Northumbrian pennies have been modified in a range of ways, including into Viking-Age weights, does analysis of these shed further insight?

## 1.4. Methodology

To answer these research questions, there are three methodological stages. The first is to develop a dataset of Northumbrian pennies, which incorporates the range of ways in which they have been recovered since the seventeenth century. The second is to develop a periodisation to enable comparison between changes in production across the coinage. The third is to apply the periodisation spatially, both to generate a picture of finds across Britain and to analyse them at a site level.

The last inventory of Northumbrian pennies was made in 2000 by Elizabeth Pirie. Since then, there has been a huge increase in the recording of metal-detected finds, both with the Early Medieval Corpus of Coin Finds (EMC) and with the Portable Antiquities Scheme (PAS). Over 1000 have been recorded on the Portable Antiquities Scheme database over the past 20 years. There have been new excavations and new multidisciplinary investigations which have revealed Viking winter camps. This evidence is reviewed in chapter 2, along with the considerable extant data known to Pirie (2000), and the historic hoards. This is the first time since 2000 that a dataset for all these types of data, from across Britain has been aggregated, as previous projects focussed have on data from specific regions (Naylor 2004; Abramson 2018). There is now more data than ever, so this thesis is an opportunity to reassess and learn something new. There

has been a significant amount of debate about the relative and absolute chronologies of the Northumbrian pennies, which is used here to influence a new periodisation for the coinage. This new periodisation draws on the works of several numismatists to create a way to compare assemblages on a chronological basis (Lyon 1955; Pagan 1969; Pirie 1996; Metcalf 1987; Lyon 2017).

## 1.5. Key findings

The new periodisation developed in this thesis resolves the disparity between relative and absolute chronologies for Northumbrian coinage. This is done by advancing forward the absolute chronology of Northumbrian kings, whilst keeping it aligned with episcopal dates. This periodisation is based on changes to production across the coinage and comprises five periods: period 1 (c.818-c.845), period 2(c.845-c.850), period 3 (c.850-c.854), period 4 (c.854-c.859), period 5 (c.859-870s). Key to understanding the final period was analysis of the Viking winter camp assemblages of Torksey (872-873) and Aldwark (c.875); these have high proportions of period 5 coins, including many derivative issues. These assemblages provided the first evidence that production and circulation continued after the proposed cessation of production c.866.

New analysis of metal detected finds determined that there was an area of Northumbrian economic influence that extended into south Yorkshire and north Lincolnshire. This is significant as it is the first evidence to demonstrate that Northumbrian coinage was used south of the Humber. Metal detected data was also used to measure impact of the Viking Great Army on the distribution of Northumbrian pennies outside the kingdom. The results of this were ambiguous, which is significant in itself as it does not support a correlation between co-occurrence of Northumbrian pennies and objects from the Viking Great Army finds signature. It confirms that nuance is required when approaching this material.

Comparison of excavated assemblages with Viking winter camps using the periodisation proposes new dating for some of the most notable sites in the region, including Whithorn Priory's fire, Whitby Abbey's cessation and the impact of the Viking Great Army in Beverley and London. The same method is used for hoards: periodisation

introduces relative chronology to hoard data, which alters the accepted dating of hoards foundational to the study of the coinage. For example, both St Leonard's Place and Bolton Percy hoards were assumed to have both been concealed c.866, but evidence from the periodisation suggests a later date of concealment for Bolton Percy. Relative chronology also demonstrates that some hoards were concealed after the Viking Great Army occupied the camps at Torksey and Aldwark. All of which enables a new appreciation of Northumbrian coinage, activities of the Viking Great Army and will act as a tool for others to use the coinage to better understand the period.

This work has resulted in two major contributions to the study of Northumbrian coinage. The first is to propose a new absolute chronology for the coinage, and insodoing for the kings of Northumbria. The second, and secondarily, is a major reintegration of numismatic and archaeological data with one another. Whilst this has previously been done at a regional level, it has not been considered for the coinage as a whole. Both are original contributions: the absolute chronology directly addresses an issue that has been debated since 1955 and constructs a new framework. Numismatics often separates itself from its archaeological origins, and by recontextualising finds on Northumbrian pennies, to examine the coinage as a whole, is in itself an original contribution to both Northumbrian studies, and numismatics more broadly. Both contributions mean that Northumbrian coinage is now more clearly understood.

## 1.6. Structure

The thesis comprises nine chapters, beginning with this first introduction to the background, the research questions, methodology, key findings and structure. Chapters 2 and 3 provide vital context to understand the range of material and the historiographical background, both of which have immense bearing on how the coinage is understood. Chapter 2 summarises key sites related to Northumbrian coinage according to method of recovery; grouping antiquarian, excavated and metal detected finds together. This provides an overview of the kinds of practices that effect understanding of their archaeological contexts. It describes a variety of sites, both secular and ecclesiastical, from a range of locations mostly across northern Britain.

Chapter 3 reviews existing literature on Northumbrian coinage, detailing the numismatic and historiographical issues that have prevented the coinage being used more widely as a source for the ninth century.

Chapter 4 is a new assessment of the coin series and provides the data to reassess ninth century history and archaeology, which is addressed in chapters 5 to 9. Chapter 4 presents a new periodisation for the coinage, taking a broad-brush approach, yet still marrying relative and absolute chronologies. This periodisation argues for a later dating for the kings of Northumbria. This can be used alongside archaeological assemblage profiles to propose revised dates for many of them.

Chapter 5 is the first of the analytical chapters and applies the periodisation to the data from Viking camps. It examines the assemblages of Northumbrian pennies from Torksey and Aldwark, using the new periodisation to identify commonalities between the assemblages. This shows that both have high quantities of derivative issues.

Chapter 6 builds on this work, to create a dataset of metal-detected finds from across Britain and to assess whether distribution pattern alters according to period of production. This chapter also uses single finds to assess what impact the Viking Great Army may have had on the distribution of finds of Northumbrian pennies. Chapter 7 focuses on excavated sites, applying the periodisation to assemblages and using case studies to examine chronological and spatial implications of the periodisation. This determines the re-dating of excavated sites, with implications for wider Northumbrian chronology. Chapter 8 addresses hoards and modified pennies, including inlaid weights and pierced coins, applying the periodisation for the former. This addresses questions on hoard chronology and provides a convincing timeline of revised dating into the 870s.

Chapter 9 discusses the findings from the range of methods of recovery, using a framework developed by Kemmers and Myrberg (2011) to address implications for production, use, loss and further study. They argue that the separation of numismatics from other fields, such as archaeology and material culture studies, fails it. They emphasise the importance of contextualisation for the study of coinage, describing how

coins “were never minted, used, deposited, retrieved or studied in a vacuum” (Kemmers and Myrberg 2011, 89). This is particularly applicable to the study of Northumbrian pennies, where research has been stifled by an over-emphasis on typology, disenfranchising the coins from their contexts. Kemmers and Myrberg define these contexts as primary, secondary, tertiary and quaternary. A primary context focused on production, a secondary on use, a tertiary on loss, and the quaternary on retrieval and study. This framing of production, use, loss and further study will be familiar to anyone who works on material culture, and I use it here to discuss in turn how this thesis has furthered understanding of Northumbrian coinage in §9.2, §9.3, §9.4 and §9.5.

Kemmers and Myrberg also think beyond these contexts, arguing that coins have agency and this can be viewed thematically, through the actions of feeling, belonging, acting and creating. Feeling, they argue is based on trust, through both visual and tactile recognition of the coin. This is then “passes through a cultural filter” where interpretation and transformation create further meaning (Kemmers and Myrberg 2011). Interactions between Vikings and Northumbrian pennies show this through the re-use of these pennies and other coins within inlaid weights. Belonging speaks to how coinage can be used to construct, or reflect, identities from the local to the international. The article draws on the Euro and Roman provincial coinage as examples for how one side of a coin can remain distinctive whilst the other becomes part of a wider polity. Kemmers and Myrberg argue that whilst it is commonly held that it is the issuing authority that uses coins to construct identities and those identities reflect the current or intended status quo, coinage can also be a tool to actively distinguish those who use it from others. Indeed, a Northumbrian exceptionalism has been suggested as a part motivator for the use of copper-alloy for the coinage. These themes of feeling, belonging, acting and creating are referred to in the conclusion of each chapter, with more detailed discussion in chapter 9.

This concluding chapter demonstrates why Northumbrian pennies are worthy of study, especially considering new data from Viking camps. It concludes that Northumbrian pennies needed a new periodisation, and the impact that new periodisation has on a

range of archaeological contexts, from antiquarian and metal detected finds to archaeological excavations. It combines the revised dating based on relative hoard chronology with excavated sites and metal detected assemblages, which further support the extension of production and circulation into the later 870s. It also places this reassessment of Northumbrian coinage found in Britain within a wider European context and demonstrates that the patterns are confirmed.

Reassessing the role of Northumbrian coinage in the ninth century is a necessity. This is due to the new evidence from Viking winter camps, as well as the increasing corpus of metal detected coin finds. What is perhaps even more pressing is to revitalise its study for the coming decades. Coinage is the most prevalent documentary source for the period, but is the most under-used, and the techniques used and discussed in this thesis will enable others to explore Northumbrian pennies and their contexts from a broader range of perspectives. This will enable fuller understanding of the start of the Viking Age in Britain and expand knowledge of early medieval exchange. The next chapter describes the methods of recovery used to aggregate data for the thesis and describes the major findspots for hoards, excavated sites and other assemblages.

## 2. Findspots for Northumbrian coinage

### 2.1. Introduction

This chapter introduces the range of evidence available for Northumbrian copper-alloy coinage, organised broadly chronologically according to methods of recovery. It also provides commentary on the quality of that data and its relevance for further research. The chapter begins with a survey of hoard evidence which, throughout the nineteenth and twentieth centuries, was the key source for knowledge of the coinage. These were largely, but not exclusively, chance finds investigated by antiquarian scholars. Whilst these antiquarian investigations provided the earliest data, two further methods of recovery have expanded the known finds. These are recovery through excavation and through metal-detection. Most of these coins are single finds, but small hoards have been recovered through both methods.

Elizabeth Pirie, whose work dominated the study of the coinage, died in 2005 (Lyon 2005, 52). She was an early proponent of the contributions that metal detectorists could make to the discipline, many of whom brought their finds to her for identification and recording. Since her death, the amount of data available on Northumbrian coinage has significantly increased, due to data made available through both the Corpus of Early Medieval Coins Finds (EMC) and the Portable Antiquities Scheme (PAS). Furthermore, collaborative research projects, such as those at Torksey (Lincolnshire) and Aldwark (Yorkshire), identified that Northumbrian copper-alloy pennies are a significant part of the finds' signatures at sites associated with the Viking Great Army. These signatures now denote the presence of the Great Army's winter camps or other temporary settlements.

This chapter outlines the range of data available from hoards to excavated assemblages to single finds. It summarizes what is known of the contexts from which the coins were found, the publication history of these finds, some of the challenges the datasets present and their utility to this thesis. This is the first revised inventory of sites associated with Northumbrian coinage to be produced since *Thrymsas, Sceattas and*

*Stycas* (Pirie 2000b). Single finds data will be discussed later in the thesis (mainly in chapter 6).

## 2.2. Antiquarian finds

Serendipity played a large part in the recovery and documentation of most of these early finds. The first hoard of Northumbrian pennies known to have been discovered was from Ripon (North Yorkshire) in 1695 (Pirie 1982b). Whilst the circumstances of its discovery and the size of the parcel are unknown, the study of the contents brought the coinage of ninth-century Northumbria to the attention of antiquarians, such as Ralph Thoresby of Leeds. It is the research of antiquarians such as these, based on hoarded material, that recorded sites and data which we are still working with today. Whilst the Ripon hoard was discovered in the seventeenth century, other chance discoveries of major hoards were mostly made in the nineteenth century.

In this section, hoards are introduced in chronological order of discovery, grouping York and its wider locality at the start. Where hoards were not antiquarian finds, these are considered in subsequent sections which respectively examine discovery via excavation or through metal detection. Each section outlines, if known, the circumstances in which the hoard was discovered, the contents of the hoard that were subsequently published, an overview of the surviving data and an indication of whether it is the coins or the archaeological context that has been used to date them.

### 2.2.1. Hoards from York and the wider region

To set the context for the area, a brief review is offered here of what we know of early medieval York, before examination of hoards beginning with Ripon.

By the ninth century, it appears that York was “a town of moderate size” (Mainman 2019, 5). It was characterised by the importance of the archbishopric and its association with ecclesiastical learning. It was also an important centre for trade, making it an attractive target for Viking attack. According to the Anglo-Saxon Chronicle (ASC) the first documented raids on York occurred in 866-7 when:

the raiding-army went from East Anglia over the mouth of the Humber to York city in Northumbria; and there was great discord of the nation among themselves; and they had thrown down their king Osberht and accepted Aella, an unnatural king; and it was late in the year when they turned to making war against the raiding-army, nevertheless they gathered a great army and sought out the raiding-army at York city and broke into the city ... and an immense slaughter was made of the Northumbrians there, some inside, some outside, and both the kings were killed, and the survivors made peace (Swanton 2000, 69).

Furthermore, the ASC relates that in 876, Halfdan, a leader of the Great Army “divided up the land of Northumbria; and they were ploughing and providing for themselves” (Swanton 2000, 74).

#### *2.2.1.1. Ripon, 1695*

The Ripon hoard is the earliest known assemblage of Northumbrian coinage. Whilst circumstances of its discovery are unknown, as is the size of the deposit, it is referred to in the correspondence of Ralph Thoresby with William Nicolson, Archdeacon of Carlisle, and Thomas Gale, later Dean of York (Pirie 1982b) (see §1.2). The hoard was found at a site called Ailey Hill (see figure 2.1), which is a mound 200m to the east of Ripon Cathedral (Hall et al. 1996, 65). Excavation in 1986 demonstrated that the site has been used as a cemetery since at least the seventh century, with several successive phases of burial. These include male chest and coffin burials in the eighth or ninth centuries, potentially connected to the local monastic community, and some ninth- or tenth-century interments, “possibly after a period of abandonment” (Hall et al. 1996, 124). Concealment of the hoard is attributed to the 860s, but is unclear from the phasing of the burials, whether the site was still an active cemetery, or had been recently abandoned (Hall et al. 1996, 66). In 1846 several further Northumbrian pennies were found at the site, but no further coins have been found there since. There have been five further finds from Ripon (figure 2.2): two from unknown locations, with others from the racecourse (formerly Ripon Common), the Minster Yard and from near Priest Lane (Pirie 2000b, 68–69).



Figure 2.1: Ailey Hill from the south (obscured by trees). Lucy Moore, CC BY SA 4.0

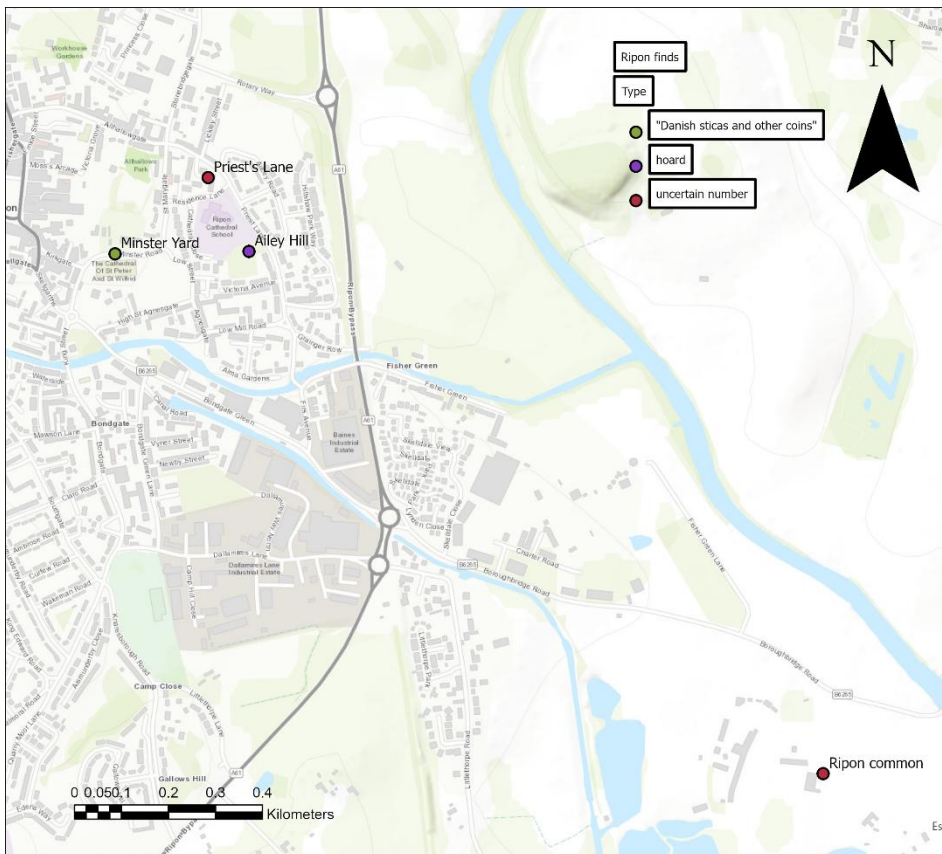


Figure 2.2: Ripon finds, clustered around Minster.

### 2.2.1.2. York, 1831

In 1831 a hoard of several hundred pennies was discovered by workmen who were digging in the area around St Mary's Abbey in York. Whilst the circumstances of discovery and the precise whereabouts of the findspot are unknown, Pirie discussed various potential locations for it, including York Public Library, Marygate or Bootham (Pirie 1994d, 27). There are scant records from the time of its recovery, but there are two letters held at Stonyhurst College in Lancashire, which record that the hoard was contained within a "vase" of unknown material (Pirie 1994d, 25). It is unknown who excavated the cache or what immediately happened to the contents after discovery. Pirie (1994d, 26) speculated that they were sold to Henry Chapman, a taxidermist and antiquities dealer in York, who would have had the necessary connections to sell the coins on.

At some point in the nineteenth century, the coins entered the collection of Stonyhurst College, which subsequently sold them in 1989, and the coins are now dispersed. The hoard was examined at Stonyhurst, prior to the 1989 sale, by Elizabeth Pirie. As a result, she was able to compile a catalogue of the hoard, published in 1994 with accompanying plates (Pirie 1994d). The hoard comprised coins of Eanred, Aethelred II, Redwulf, Archbishop Wigmund, Osberht, Archbishop Wulfhere and a group of what was then termed irregular issues (see figure 2.3).

<b>Authority</b>	<b>Number</b>
Eanred	36
Wigmund	39
Aethelred II	156
Redwulf	9
Osberht	8
Wulfhere	7
Irregular	60
<b>Total</b>	<b>315</b>

Figure 2.3: Coins from St Mary's Abbey Hoard, based on Pirie (2000)

### 2.2.1.3. *St Leonard's Place (York), 1842*

The St Leonard's Place hoard was discovered on 23 April 1842 when workmen were digging a drain during the construction of the De Grey Rooms at St Leonard's Place in York. The hoard uncovered was reported at the time as a corroded mass estimated to contain over 10,000 coins, found five and a half feet underground. One of the finders reported that a pot containing the hoard was broken by a pickaxe. The hoard passed into the hands of a local silversmith, Mr Hewison, who began to sell the coins off at sixpence each (Roach Smith 1846). It is not known how many coins were lost in this fashion.



Figure 2.4: De Grey Rooms in York. Author: [Tilman2007](#) CC-BY-SA 4.0

Despite these sales, parcels of coins from the hoard were examined by several individuals. Three of the analyses come from one article (Roach Smith 1846), but it is unclear from the report whether the groups were all viewed together or separately, in which case some of their observations might be duplicates (figure 2.5). The largest portion - 2258 coins - examined by Mr Cuff, was due to be published later in its entirety, but the publication did not take place; Cuff's collection was subsequently sold (Rashleigh 1868). A further selection of coins was described in an article examining the Trehiddle Hoard, in which Rashleigh (1868) described the hoard as comprising 3000 coins, of which he was able to examine an unspecified number, listing those he did view. The number of people examining the hoard demonstrates the two things: that

there was considerable variation in the sample available to different researchers, and that there was increasing interest in the coinage, perhaps as a response to the discoveries at Hexham and in York in previous years.

There is still some confusion over the total number of coins in the hoard: Roach Smith (1846, 230) believed the report of 10,000; Rashleigh (1868, 152) estimated 3000; Pirie (2000b, 52) estimated that the hoard comprised 5000 coins, of which 3000 were known. Whilst it is unclear what happened to the various groups of coins, there are now 1914 coins in the Yorkshire Museum’s collection which are attributed to this hoard (see figure 2.6). It is not known whether any of the coins in the Yorkshire Museum’s collection were those examined by Rashleigh. Looking at the proportions of issues records by Smith, Haigh, Cuff and Rashleigh, as well as those extant in the Yorkshire Museum collection, as shown in figure 2.7, representation is broadly similar across the four antiquarian analyses, but there is some variety when it comes to representation of coinage of Aethelred II with the Yorkshire Museum attributing 74% of their St Leonard’s Place assemblage to his reigns. For the kings and bishops who minted less coinage, all five selections are broadly similar in representation. The only selection to make any quantifiable attribution to the ‘irregular’ (derivative) issues is the Yorkshire Museum.

	1844						1865	
	C. Roach Smith		Daniel Haigh		Mr Cuff		Mr Rashleigh	
	No.	%	No.	%	No.	%	No.	%
Eanred	66	19.2	157	18.1	531	23.54	223	18.4
Aethelred II	226	65.9	457	52.8	919	40.7	672	55.4
Redwulf	5	1.5	19	2.2	63	2.8	24	2.0
Osberht	12	3.5	45	5.2	61	2.7	57	4.7
Eanbald II	1	0.3	3	0.1	1	0.04	4	0.3
Wigmund	30	8.7	94	10.9	237	10.5	124	10.2
Wulfhere	3	0.9	13	1.5	23	1.0	16	1.3
Uncertain	-	-	78	9.0	257	11.4	94	7.7
Illegible	-	-	-	-	166	7.4		
Total	343		866		2258		1214	

Figure 2.5: Concordance of described finds from antiquarian publications

Issue	Number of coins	Proportion %
Eanred	219	11.4
Aethelred II	1418	74.0
Redwulf	29	1.5
Eanbald II	5	0.3
Osberht	77	4
Wigmund	91	4.8
Wulfhere	11	0.5
Irregular	64	3.5
<b>Total</b>	<b>1914</b>	

Figure 2.6: finds according to authority from St Leonard's Place hoard, now in Yorkshire Museum

#### Comparison of identified coins in parcels of the St Leonard's Place hoard

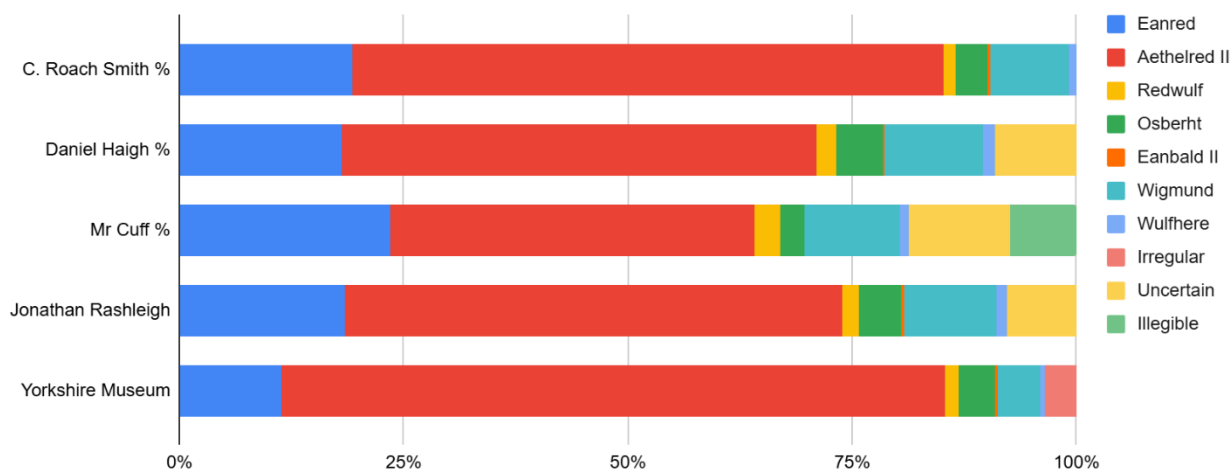


Figure 2.7: comparison of identified coins between various examined groups of material in the St Leonard's Place hoard.

This 1842 hoard is not the only cache of Northumbrian pennies to have been found in St Leonard's Place. In 1833, "forty-seven or more" coins were found concealed there, "within the rampart, near Bootham Bar" (Pirie 2000b, 52). These are in the Yorkshire Museum collection but can no longer be distinguished in the trays from the rest of the collection (Pirie 2000b, 52). Two fragments of early medieval stone sculpture were

found in St Leonard's Place "near the site of the ancient Hospital of St Peter" (Collingwood 1908, 180). Both are fragments of cross shafts: one is inscribed and dates to the late seventh to early ninth century; the other has a vine scroll motif, as shown in figure 2.8, and is dated to the ninth century (Lang 1991, 108–110). This suggests that there may have been a church located nearby in the ninth century and could potentially associate the hoard with ecclesiastical wealth.

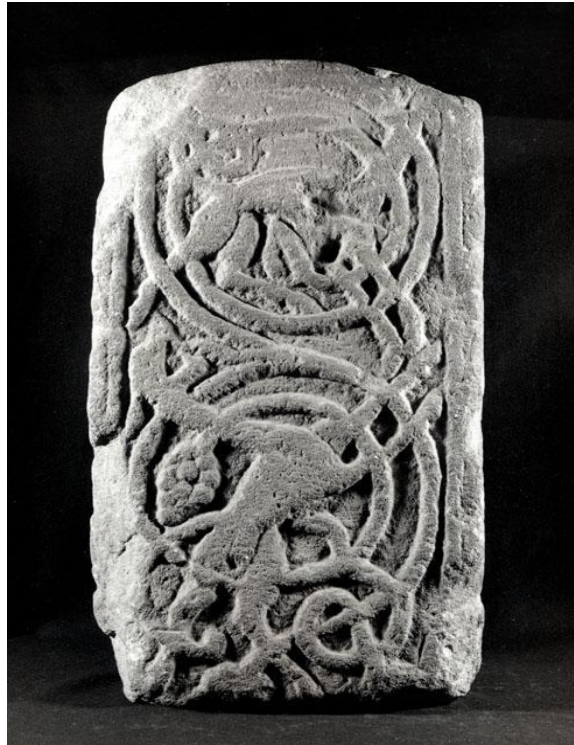


Figure 2.8: York St Leonard's Place 02, ninth-century cross shaft with vine scroll(Lang 1991, 108–110)

#### 2.2.1.4. Bolton Percy, 1846, 1967

Now considered to be a single hoard, caches of Northumbrian pennies were discovered on two occasions a century apart at Bolton Percy (Archibald 1973, 60; Woods 2015). The first portion of the hoard to be discovered was found in Autumn 1846 by a labourer called William Foster, who was digging deep drainage trenches close to the River Wharfe and the Midland railway, between the villages of Ulleskelf and Bolton Percy (North Yorkshire) (Fennell 1848, 128). This find comprised "several thousand" Northumbrian pennies alongside fragments of leather. Some of the coins were recovered and examined by William Fennell, who published details of the group in the *Journal of the British Archaeological Association* (Fennell 1848). He listed coins of

Eanred, Aethelred II, Redwulf, Wigmund, Wulfhere, Houad and Eardwulf; the latter two are moneyers rather than authorities. Coins from this find were purchased by the Yorkshire Museum, Leeds City Museum and Doncaster Museum (Pirie 2000b, 56). The second portion of the hoard was discovered by two schoolboys in 1967. The young men discovered coins, which they gathered in milk bottles and took home (Woods 2015). They then reported the find to their teacher, who in turn contacted the Yorkshire Museum. The then keeper of the museum, G. F. Willmot, excavated the findspot. He discovered more scattered coins, as well as two further groups: one inside an earthenware vessel; the other still echoing the shape of what might have been a wooden box (Pagan 1973).

After the discoveries of both deposits, the coins were dispersed both to public institutions and to private collectors. The Yorkshire Museum has 1488 coins from the 1846 find and Leeds City Museum and Doncaster Museum have 30 and 126 coins, respectively (Pirie 2000b; Woods 2015). From the 1967 find, the Yorkshire Museum has 246 coins and the British Museum 29; the Yorkshire Museum also has the pot in which part of the second portion of hoard was found, as well as fragments of textiles, leather, wood and a nail also associated with the hoard (Woods 2015).

The coins discovered in 1967 were examined by numismatists Hugh Pagan and Stewart Lyon, see figure 2.10, prior to their sale at Sotheby's in 1971, and were subsequently published (Pagan 1973). The Yorkshire Museum purchased 246 coins and the container from the sale and the British Museum purchased 29 (Pagan 1973, 1; Pirie 2000b, 56). The remainder were dispersed, some of which can be traced through onward auction sales as shown in figure 2.9 (CNG Coins 2018). The Yorkshire Museum has the largest holding from the hoard, including material from both the 1846 and 1967 discoveries. Due to historic issues with catalogue maintenance, it is now not always possible to completely identify which coins are from which parcel. Figure 2.11 provides maximum and minimum figures for this, as described by Pirie (1996, 17–18).

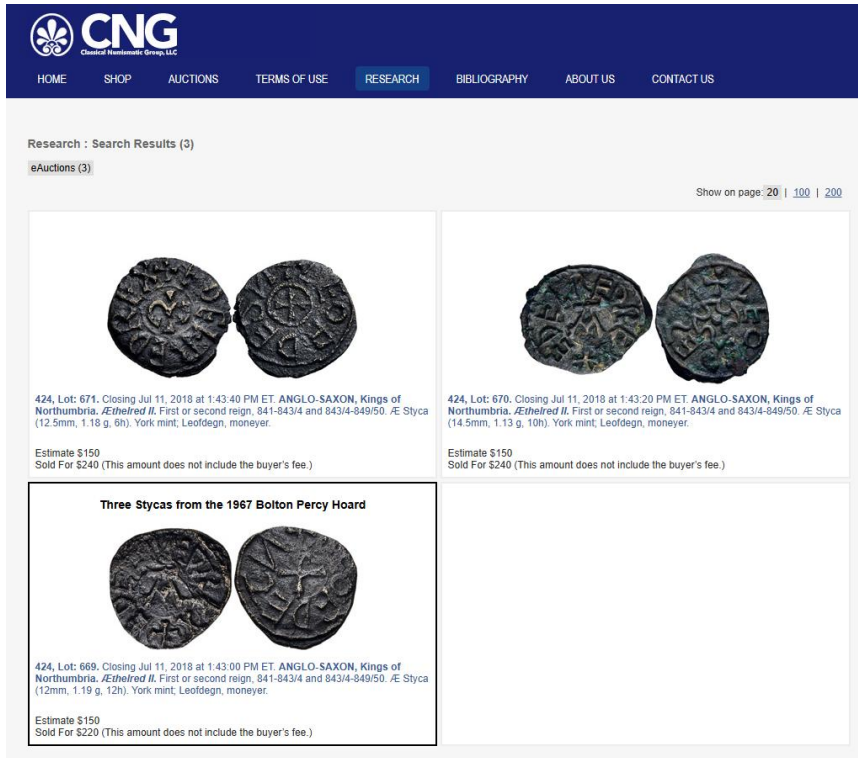


Figure 2.9: Screenshot of three Bolton Percy coins from the M. Lessen collection sold in e-auction 424 by Classical Numismatics Group LLC. (CNG Coins 2018)

Authority	Number
Eanred	213
Aethelred II	762
Redwulf	38
Osberht	75
other royal'	15
Eanbald II	3
Wigmund	214
Wulfhere	15
Irregular	397
Uncertain	43
Total	1775

Figure 2.10: Finds according to authority Bolton Percy hoard, 1967 (Pagan 1973)

Authority	1847		1967
	<i>Minimum no.</i>	<i>Maximum no.</i>	
Eanred	93	261	14
Eanbald II	1	1	2
Aethelred II	348	727	78
Redwulf	7	25	4
Wigmund	20	56	8
Osberht	14	43	4
Wulfhere	0	10	4
Irregular	89	275	130
Unidentifiable	-	-	56
<b>Total</b>	<b>613</b>	<b>1469</b>	<b>300</b>

Figure 2.11: Finds from Bolton Percy in the Yorkshire Museum (Pirie 1996, 17–18)

The contents of the hoard were dated by Pagan (1973, 2) to the “very end” of the Northumbrian coinage and its concealment is associated with the Viking attack on York in 867 (Woods 2015). This is based on the range of coin types in the hoard and the fact that its location of concealment is approximately 15km from York. The pot that part of the hoard was concealed in is made of Badorf ware, which was imported from the Rhineland and occurs at four sites in York dating from the mid-ninth to early eleventh centuries: 16-22 Coppergate (Mainman 1990); 17-21 Piccadilly (Lilley 1991); 38 Piccadilly (Jennings 1992); Fishergate House (Vince 2004). However, these are all small sherds; the only complete vessel from Yorkshire is the hoard container. Both ninth-century hoards from Westerklijf on Wieringen in the Netherlands were also concealed in Badorf ware vessels (Coupland 2006, 242). Whilst Westerklijf I was deposited c.850, Westerklijf II perhaps dated to thirty years later, and both hoards had been associated with Viking activity on the island (Coupland 2006, 242).



*Figure 2.12: Bolton Percy vessel with some coins from the hoard. Courtesy of Yorkshire Museum CC BY SA.*

Nothing is known about the villages of Ulleskelf and Bolton Percy during the ninth century. Neither village church has associated early medieval stone sculpture, which might have indicated an earlier ecclesiastical presence. As of December 2024 there were no finds recorded locally with the Portable Antiquities Scheme, which might indicate other activity in the ninth century. The only potential connection is that name Ulleskelf is said to be Old Scandinavian in origin and was recorded in the Domesday Book as Oleschel (Mills 2011).

#### *2.2.1.5. Other York hoards*

Two caches of coins were discovered close to one another in Coney Street c.1760: one group of Northumbrian pennies, and one of Carolingian coins. Previously considered to be two separate hoards, they are now considered as part of the same hoard (Williams 2020, 104–106). Similar in size to the York 1831 hoard, is the group of 400 Northumbrian pennies uncovered on the site of York Art Gallery in 1879 (Pirie 2000b, 52). No details for

these coins are known. Smaller hoards have also been found, described by Pirie (2000b, 52–53) as ‘purse-hoards’ including:

- the Railway Hoard (1840) of thirty ‘silver stycas’
- an unknown number at Micklegate Bar (1827)
- an unknown number, described as City Walls (1846), but with no precise location

### 2.2.2. Kirkoswald, 1808

The Kirkoswald hoard was discovered in 1808. Its recovery was described in the acquisitions catalogue of the Society of Antiquaries of Newcastle in 1814 (Pirie 1982a, 2). This reported that a few years earlier a large tree had blown down near Kirkoswald (Cumbria) and amongst its roots was found a “large earthen vessel full of coins”. The precise location of the findspot is not known today and neither is the identity of those who discovered it. The hoard comprised hundreds of copper-alloy pennies and a ninth-century trefoil silver ornament (see figure 2.13). At the time of discovery, it was reported that the hoard contained over 700 coins (Lysons and Lysons 1816). However, according to Hawkins (1841, 44), who was Keeper of Antiquities at the British Museum, there were 542 coins within the hoard (see figure 2.13). Hawkins (1841, 44) describes the kings and bishops whose issues are found in the hoard. Notably, he does not describe any of the coins from the hoard as “illegible”. However, Pirie, who examined some material held privately, described 23 as ‘irregular’; she also stated that it was unclear whether the coins she examined were included in Hawkins’ report (Pirie 2000b, 73).



Figure 2.13: Trefoil ornament from the Kirkoswald hoard. © [The Trustees of the British Museum](#). Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\) licence](#).

Authority	Number
Archbishop Eanbald II	1
Eanred	99
Archbishop Wigmund	58
Aethelred II	350
Redwulf	14
Osberht	15
Archbishop Wulfhere	5
Total	542

Figure 2.14: Contents of the Kirkoswald Hoard, based on Hawkins (1841) in Pirie (2000b)

The whereabouts of the majority of the coins is currently unknown, although thirty-nine are in the collection of Tyne & Wear Archives & Museums. Six were donated to the museum of the Society of Antiquaries of Newcastle in 1814 by the Atkinson family of County Durham, who had an estate at Temple Sowerby close to Kirkoswald (Pirie 1982a, 3). A further thirty-three were donated to the society in 1851 (Pirie 2000b, 73). The silver trefoil ornament was acquired prior to 1816 by the British Museum – potentially from the sale of the collection of the antiquarian Richard Gough (Wilson 1964). The whereabouts of the vessel that the coins were contained in is unknown.

The first written reference to the parish of Kirkoswald is recorded in 1167. However, stone sculpture dating to the ninth or tenth century was found in the church, indicating an earlier date for its foundation. Some time prior to 1907, an axe, identified as “a good specimen of the Anglo-Saxon or Danish Battle Axe” was found nearby at a place called

High Barn (O’Sullivan 1980, 422). O’Sullivan (1980, 321–322, 327) suggested that the hoard was associated with ecclesiastical wealth concealed in the face of Viking expansion in the region. She was, however, agnostic about the dating, citing others with a range of c.855-865 (O’Sullivan 1980, 322). However, Williams (2020, 105) has since suggested that since the hoard is one of mixed metal – copper-alloy and silver – it could be wealth accumulated as a result of Viking activity and concealed by someone from Scandinavia. Williams further supports this by noting that there is a nick for testing silver in the trefoil ornament, which is a characteristically Scandinavian practice (Williams 2020, 106).

### 2.2.3. Hexham, 1832

The Hexham hoard was discovered on 15 October 1832 (Thompson 1956, 69). It consisted of approximately 8000 copper-alloy pennies, inside a copper-alloy vessel, often described as a bucket. The hoard was discovered accidentally by the sexton of Hexham Abbey and a gravedigger, who were digging the grave of a local man in an area close to the abbey, known as Campy Hill. The grave itself was dug to the west side of the north transept of the building, three yards from the wall of the church (Adamson 1834, 301). The sexton alerted the curate, a Reverend Airey, who by his “prompt interference secured the safe deposit of the bulk of the coins” (Adamson 1834, 78). He notified John Adamson, a local antiquarian, of the find. Adamson subsequently examined and published the hoard in *Archaeologia*, the journal of the Society of Antiquaries of London. The first publication was in 1834 which was followed by an additional article in 1836, which described a further parcel of coins from Hexham that had come to light (Adamson 1836). In contrast to some earlier finds, these publications show that Adamson recognised the national significance of the find and the importance of sharing it with others.



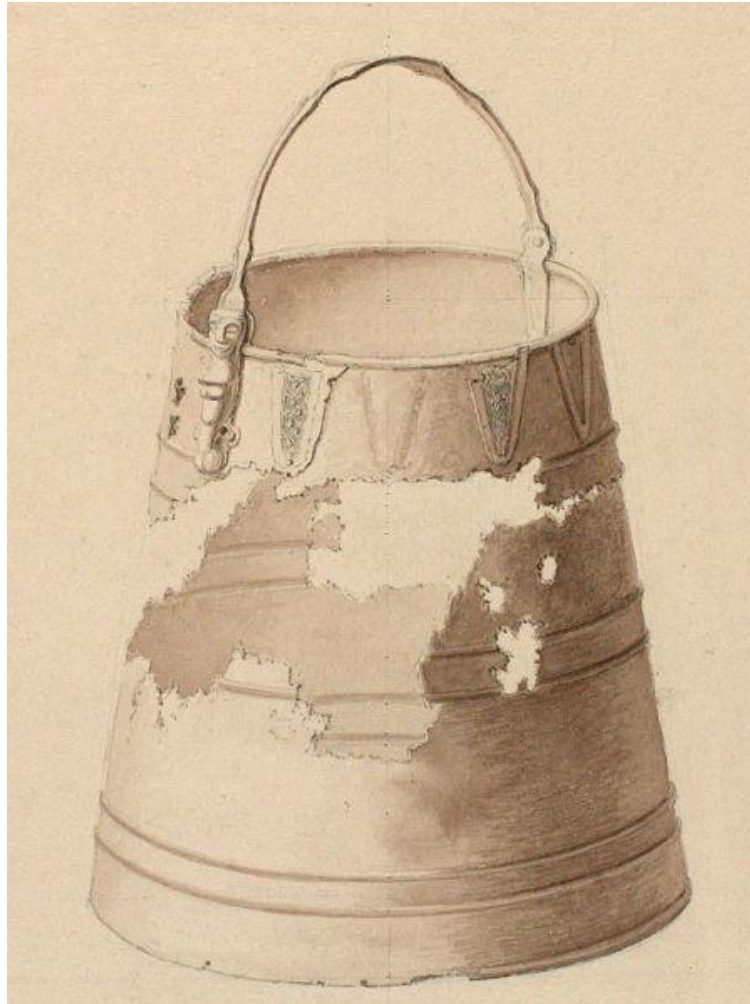
Figure 2.15: Penny (E.7769) from the Hexham hoard issued by Archbishop Wigmund of York with coins minted by moneyer Coenred © **The Trustees of the British Museum**. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\)](https://creativecommons.org/licenses/by-nc-sa/4.0/) licence.

Despite the statement that the hoard originally contained 8000 coins, Adamson described how those that came to Mr Airey numbered approximately 4960, with a further “2000 dispersed”. However, these estimates are perhaps more conjectural than they may seem, since Adamson added the caveat “supposedly” when describing Airey’s salvage (Adamson 1834, 78). From this material, Adamson was able to publish the discovery and included 945 illustrations of coins from the hoard. These were later analysed by Pirie and deemed proportionally representative of the hoard (Pirie 1987a, 257). Adamson identified and organised them according to authority and then moneyer. Significantly he also recognised that there were pennies in the hoard that featured legends in a “confused manner” (Adamson 1834, 107). These are synonymous with Pirie’s ‘irregular’ issues, and I refer to them in future chapters as derivative issues (see §1.2)

<b>Authority</b>	<b>Number</b>
Eanbald II	60
Eanred	2000
Archbishop Wigmund	800
Aethelred II	2000
Redwulf	100
“Dispersed”	2000
<b>Total</b>	<b>6960</b>

*Figure 2.16: Reconstruction the coins from the Hexham Hoard, based on Adamson (1834, 1836) and Pirie (2000b)*

Regardless of the number of coins originally in the hoard, it is assumed that its contents recorded in the plates produced by Adamson, as well as coins that are known from museum collections, are broadly representative of its original composition (Lyon 1955; Pagan 1974; Pirie 1987a). The hoard features coins of kings Eanred, Aethelred II and Redwulf, as well as archbishops Eanbald II and Wigmund. The hoard contains no coins minted by either King Osberht, or Archbishop Wulfhere (see also Smith (1857). Initially, Adamson dated the deposition of the hoard to c.867 and linked its concealment to Viking activity (Adamson 1834, 101). The absence of the coins of both Osberht and Wulfhere has more recently led to a change in the estimation of the hoard’s concealment to early in the second reign of Aethelred II (Lyon 2017, 17). This dating is based on analysis of the hoard assemblage, rather than any archaeological or historical context.



*Figure 2.17: Anglo-Saxon bronze bucket from Hexham illustrated by James Basire, ink and pencil drawing showing damage to vessel (Adamson 1834, fig.pl. XXXIII)*

The coins were found inside a copper-alloy vessel (26.4cm in height), which was “seriously injured by the blows it received” during the discovery (Adamson 1834, 281). Stylistically the vessel belongs to a Northumbrian artistic tradition, where its v-shaped panels are reminiscent of interlace on insular manuscripts (Wilson 1961). The bucket (shown in figure 2.17) is unusual in that the sides are also made of copper-alloy; more often they are made of wood such as the example from Little Wilbraham (Cambridgeshire) (Deck 1851). After the discovery of the hoard, the coins were sold to a variety of museums and private collectors. The British Museum made an initial selection of 296 specimens that were not already represented in its holdings, as well as adding the copper-alloy vessel in which the hoard was found, to its collection (Manville 1993, 99). Adamson supervised the parcelling up and sale of the contents of the hoard,

with parcels going to the Manchester Art Gallery (Sugden and Warhurst 1979), and the Museum of Antiquities in Newcastle upon Tyne, with smaller parcels to the Yorkshire Museum and Whitby Literary & Philosophical Society (Pirie 2000b, 69).

Hexham Abbey is a significant location for a hoard to be found since it was an important ecclesiastical centre in the ninth century. Like Ripon, founded by St Wilfrid in the seventh century, the Abbey was built around a crypt, which re-used Roman stone from nearby (Bidwell 2010, 81). During the ninth century the bishopric was subordinate to that at York. There are forty-nine fragments of stone sculpture from Hexham Abbey which could date to the ninth century or earlier, including architectural fragments, as well as a grave marker (Cramp 1981). High-status metalwork, including the Hexham plaque, which dates to the seventh or eighth century, and the eleventh-century Hexham Chalice, was uncovered between 1830 and 1860 during building works at the abbey. They indicate that both before and after the ninth century, extreme wealth in the form of ecclesiastical metalwork was held at Hexham Abbey (Bailey 1974, 158).



*Figure 2.18: Ninth-century grave marker from Hexham (Cramp 1981, 181–182)*

#### 2.2.4. 'Bath', 1867-1868

A group of 25 Northumbrian pennies were discovered in Bath in 1867-8 in the foundations of the White Hart Hotel. They were found alongside coins dating to the reign of James II and two medals – one of which dates to 1816 (Dolley 1965, 199). One suggestion to explain the presence of a group of coins so far from their usual area of circulation is that they are a genuine parcel of coins from the Kirkoswald hoard (see §2.2.2.) and the group of material reflects the interests of a local collector (Dolley 1965, 199). Pirie (2000b, 88) proposed that considering the discovery of the Opera House hoard in London (see §2.3.7.) this could be a primary deposit from the area, re-deposited after discovery. Bath in the mid-to-late ninth century was an ecclesiastical centre, and in 864 is recorded as part of the kingdom of Mercia, rather than Wessex (Aston 1986, 76). Excavations at Bath Abbey also found evidence for the early minster, including vine scroll sculpture (Egging Dinwiddy et al. 2019). The hoard is included because if there is doubt over its provenance, there is agreement that the coins represent a hoard, or parcel, that is worthy of measured consideration.

Authority	Moneyer	Number
Eanred	Aldates, Fordred, Monne, Wihtrud	5
Aethelred II	Alghere, Brother, Eanred, Eardwulf, Fordred, Leofthegn, Wendelberht	11
Wigmund	Aethelhelm, Aethelweard, Coenred, Hunlaf	6
Osberht	Eanwulf, Monne	2
Derivative	-	1

Figure 2.19: Coins from the 'Bath' hoard (Pirie 2000, 88)

#### 2.2.5. 'Lancashire', 1800s

Discovered in 1800s, the preservation of these coins has been attributed to Reverend A E Mills, a clergyman and teacher who worked in Lancashire Bolton, Whalley and Padiham from 1884 to 1917 (Clough 1980, 106). It is assumed that Mills acquired the assemblage during his time in the area. He subsequently moved to Essex and the parcel was donated to Ipswich Museum by his wife in 1922 (Clough 1980; Pirie 2000b,

73). It is also possible, although not evidenced, that it could be a parcel from a larger hoard. Whilst the circumstances of discovery are lost, there are other hoards noted from the area, including the Vicarage Garden hoard of 1914 from Lancaster, which contained c.20 coins and the Castle Head hoard of 1765 from Grange, with c.95 coins (Pirie 2000b, 73).

<b>Authority</b>	<b>Moneyer</b>	<b>Number</b>
Eanred	Heardwulf, Aldates, Fordred, Monne, Odilo,	7
Aethelred II	Alghere, Cunemund, Eanred, Leofthegn, Monne, Wulfred, Wihtred, Eardwulf	21
Redwulf	Cudberht, Monne	2
Osberht	Winiberht, Monne	2
Wulfhere	Wulfred	2
Derivative	-	18

Figure 2.20: Coins from the 'Lancashire' hoard (Pirie 2000, 73)

### 2.2.6. Talnotrie, 1912

The Talnotrie hoard was discovered in Dumfries & Galloway in Autumn 1912, by a cottager called Mrs Gordon who was adding peat to a fire in her home. She noticed a metal object drop from the bottom of one of the peat sods and subsequently found several other metal objects, although a small amount of silver had already been melted in the fire (Maxwell 1913). The finds came to the attention of the Provost of Newton Stewart, the nearest town to Talnotrie, and the antiquarian Herbert Maxwell, who both went to investigate them. They spoke to Mrs Gordon's husband, who showed them the land where the peat was cut. The objects appeared to Maxwell to have been deposited on glacial clay underneath the peat (Maxwell 1913, 13). The depth of the peat was not recorded by Maxwell, and there is no data for peat depth in the area where the hoard was found, as of 2024 (NatureScot 2024).

The hoard was published by Maxwell in 1913, and he listed the contents as including: a lead weight inlaid with copper-alloy, insular metalwork; a copper-alloy pin head; a silver strap end decorated with a zoomorphic niello design; a pair of silver wire loops; a plain

gold ring; copper-alloy cross fragment; pieces of green glass; two spindle whorls; a piece of jet; a piece of raw agate; a lump of beeswax; as well as twelve coins, some of which are shown in figure 2.19. The coins from the hoard comprised: six Northumbrian pennies; four silver pennies of Burgred of Mercia (853-74); one Carolingian cut denier; and one Abbasid cut dirham (Maxwell 1913). The cut denier dated to the reign of Louis the Pious (Pirie 2000b, 77).



Figure 2.21: Talnotrie hoard assemblage © National Museums Scotland

Maxwell’s paper provided detailed discussion of the non-numismatic finds, but the coins were merely listed, and the Northumbrian pennies noted only as ‘including one of Wulfhere, Archbishop of York, A.D. 854-910, and one of Osberht, King of Northumbria, A.D. 845-867’ (Maxwell 1913, 16). According to Pirie (2000b, 77), the Northumbrian pennies also comprised one each of Aethelred II and Redwulf, and two unidentified coins. In Maxwell’s article the artefacts were all illustrated, but not the coins. The hoard subsequently entered the collection of the National Museums Scotland (see figure 2.21), although it is important to remember that due to the nature of its discovery, it is likely that not all the contents of this hoard were recovered (Graham-Campbell 1978, 118). No container was recorded.

<b>Authority</b>	<b>Moneyer</b>	<b>Number</b>
Aethelred II	Eanred	1
Redwulf	Coenred	1
Osberht	Eanwulf	1
Wulfhere	Wulfred	1
Unidentified	-	2

*Figure 2.22: Northumbrian coins from the Talnotrie hoard*

Talnotrie was described by Maxwell as “a tract of wild ground on the north-western flank of Cairnsmore o’ Fleet (2300 feet) ... formerly a sheep farm but is now reserved for game by the Duke of Bedford”. The paper goes on to note that there was a single house nearby (Maxwell 1913). Other than the hoard, the only other local archaeological sites are prehistoric hut circles and the remains of a rectangular building described by Historic Environment Scotland of an “unassigned period” (Canmore ID 63576). Graham-Campbell (1978, 115) estimated that the hoard was deposited c.875 and was likely to be a “native hoard”. It has also been suggested that the historical record might enable its deposition to be connected either to the campaign of Ivar into Strathclyde in 870-1 (Mac Airt, Mac Niocaill and Mac Airt 1983, 327) or that of Halfdan in 874-5 who ‘ravaged among the Picts and the Strathclyde Britons’ (Whitelock 1961, 48; Webster and Backhouse 1991). The hoard has been compared to the Galloway hoard, an assemblage of high value metalwork found in 2014 and acquired by National Museums Scotland in 2017 (Goldberg 2023; Horne 2023). However, the Galloway hoard is

suggested to date a generation later, to c.900, so does not support an association with the events of the 870s.

## 2.3. Excavation

During the late nineteenth and twentieth centuries archaeological excavation has yielded new information about Northumbrian pennies, which have been excavated from both settlement and burial contexts; they have also been discovered as individual finds and hoards.

### 2.3.1. Kiloran Bay, 1882, 1883

Kiloran Bay is an area on the western side of the island of Colonsay in the Inner Hebrides (Scotland). A burial mound there was excavated in two phases in 1882 and 1883 by Malcolm M'Neill (Graham-Campbell 1998, 122). The mound was built on top of a rectangular chamber constructed of schist slabs. Over this grave a boat had been upturned and placed before it was covered over. The first phase of excavation in 1882 identified the boat, the body and the grave goods; the second phase in 1883 excavated a horse skeleton and discovered that two of the schist slabs were incised with crosses. The surviving grave goods included: a sword, spear head, axe head and shield boss, all made of iron; a set of copper-alloy balance scales with seven lead weights, six of which were inset with insular metalwork, and four copper-alloy studs. After the excavations, three Northumbrian pennies were discovered on the site of the burial mound, as sand from where the grave had been excavated was blown away. The discovery was published in *The Proceedings of the Society of Antiquaries of Scotland* and included plans drawn by William Galloway, who had not visited the site, based on M'Neill's notes. Evidence for life in ninth-century Colonsay also includes a settlement dated to c.800 at Machrins, as well as fragments of stone sculpture (Mac Lean 1985, 402). Graham-Campbell and Batey suggested a date for the burial of c.900, comparing it to a similar grave at Balladoole on the Isle of Man (Graham-Campbell 1998, 122).

The three Northumbrian pennies are assumed to be part of the burial assemblage (Anderson 1907). One of the coins, which is now lost, was described by Anderson (1907, 407) as “illegible”. However, the other two coins are in the collection of National Museums Scotland, along with other finds from the grave (Stevenson 1966, Plate1: 22, 43). One was issued by Archbishop Wigmund of York with the moneyer Coenred; the other is a coin of Aethelred II with the moneyer Fordred (Pirie 2000b, 78). Both coins are pierced through the centre, and Pirie (2000b, 78) suggested the holes indicated that the coins might have been used “as ornaments”. It has also been suggested that the piercing was made so that the coins could be attached to weights (Williams 1999, 27).

Authority	No. of coins
Wigmund	1
Aethelred II	1
Irregular	1

Figure 2.23: Finds from Kiloran Bay boat burial



Figure 2.24: The grave was situated to the upper right of the bay (circled). Isle of Colonsay: Kiloran Bay by Chris Downer CC-BY-SA

There are similar graves found on the nearby islands of Arran and Oronsay. On Arran, at King's Cross Point (see figure 2.25), the excavation of the remains of a boat grave were published in the Proceedings of the Society of Antiquaries of Scotland (Balfour 1909). The assemblage included human bone (later identified as that of a woman), alongside burnt remains of iron, copper-alloy, decorated whale bone and one copper-alloy penny of Wigmund with moneyer Coenred (Pirie 2000b, 78). The burial has been dated to c.900 based on the grave goods, so could be contemporary to the Kiloran Bay grave (Graham-Campbell 1998, 122). Boat graves occur at other locations in Scotland. One example close to Colonsay and Arran was excavated on Oronsay, but no coins were part of the assemblage (Anderson 1907).



*Figure 2.25: Site of Viking burial at King's Cross Point, Arran. Gordon Brown CC-BY-SA*

### 2.3.2. Whithorn Priory, 1880s to 2020s

Whithorn Priory (Galloway, Scotland) was a focus for the cult of St Ninian, a fifth-century British saint first documented by Bede in the early eighth century. The site has undergone multiple phases of excavation in the last 140 years. The first phase was led by antiquarian William Galloway in the 1880s which stabilised the ruins of the medieval priory and discovered the Latinus stone, a mid-fifth-century memorial bearing a Latin inscription. The second phase was led and published by C A R Radford (1943) who

excavated the remains of the early medieval church. The third phase of excavations was led by Roy Ritchie from 1957 to 1967, which excavated thirteenth- and fourteenth-century bishops' graves and demonstrated that there were early medieval deposits under the quire, although this excavation went unpublished. In 1972 and 1975 C J Tabraham excavated the area to the south of the church, demonstrating that there were still extensive deposits to be investigated (Tabraham 1979). This work influenced the fifth phase of excavations from 1984 to 1991, initially led by Peter Hill. From 1986 the excavations were led by the newly established Whithorn Trust (Hill 1997). Hill's excavation was the first to discover coinage on site. Research is ongoing, with recent work revisiting skeletal and archive material from earlier excavations to learn more about the site's origins (Rinaldi 2020).

Coins excavated in the fifth phase of work indicate “more sustained economic activity” and “evidence of a contact zone between secular visitors and the ecclesiastical community” (Hill 1997, 47). The early medieval coin assemblage was catalogued by Elizabeth Pirie and consisted of sixty-four coins, including 51 Northumbrian pennies (see figure 2.26). Of the assemblage of Northumbrian pennies Pirie (1997) attributed 26 as early silver issues and 25 coins to the copper-alloy phase of the coinage. Whilst the former demonstrates the presence and assumed use of coinage at the site in the late eighth and earlier ninth centuries, the latter copper-alloy issues are the focus of this study. They include coins of Wigmund, Aethelred II and Osberht; there are none by Redwulf or Wulfhere (see figure 2.27).

<b>Denomination</b>	<b>Number</b>
Northumbrian sceatta	8
'Styca'	51
Southumbrian sceatta	1
East Anglian penny (Beonna)	1
Penny (Edgar)	1
Penny (Cnut)	1
Hiberno-Norse penny	1

*Figure 2.26: Early medieval coin finds from Whithorn (Hill 1997)*

Authority	Number
Eanred	4
Aethelred II	15
Wigmund	1
Osberht	3
“Nonsense”	2

Figure 2.27: Northumbrian copper-alloy pennies from Whithorn. “Nonsense” is the term used for derivative issues (see §1.2)

### 2.3.3. Whitby Abbey, 1920s

Whitby Abbey, believed to be the location of the monastery known as *Streanæshalch* during the early medieval period, is a monastic site located on the North Yorkshire coast. The present abbey ruins date to the thirteenth century, built after the foundation was reoccupied in the 1070s, on the site of its predecessor. This original religious community was founded by Oswiu of Northumbria in 655 AD and its first leader was Abbess Hild. Renowned as the site of the Synod of Whitby and as the home of the poet Caedmon (c.657-84), Whitby Abbey is one of the most historically significant early medieval sites in Northumbria (Wilmott 2017). Hild was succeeded by Abbess Aelflaed, however after her accession, she is absent from written sources. Antiquarian publications claim that the site was destroyed by Danes around the years 867 - 870 (Atkinson 1879, xx), but there is no historical evidence for such an event. It has also been suggested that the community was already in decline prior to the supposed Viking attack, an assertion based on a lack of late ninth-century objects from excavations undertaken in the 1920s (Raleigh Radford and Peers 1943). Reid (1987, 124) supports this interpretation, adding that there was also an increased secularisation of monastic communities in the mid-ninth century, which may have also been a contributing factor.



*Figure 2.28: Whitby Abbey. From the east - Ministry of Works area of excavation to the right of the abbey ruins. Image: habiloid CC BY SA*

The abbey was excavated in the 1920s by the Ministry of Works, however both the recording and archiving of the excavations are problematic for researchers today. Very little stratigraphic recording was made at the time, some of the finds' records are confused and other records were lost or destroyed. The impact of this legacy was assessed in the 2010s by English Heritage (Mason 2016). The ensuing report aggregated the extant material from the 1920s excavations, and subsequent archaeological investigations – in 1958 by Philip Rahtz (1966) and in a number of subsequent investigations (Naylor 2004, 35–36). It demonstrated that there is stratigraphic information that can be recovered and furthermore that it can enable greater understanding of the site. It must be borne in mind though that this reassessment views much of the early medieval material as residual, so caution must be taken when thinking about the spatial dynamics of the site (Woods 2022). Whilst it was stated in 1943 that “the numerous later copper stycas ... call for no comment” (Raleigh Radford and Peers 1943, 85–86), in contrast Woods (2022) recognised that these coin finds are central to our understanding of the site, and particularly its later years and conclusion. To reconstruct the coin finds from the earlier excavations, Woods combined existing

data from site records, as well as unpublished work by Elizabeth Pirie (Woods 2022). This combination of data enables a more detailed understanding of the coinage on site.

Authority	Number
Eanred	17
Wigmund	10
Aethelred II	52
Redwulf	1
Irregular	17
Uncertain	16
Total	113

Figure 2.29: Copper-alloy pennies from Whitby (Pirie 2000b, 66, 68)

It is notable that there are no coins of Osberht or Archbishop Wulfhere of York in the assemblage from Whitby. Woods (2022) uses this evidence to suggest that there is no numismatic evidence for the continuation of trade at the site beyond the 850s, but he does caution that this assertion would be strengthened by comparison with other finds from the site’s assemblage – in particular, ceramics. However, within the ‘irregular’ issues there is at least one whose legend is derived from a coin of Osberht. Several coins were discovered in the East Cliff area of the town: a single copper-alloy issue of Eanred at St Mary’s Church in 1876; a silver issue of Aethelred I at Spa Ladder in 1931; and a silver issue of Eanred found in 1958 in the burial ground to the south-east of the abbey. These finds are held in the collection of Whitby Museum (Pirie 2000b, 66, 68).

#### 2.3.4. Lindisfarne, 1980s-90s, 2006-present

Lindisfarne, also known as Holy Island, is an island off the coast of Northumberland and is one of the most famous places in the early medieval history of the British Isles. St Aidan founded a monastery there in 635, after leaving Iona. The community there produced the Lindisfarne Gospels in the early eighth century. St Cuthbert (c.634-687) was bishop of Lindisfarne and was buried there (O’Sullivan 1995, 11). It was also the location of the first recorded Viking raid on the British Isles in 793 (O’Sullivan 1995, 38). The Anglo-Saxon Chronicle describes how the raiders “miserably devastated God’s

church in Lindisfarne Island by looting and slaughter” (Swanton 2000, 56). Despite this apparently devastating the impact on the community, its presence continued there into the ninth century, albeit reduced. Activity and development of the community is demonstrated by the acquisition of new property by Bishop Ecgred during his episcopacy from 830-45 (Rollason 2003, 245). However, the eleventh-century *History of St Cuthbert* also records that when faced with the pressure of Viking attacks, some members of the community left the island in the years c.875-883 and carried the body of St Cuthbert around their estates, eventually making a truce with a Viking Army and settling near Chester-le-Street (McGuigan 2019).

Despite the importance of the island, there has been limited investigation of its early medieval archaeology, and what has been done is not comparable in scale to that observed at other monasteries of a similar period, for example at Whithorn (Petts 2017). Nevertheless there have been several phases of discovery and excavation from the nineteenth century onwards, which include: chance finds in the 1840s by John Selby at the site of Green Shiel during the construction of a track; Brian Hope-Taylor’s unpublished excavation in 1962 along The Heugh, and several trenches in a field to the west of St Mary’s Church, also unpublished; work at the Green Shiel site in the 1980s and 1990s (Petts 2017); and two small commercial excavations at the Winery (Northern Archaeological Associates 2001) and at Castle View (Ian Farmer Associates 2007). Petts (2017) identified several issues with the preceding investigations, which included the fact that Hope Taylor’s work was unpublished, that since both the Winery and Castle View publications are unpublished reports they are not readily available to others, and that O’Sullivan and Young’s work is selective (although Petts does not specify what the selective nature of their publication is). In 2016 Durham University began a research programme, in partnership with the social enterprise Dig Ventures, which aimed to examine new areas of the site, as well as to make Hope-Taylor’s excavation archives accessible (Petts nd).

Northumbrian pennies have been found on three occasions on two different sites on the island. Two were discovered by chance in the dune covered Green Shiel area in the 1840s. A further seventeen were noted by Elizabeth Pirie to have been discovered during O’Sullivan and Young’s work at Green Shiel in the 1980s and 1990s, although she

states that only fourteen were available for her to study at the time of her publication (Pirie 2000b, 72). Green Shiel was initially identified as a rural settlement site, however it has since been re-interpreted as a site used for vellum production and as such would have been part of the monastic estate during the seventh to ninth centuries. However, the evidence for this dating is almost entirely based on the “sixteen mid-ninth-century” coins found there (O’Sullivan 2001, 42).



*Figure 2.30: Ninth century remains at Green Shiel. Copyright Debbie Hayton, used with kind permission.*

Since 2016 Northumbrian pennies and other early medieval coins have been recorded in excavations undertaken by Dig Ventures close to the site of the later medieval priory. By combining finds from these three episodes of discovery, using data from the Dig Ventures online catalogue and Pirie’s published list, a group of twenty-three Northumbrian coins can be identified (see figure 2.31). No coins of Redwulf, Osberht or Archbishop Wulfhere of York are represented in the finds. These are not the only coinage present on Lindisfarne: sceattas dating to the eighth century have also been

excavated. Notably, there are also two finds of coins issued by Aethelred of Wessex (865-871), one excavated by O’Sullivan and Young at Green Shiel, and one excavated by Dig Ventures. These are the most northerly finds of this coinage to be discovered to date and demonstrate that ninth-century coins from Wessex were reaching the site.

<b>Authority</b>	<b>Total number of coins</b>	<b>Number from Green Shiel</b>	<b>Number from Priory ('Sanctuary field)</b>
Eanred	6	2	4
Wigmund	3	1	2
Aethelred II	10	6	4
Irregular	4	0	4

*Figure 2.31: Finds of Northumbrian pennies from Lindisfarne*

**DigVentures**

Digital Dig Team | Lindisfarne All Records Advanced Search Log In

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**LDF 303 Coin** 🔄

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**Short Description** Anglo Saxon coin


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📌

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**Photos**



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**Registered Find Basics**

<b>Object Type</b> <a href="#">Coin</a>	<b>Object Material</b> <a href="#">Copper Alloy</a>
<b>Object Period</b> <a href="#">Medieval</a>	

---

**Interpretation**

<b>Interpretation</b>	Grey in colour. Diameter 18mm, thickness 2mm. Text on both sides visible but difficult to distinguish. Side #1 - possibly BRODR with a cross motif before the B. Side #2 text is partially dropping off the edge and very difficult to read.	<b>Interpreted by</b>	Edwin Lambert
<b>Interpreted on</b>	26-10-2021		

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**3-D Models**

No models found for this item

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**Comments**

No text data has been added

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**From Context**

**Context:** [LDF\\_2304](#)


<b>Sketch Photo</b>	<b>Short Description</b>
	Highly disturbed ploughsoil layer beneath top soil covering most of trench 2 West 2021 extension
	<b>Issued to</b>
	Doug Hopper
<b>Issued on</b>	10-9-2021

Figure 2.32: Screenshot of Dig Ventures online catalogue showing Northumbrian penny.

### 2.3.5. Flixborough, 1989-91

The early medieval settlement in the parish of Flixborough in Lincolnshire was excavated from 1989 to 1991. The excavations were funded by English Heritage (presently Historic England) and the work was undertaken by the Humberside Archaeology Partnership. However, it had been first identified by detectorists who reported their discoveries which alerted archaeologists to the site. Situated in north Lincolnshire, to the east of the River Trent, Flixborough is a high-status site with multiple phases of settlement reorganisation, dating from the seventh to the eleventh centuries. The finds from the site indicate that it was an unusually wealthy place during each phase of occupation (Loveluck 2007b). However, there is debate over the nature of the site and whether its wealth can be more plausibly associated with secular or ecclesiastical organisation. Loveluck (1998, 158) acknowledges that traits “used to identify monastic settlements” are present, but they argue that Flixborough has more in common, especially after the mid-ninth century, with “‘proto-manorial’ centres” such as North Elmham (Norfolk), Wicken Bonhunt (Essex) or Raunds (Northamptonshire). In contrast, Blair (2011) supports a monastic interpretation, based on the evidence for literacy and writing at the site. Many styli have been excavated, as well as an alphabet ring and a lead plaque (understood as part of a bone box). Alongside these are the large numbers of calf bones present, which might indicate vellum production (Blair 2011). The change in the mid-ninth century that is seen as “proto-manorial” by Loveluck, is argued by Blair (2011, 104) to be a Viking age “tabula rasa” which is then followed by re-settlement on an old, and perhaps familiar, pattern.

The excavation was published in four volumes (Loveluck 2007b, 2007a; Dobney and Dobney 2007; Evans et al. 2009). The site has an exceptionally complex stratigraphy, which is created by the successive phases of building and demolition and the re-situation of rubbish dumps, due to changes in the orientation and layout of the settlement. Material from the ninth century is found in many contexts and it is vital to remember that due to the successive movements of soil around the site, the likelihood of finds being associated with their original context is limited (Archibald et al. 2009, 402). To examine the Northumbrian pennies found on the site, the site phasing needs to be understood. The phases in figure 2.33 are either dated to the ninth century or are

contexts in which Northumbrian pennies were found. A range of finds contributed to the dating of the site, including coins, but also ceramics and other materials. Loveluck (2007b, 35) recognised that coins are highly transferable within excavation contexts, so suggested caution when using them solely for dating, and not in combination with other finds.

<b>Period and phase</b>	<b>Dating</b>
Period 3, Phase 3b	Mid-eighth to early ninth century
Period 4, Phase 4i	Early to mid-ninth century
Period 4, Phase 4i	Mid-ninth century
Period 5, Phase 5a	Mid- to late ninth century
Period 5, Phase 5b	Late ninth to early tenth century
Period 6, Phase 6i	Early to mid-tenth century
Period 6, Phase 6ii	Mid-tenth century
Period 6, Phase 6iii	Mid-tenth to early eleventh century

*Figure 2.33: Periods, phases and dating at Flixborough (Loveluck 2007b)*

The Northumbrian coins were analysed by Elizabeth Pirie, who published much of the assemblage in 2000 prior to the final report (Pirie 2000b, 79). In the final Flixborough publication she acknowledged that in 2000 “not all the relevant specimens” were known to her then, so that record is not complete (Archibald et al. 2009, 417).

Nevertheless, this analysis must have taken place sometime prior to the final date of publication in 2007 of the report, since Pirie died in 2005 (Lyon 2005). The other contemporaneous coins from Mercia, Wessex and the continent were analysed by Marion Archibald. Sixty-seven coins dating from the eighth to the tenth centuries were found at the site. Of these, twenty-seven were Northumbrian pennies: one coin was attributed to c.830-835, and the other twenty-six were attributed to c.835 – 855 (Archibald et al. 2009). The most significant aspect of the assemblage from the site is that most are derivative types. In fact, Pirie only confidently attributed five of them as official issues, which were minted by Aethelred II and Archbishop Wigmund (Archibald et al. 2009, 417).

Authority	Number
Aethelred II	4
Wigmund	1
Irregular	21

Figure 2.34: Northumbrian pennies from Flixborough, using terminology from publication (Archibald et al. 2009)

Whilst the assemblage is significant it is important to note that only two of the Northumbrian coins were from stratified contexts. The stratified finds are both derivative ('irregular'). Coin 3263 was excavated from Flixborough's Phase 6iii; 3264 from a context attributed to Phase 5b-6i (Archibald et al. 2009, 416). Phase 6iii dates to the mid-tenth or early eleventh century and 3263 was excavated from context 1462 which was a dark soil deposit (Loveluck 2007b, 109–110). Coin 3264 was excavated from context 6472, which was a large refuse deposit (Loveluck 2007a, 91), and is attributed to Phase 5b-6i, dating to the late ninth to mid-tenth centuries (Archibald et al. 2009, 416). Both are the only coin finds from the contexts in which they were found, and both are residual finds in later contexts. The twenty-five other Northumbrian pennies that were recovered from spoil heaps by metal detectorists (Loveluck 2007b, 16).



Figure 2.35: Coins 3263 and 3264 from Flixborough (Evans et al. 2009, pl. 13.2).

### 2.3.6. Lurk Lane, Beverley, 1979-82

The site of Lurk Lane in Beverley (East Yorkshire) was excavated from 1979 to 1982 by Humberside Archaeology Unit. The results of the excavations were published in 1991 (Armstrong, Tomlinson and Evans 1991, 244). The multi-period site at Lurk Lane had layers of occupation and abandonment dating from the seventh to the sixteenth centuries. These are likely to relate to activity at Beverley Minster, immediately to the north of the site, which existed from at least the early eighth century (Armstrong, Tomlinson and Evans 1991, 246–247). The chronology of the site was placed into periods and phases; Period II: Phases 2 to 4 spanned the eighth and ninth centuries (Armstrong, Tomlinson and Evans 1991, 7). The end of Phase 4A was “marked by the deposition of a hoard of twenty-three copper stycas” which were securely stratified by a sandy deposit that was “confidently attributed to the tenth century AD on ceramic and coin evidence” (Armstrong, Tomlinson and Evans 1991, 13). The hoard was buried slightly above the ground-level of a cobbled path, which ran next to an embankment and a ditch, which formed a boundary to the site, where shifting soils meant that some stratification was obscured. The coins were found in the space where a “scoop of earth” had been removed from the bankside; traces of “a dark brown, fairly fibrous, soil stain” suggest that the coins were probably buried inside a leather pouch (Armstrong, Tomlinson and Evans 1991, 13–14).

The hoard comprised coins issued by Eanred, Aethelred II, Archbishop Wigmund, as well as derivative issues. The catalogue was published as part of the excavation report and was written by Elizabeth Pirie (1991, 164–167). She categorised it as a purse hoard and compared it to finds from York (Micklegate Bar, ‘Railway’ hoard and City Walls) and Lancaster. Three further Northumbrian pennies were excavated from the site, and all are likely residual finds (see figure 2.36).

Pirie dated the deposition of the hoard to c.851, based on the presence of two irregular coins of Osberht, whose reign she dated as starting c.850 (Pirie 1991, 166). Pirie (1991, 166) associated its concealment with “local alarm”; Armstrong (1991, 244) connects the end of Phase 4A with “the tradition that the occupation of the first monastery on the site ended with the onset of Viking incursions” and closely identified its act of

concealment with Scandinavian activity. After the hoard was deposited, the site appears to have been abandoned for up to fifty years, before it was re-occupied. The finds from this subsequent phase of use represent “one of the largest collections of stratified Anglo-Scandinavian material in the Northeast of England” apart from York (Armstrong, Tomlinson and Evans 1991, 244).

Context	Authority	Number
Excavated find – Period III Phase 6A	Aethelred II	1
Excavated find – Period III Phase 6	Osberht	1
Excavated find – Period III Phase 5B	Irregular	1
Hoard – Period II Phase 4A	Eanred	1
	Aethelred II	6
	Wigmund	1
	Irregular	15

Figure 2.36: Northumbrian pennies excavated from Lurk Lane, both residual finds and the hoard (Pirie 1991)



**Title:**  
Lurk Lane Purse Hoard

**Object Name:**  
coin

**Date/Period:**  
810-842

**Location on Display:**  
Hull and East Riding Museum - Medieval Gallery

**Accession No:**  
KINCM:2005.660.835.19

Figure 2.37: Screenshot of an online catalogue entry for a derivative coin from Lurk Lane hoard (Anon). Copyright Hull and East Riding Museum.

### 2.3.7. Opera House, London, 1996

Excavations took place on the site of the London Opera House in Covent Garden in London during Spring 1996. This site had been under observation since 1989 and several trial trenches and watching briefs preceded large scale excavation. It was close to the centre of an area that had been identified as the trading settlement of early medieval London (*Lundenwic*), which had developed from the seventh century, but by the end of the ninth century appears to have been abandoned. This has been argued as the result of its inhabitants moving into the walled Roman city in response to Viking attacks (Malcolm et al. 2003, 110).

During the excavations, a hoard of Northumbrian pennies was discovered. The hoard had been buried in a layer of dark earth to the south of a defensive ditch, which is believed to have enclosed the settlement. The dark earth layer is interpreted as a marker of a change in use for the site. The spot chosen was within the boundary of the settlement and in a place where it could “easily be found again” but was also “unlikely to be disturbed” (Malcolm et al. 2003, 129). The hoard comprised twenty-two Northumbrian pennies, which were issued by Eanred, Redwulf, Aethelred II and Osberht, or were irregular (derivative) issues; no episcopal issues were present. The specialist report for the subsequent publication was prepared by Elizabeth Pirie (2003).

Authority	Number
Eanred	3
Aethelred II	7
Redwulf	1
Osberht	1
Irregular	10

Figure 2.38 - London Opera House hoard contents.

There are two aspects to consider in terms of dating the hoard: the coins present and its relationship to the layer of dark earth from which the hoard was excavated. Pirie (2003, 283) stated that it was “very probable that the cache was concealed during the Viking raids in 851”. In that year the *Anglo-Saxon Chronicle* records that: ‘350 ships came into the mouth of the Thames and stormed Canterbury and London’ (Whitelock 1961, 42). Pirie did not consider a later date for deposition to be a possibility, since the coins were in good condition, and in her opinion the condition would have been worse if they had

been circulated for longer (Pirie 2003, 283). The excavation was published in 2003 by Museum of London Archaeology Service and the coins are in the Museum of London's collection (Malcolm et al. 2003). However, in the wider interpretation of the Lundenwic site, a later interpretation and link to Viking activity was favoured, connecting the hoard to the overwintering of the Viking Great Army in 871-872 (Malcolm et al. 2003, 120).



*Figure 2.39: Northumbrian penny of Osberht from Opera House hoard, with accession number ROP95[376]<1338>. © London Museum.*

Northumbrian pennies have been found at two further sites in London. Excavations in 1989 at Leicester Square recovered two extremely worn Northumbrian pennies. Pirie (2000b, 84) suggested that at least one a derivative issue, since it had a distinctive “playing-card shape” and attributed them to the Lundenwic settlement. In 1993 two Northumbrian pennies were excavated from Bull Warf, near Queenshithe. Both coins were derivative types, one from Group A and one from Group Dii (Pirie 2000b, 85).

### 2.3.8. Bamburgh Castle, 1959-61, 1970-74, 1996-present

Bamburgh Castle, on the coast of Northumberland, was another important sites in the history of early medieval Northumbria and is accepted as the capital of the kingdom of Bernicia (Wood 2008, 11). Bede relates in his *Ecclesiastical History* that Bamburgh was of ecclesiastical significance, since its basilica hosted relics of St Oswald (McClure and Collins 1999, 119; Young and Castling 2011, 311). There have been two phases of archaeological investigation at the site. The first was run by Brian Hope-Taylor in two periods: from 1959 to 1961, then from 1970 to 1974. Whilst these excavations produced a large and significant archive of material, his findings were never published, and Hope-Taylor died in 2001. The second phase of research into the site began in 1996 with the establishment of the Bamburgh Research Project (BRP) (Bamburgh Research Project unknown). This project aimed to investigate the early medieval archaeology of Bamburgh Castle, as well as to investigate Hope-Taylor's archive and publish the site (Young 2008). Whilst the work of the BRP is ongoing, there have been several interim publications, as well as an archive of blog posts, since 2010 (Young 2008; BRP 2010, 2011; Young and Castling 2011; Kirton and Young 2017).



Figure 2.40: View of Bamburgh Castle from the north, lawn in foreground is West Ward. Image: Bamburgh Castle by Mat Fascoine. CC BY 2.0

Not only is the site significant in terms of understanding Northumbrian royal power, but the early medieval coins recovered demonstrate that it is an important site to extend our knowledge of monetary exchange of the ninth century. Coins dating to the period were found during Hope-Taylor's excavations and a number of these were published by Pirie (2000b). However, Pirie (2004, 67) did not have access to the site archives nor all of the "very substantial number of stycas" and what she was able to publish was incomplete. Of the assemblage, Pirie (2004, 67) commented that "a considerable number of them ... are irregular issues". Nevertheless, the published coins from Hope-Taylor's excavations stands at sixty-eight copper-alloy pennies, which, although incomplete, is a remarkable number from any site of this period.

During the BRP's ongoing excavations in the West Ward of the castle Northumbrian pennies have been a common find, described in an early blog post as "the now mandatory Anglo-Saxon stycas" (BRP 2011). There are twenty blog posts that mention finds of Northumbrian pennies between 2009 and 2019 (apart from the years 2013 and 2017), however little detail is given and some of the blogs duplicate information previously shared (BRP 2010). In 2009 a major find was made by the BRP when a hoard of Northumbrian pennies was excavated in the West Ward. This came from an area within Trench 3 which has been interpreted as a metal-working building. The hoard consisted of seventy-seven coins, most of which were attributed to the reign of Aethelred II with two coins issued by Archbishop Wigmund of York. One coin could also be potentially attributable to Osberht (Young and Castling 2011, 312). With the coins found in Hope-Taylor's excavations, the 2009 hoard and the assemblage excavated during the Bamburgh Research Project, the already significant assemblage has the potential to be *the* most significant in future.

In the interim, an initial comparison can be made between the details Elizabeth Pirie was able to publish and the initial attributions of the coins from the 2009 hoard (see figure 2.34). Additionally, there are numerous mentions of 'stycas' in the blog, but these are often passing references, so although information could be available, it is not currently of a sufficient quality to enable comparison.

<b>Authority</b>	<b>List of Hope-Taylor finds recorded by Pirie (2000)</b>	<b>2009 Hoard</b>
Eanred	5	8
Aethelred II	23	25
Wigmund	4	6
Wulfhere	1	-
Irregular or blundered	24	25
Uncertain or unidentifiable	10	18

*Figure 2.41 – Northumbrian pennies from Bamburgh – Hope Taylor’s excavations and the 2009 hoard.*

The hoard does not contain any coins of Osberht or Wulfhere. One possible interpretation for this is that it was concealed prior to the issue of coinage by them. Post-excavation analysis of the hoard has shown that it was wrapped in cloth and packed with organic materials, of which traces are left due to preservation in the fire that occurred in the building in which the hoard was deposited (Young and Castling 2011). Curiously, if the finds that Pirie recorded from Hope-Taylor’s excavations are to be believed, and there is no reason to deny the accuracy of her work, then the hoard was concealed within an area where coinage continued to be used and lost. Pirie (1987b), indeed, favoured the interpretation that Northumbrian pennies were produced in multiple locations within the kingdom of Northumbria.

### 2.3.9. Kirkby Stephen, 2019

In 2019 a hoard of thirty-five Northumbrian pennies was excavated from a site one kilometre to the south of the market town of Kirkby Stephen in Cumbria. The site was excavated by Eden Heritage in advance of a new housing development (Railton 2019). Nine trenches were opened in total, two of which were intended to investigate a possible earthwork. Very few archaeological features were identified and these were post-medieval in date. The most significant finds were metal detected under controlled conditions during the excavation from the spoil heap of the south end of Trench 3. They were thirty-five Northumbrian pennies, which may have “originated as a hoard, which had been disturbed in antiquity” (Railton 2019, 24). The coins were spread across a 12m long soil layer, and it has been suggested that plough activity removed them from

their original context, and furthermore that “additional coins are likely to be present” in the surrounding area (Railton 2019, 24). The coins were declared Treasure and recorded on the Portable Antiquities Scheme database, based on information provided by the finder (Whitlock 2019). The church in Kirkby Stephen has several fragments of sculpture dating from the eighth to the eleventh centuries (Bailey 1988). Several of these fragments, including that of a hogback grave marker, indicate later Scandinavian influence in the area.

Authority	Number of coins
Aethelred II	11
Wigmund	4
Derivative issues	8
Unidentified	13

Figure 2.42: Northumbrian pennies from Kirkby Stephen



Figure 2.43: LANCUM-2C5124. Copyright The Portable Antiquities Scheme CC BY SA.

### 2.3.10. York, various

York was the most significant place in Northumbria in the ninth century, and, as we have seen, during building works in the nineteenth century, several large hoards were found in the city (see §2.2). However, they are not the only finds from the city and during the twentieth century further construction projects have expanded the range of sites from which Northumbrian pennies are known. There are eighty-nine found at twenty-three sites from York (see figure 2.44). Issues from outside Northumbria have also been discovered, including coins from the kingdoms of Mercia, Wessex and Frankia (see figure 2.45).

Of the twenty-three sites in York that Northumbrian pennies have been excavated from, the three largest assemblages were found at York Minster, 16-22 Coppergate and the site of Redfearn's factory on Fishergate, respectively. During the York Minster excavations from 1970 to 1971 eight copper-alloy Northumbrian pennies, one Carolingian denier and one penny of Ecgberht of Wessex were recovered (Pirie 2000b, 54). One Northumbrian penny was found in Phase 5A/B, which dates to the ninth century and is marked by the demolition of the principia, five are from Phase 6A (6Ai and 6A/B) and two from Phase 6E. Phase 6Ai is the pre-Conquest cemetery and one coin was recovered from a grave where the body was likely contained within a chest (Phillips 1985, 91). These phases are interpreted differently by Carver (Carver 1995, 207) who begins his Period 8 with the demolition of the principia during the ninth century.

The Fishergate site produced twelve copper-alloy Northumbrian pennies, along with a coin of Aethelberht of Wessex (Pirie 2000b, 56). The third assemblage of interest in terms of size and composition is from 16-22 Coppergate where nine copper-alloy Northumbrian pennies and one denier of Charles the Bald were found (Pirie 2000b, 56). Significantly, three of these were excavated from a late ninth-century context which was "appreciably later than their striking" (Hall 1986, 17). However in subsequent publication these have been reattributed as residual deposits (Hall 2014, 705).

Site	Eanred	Wigmund	Aethelred II	Irregular	Osberht	Wulfhere	Illegible
9 Blake Street	1		1				
16-22 Coppergate	4		3				5
58-9 Skeldergate		1	1			1	
Aldwark	1						
Bedern Chapel	1						
Blue Bridge Fishergate			1	1			
Clementhorpe					1		
Clifford St	1		1				
Clifford's Tower			1				
Ebor Brewery	1		2				
Fishergate - Redfearn site	4	4	5				5
Foss Islands			2				
Marygate, Industrial school							1
Micklegate Bar		1					
Paragon St, Barbican			2				
Paragon St, Cattle Market			2				
St Mary's Abbey			1				1
Tanner Row							1
Trentholme Drive	2						
Wellington Row	1		12				
York Minster	3		2	2	1		2
York (non- specific)	1		6				1
<b>Totals</b>	<b>20</b>	<b>6</b>	<b>42</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>15</b>

Figure 2.45: Northumbrian pennies by site and authority, data from Woods' (unpublished) dataset on York, which draws on Pirie (2000b) and Abramson (2018)

Authority	Moneyer	Mint	Site	Northumbrian pennies also present?
Ecgberht of Wessex (802-39)	Tidberht		York Minster	Yes
Charles the Bald (823-77)		Quentovic	York Minster	Yes
		Troyes	16-22 Coppergate	Yes
Aethelwulf of Wessex (839-58)	Wealheard		Clementhorpe	Yes
Burged of Mercia (852-74)	Eanred		21-33 Aldwark	Yes
	Diarwulf		58-9 Skeldergate	Yes
Aethelberht of Wessex (860-65)	unknown		Fishergate, Redfearn Factory	Yes

Figure 2.46: Non-Northumbrian coins excavated in York

### 2.3.11. Monkwearmouth, 1959-86 and Jarrow, 1963-78

Whilst the sites of Monkwearmouth and Jarrow are 8 miles apart they formed the same double monastery. Most famous for its 9th-century manuscript production and being the home of the Venerable Bede, excavations began at Monkwearmouth in 1959 as the local authority wanted to know how close to the church development could be made without destroying archaeology. They continued until 1986, with a workforce primarily comprised of community volunteers (Cramp 2005). As Rosemary Cramp notes in the site monograph, recording principles changed considerably throughout the decades of excavation. Excavations began at Jarrow in 1963 and lasted until 1978 in a similar manner. Northumbrian pennies were found at both sites and are listed in figure 2.47. Cramp accepts a mid-ninth-century date for abandonment of both sites, based in part on the absence of coins from after the 840s. What is also acknowledged are potential historical references to Viking attacks on monasteries citing dates c.864 and a reference from Matthew Paris to 869-70. What Cramp (2005, 343) does say is that the rate of depopulation is unknown – it might have been immediate or much slower.

Object number	Authority and moneyer	Location	Context
Nu6	Silver. Eanred - Eaduini	Monkwearmouth	2343 Saxon MK 61 CP 6103
Nu7	Base silver. Eanred – Herred	Monkwearmouth	1656 Med1 62 MJ 6201
Nu8	Group A derivative	Monkwearmouth	1190 LS/EM MK 62 1B 6201
Nu9	Eanred – illegible	Monkwearmouth	2146 Med2 MK 67 GG 6702
Nu10	Eanred – Wulfred	Monkwearmouth	1784 Saxon MK 66 JQ 6603
Nu11	Group D	Monkwearmouth	895 Saon MK 61 DO 6101
Nu16	Silver. Eanred – Eaduini	Jarrow	2018 M-L Sax JA UZ 47 7305
Nu17	Base silver. Eanbald II	Jarrow	96 LS/EM JA 63 FM 6302
Nu18	Aethelred II – Leofthegn	Jarrow	2376 Med 2 JA 75 JX 88 7505
Nu19	Aethelred II – Fordred	Jarrow	2018 M-L Sax JA 73 UZ 91a 7305
Nu20	Aethelred II – Fordred	Jarrow	1007 M Sax JA 78 EF 3 7804
Nu21	Heavily corroded	Jarrow	2018 M-L Sax JA 73 UZ 350 7305

Figure 2.47: Northumbrian pennies excavated from Monkwearmouth and Jarrow.

### 2.3.12. Black Gate excavations, Newcastle, 1977

Excavations were undertaken between 1973 and 1992 in Newcastle to better understand the area between The Keep and the Black Gate. These proceeded at approximately one trench per year, and as acknowledged in the site report, archaeological recording practises changed significantly throughout that time (Harbottle, Nolan and Vaughan 2019). The first phase of occupation was the Roman fort, whose ruins were likely still extant, when the early medieval cemetery was established, perhaps marking its boundary. The cemetery contained 668 burials, with use dated to between c.700 to 1080. Therefore, the establishment of the cemetery might be broadly contemporaneous to the foundations of Jarrow and Monkwearmouth. Six cooper-alloy Northumbrian pennies were excavated from the site, all of which were from trenches that had seen much disturbance due to modern drains and trenches.

Authority	No. of coins
Eanred	1
Aethelred II	4
Irregular	1

Figure 2.48: Northumbrian pennies from the excavations at Black Gate, Newcastle (Pirie 2000, 70)

### 2.3.13. Tynemouth, 1963

Tynemouth Priory was excavated in 1963 as part of a Ministry of Works scheme to provide local employment. The excavation was instigated due to a need to lower the road level to the north of the modern priory (Jobey 2019). Excavations revealed a series of timber buildings dating to the post-Roman period, as well as finds of ninth-century stone sculpture. These have been tentatively interpreted as the remains of a complex of timber buildings associated with the early history of the church (Jobey 2019, 42). There were few finds recovered from the excavation, but pertinent to this to this study was the discovery of a Northumbrian penny of Aethelred II (see §7.3.4.4). The site is historically attested: Bede mentions that Abbot Herebald and Osred II of Northumbria were both reportedly buried there in c.792. Tynemouth is also mentioned as the intended location of a winter camp for Halfdan c.875 (Jobey 2019, 47). The monastic site had also been attacked by Vikings c.800 (Kershaw et al. 2023). Petts (2017) also noted that similarly Whitby, as Tynemouth is a cliff-edge site.

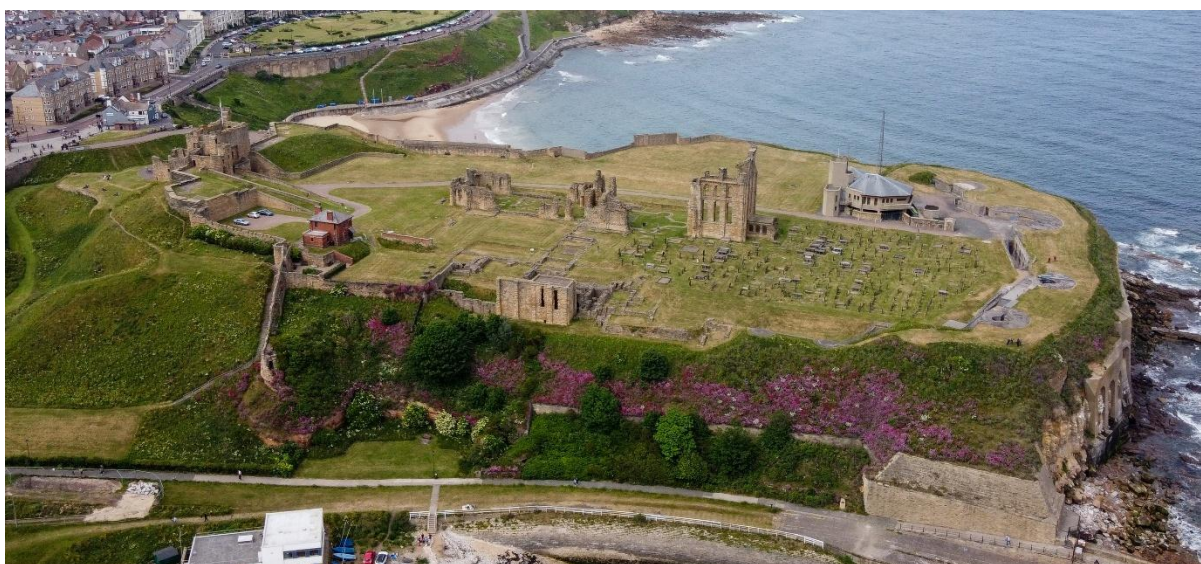


Figure 2.42: Aerial view of Tynemouth Priory and castle. Image: Thenorthmann CC BY SA 4.0

### 2.3.14. Llanbedrgoch, 1994-2025

Metal detectorists were the first to recover early medieval objects from Llanbedrgoch between 1989 and 1992. They found several coins, including silver pennies of Cynethryth of Mercia and Wulfred of Canterbury and three Viking Age weights (Redknap 2004). These finds were brought to the National Museum of Wales, and in 1994 the

organisation began excavations at a site close by which had been identified through crop marks (BBC News 2012). Whilst the final publications of the excavations is not due until November 2025, interim discussions outlined that it was a “strategically sited, fortified, low-lying centre” where settlement began in the late eight century and continued into the early tenth (Redknapp 2004, 2006). Finds from the site include those that indicate Viking presence, including weights, arm-rings, a dirham fragment and silver waste from metalworking. Burial evidence is also interpreted as relating to Viking raids on north Wales in the mid-ninth century. Northumbrian pennies can potentially be added to this list (figure 2.43).

Find no.	Authority and moneyer	Context
742	Derivative issue +[ ]I'IR[ ]VL, around cross pommée ('Earduulf'?)	GL96
1139	[ ]VIGMVND, around cross +EDELHELN	GL97

Figure 2.43: Northumbrian pennies from Llanbedrgoch. The coins were identified by Edward Besly, and the information was kindly supplied to me by Alastair Willis of Amgueddfa Cymru

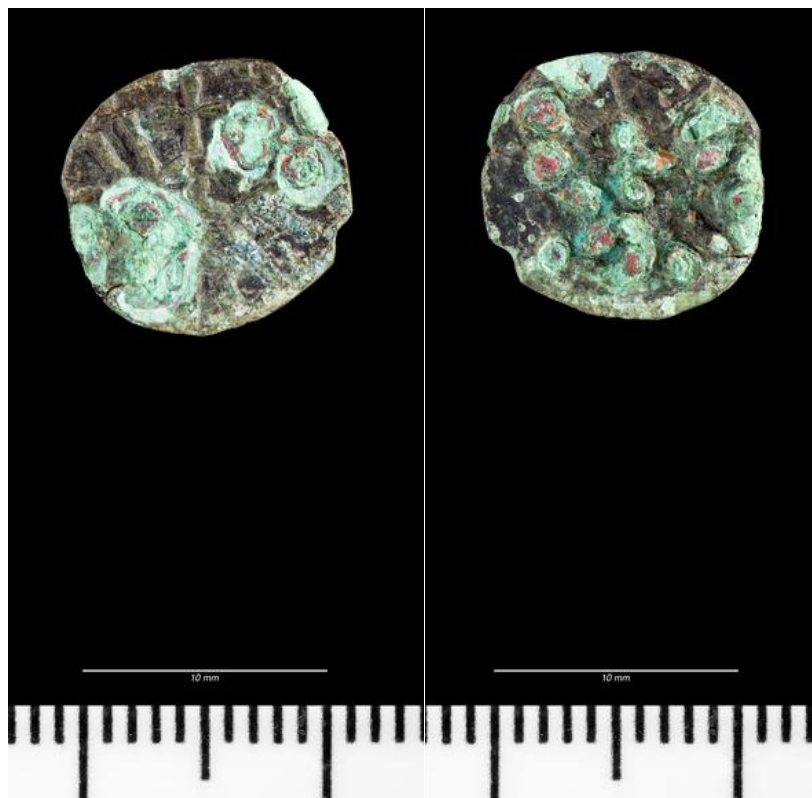


Figure 2.44: Derivative penny from Llanbedrgoch. Copyright Amgueddfa Cymru.

### 2.3.15. Segontium fort (Caernarfon), 1920-22

A single Northumbrian penny was found during excavations of the Roman fort of Segontium in Caernarfon during investigations led by Mortimer Wheeler from 1920 to 1922 (Pirie 2000b, 88). Wheeler noted that the find was of particular interest, due to the rarity of Northumbrian pennies in Wales and he suggested this was the earliest such find (Wheeler 1923, 94). The copper-alloy coin was issued by Eanred and minted by moneyer Heardwulf. It was excavated from a building in the south-eastern tower of the south-western gate at the fort (see figure 2.44). Accession registers at Amgueddfa Cymru include a note on the coin by archaeologist and numismatist Willoughby Gardner (Matheson 1953), who notes that it was Tessa Wheeler who found it (Willis pers. comm).



*To face p. 61.*

Figure 2.45: Photograph of the south-west gateway, where the Northumbrian penny was found (Wheeler 1923, fig.20)

### 2.3.16. Carlisle, 1979-91

Carlisle is a city known for its Roman archaeology, but important post-Roman material was excavated from sites across the city during the twentieth century. Figure 2.46 shows excavations at which these 53 Northumbrian pennies have been found. A significant issue for analysis of these finds is that there are predominantly residual, most often from a dark earth layer found across all sites. Whilst they show the presence of 9<sup>th</sup>-century material across the city, more precise contexts have not been able to be recovered. This means that the coins are not used for dating in the excavations, beyond a broad 9<sup>th</sup>-century attribution. Pottery and dendrochronology are more commonly used to date Carlisle's stratigraphy (McCarthy 1991; McCarthy, Padley and Taylor 1988).

<b>Excavation</b>	<b>Northumbrian pennies</b>
Abbey Street, 1987	1: Aethelred II (1)
Annetwell Street, 1981	8: Eanred (4), Aethelred II (1), Wigmund (1), derivative (1)
Blackfriars Street, 1977-78	3: Eanred (2), Wulfhere (1)
Castle Street, 1981-92	10: Eanred (4), Aethelred II (1), Wigmund (2), derivative (1)
Cathedral, 1985-88	14: Eanred (1), Aethelred II (9), Osberht (1), derivative (3)
The Lanes, 1979-81	5: Aethelred II (2), Wigmund (1), derivative (1), illegible (1)
Millennium Project, 1998-2001	2: Eanred (2)
Scotch Street, 1988	3: Eanred (1), Wigmund (1), derivative (1)
Town Dykes Orchard, 1987	1: Eanred (1)
Tullie House Extension, 1989	5: Aethelred II (3), derivative (2)

Figure 2.46: Northumbrian pennies excavated in Carlisle (McCarthy and Brooks 1990; Zant, Howard-Davis and North 2009; McCarthy 1991; McCarthy, Padley and Taylor 1988; Pirie 2000b)

### 2.3.17. Dacre (Cumbria), 1982-85

Excavations from 1982 to 1985 at St Andrew's Church, Dacre (see figure 2.48), revealed a substantial early medieval cemetery and two early medieval buildings (Newman, Howard-Davis and Leech 2022). These evidenced a historically documented, yet not archaeologically attested, monastery there. Six Northumbrian coins were excavated from there, including one eighth-century silver penny of Eadberht and five copper-alloy pennies (see figure 2.47). All six coins are from Site 2, which was a large trench to the north of the church.

Authority	No. of coins
Eanred	1
Wigmund	1
Aethelred II	2
Unknown	1

Figure 2.47: Coins from Dacre



Figure 2.48: St Andrew's Church, Dacre – observer stood on edge of Site 2, facing church - the trench continued behind their position. Image: Dacre, St Andrew's Church by Michael Garlick. CC BY SA 2.0.

### 2.3.18. Castle Park - Dunbar, 1987-91

Excavations took place at Castle Park, Dunbar, Scotland from 1987 to 1991, initially to find the location of a 16th-century fort (Perry 2000, 3). As the phases of excavation and analysis progressed, the strategic importance of Dunbar from the Iron Age to the fifteenth-century was better understood (Barrow 2000, vii). Material was recovered that enabled archaeologists to reconstruct how the site developed during the Northumbrian period, from a seventh-century Anglian settlement with timber buildings (Phases 7 to 9) to a period marked by stone structures, including a mortar-mixer to support their construction (Perry 2000, 49, 65). The final phase of Northumbrian activity was identified as Phase 13; the site phasing then describes 14 as an “interface” phase before 15 when the medieval period of the site has been characterised (Perry 2000, 22). Significantly, the two finds of Northumbrian pennies from the site straddle these phases. A coin of Eanred was found in Phase 13; one of Aethelred II in 14 (Pirie 2000a, 168).



*Figure 2.49: View of promontory from north, the building in the right of the image is Dunbar swimming pool, built on the site of the Castle Park excavations. Image: War memorial, castle and cliffs at Dunbar. Author: Sandy Gerrard CC BY SA 2.0*

### 2.3.19. Hoddom, 1991

A significant corpus of stone sculpture dating from the eighth century, as well as historical sources, indicated that Hoddom (Dumfries & Galloway, Scotland) was the site of a Northumbrian monastic house (Lowe 1991). The site in southwestern Scotland was first investigated in 1915, and then in 1952, with more extensive excavations in 1991 as the site was under pressure from nearby quarrying (Lowe, Brooke and Scotland 2006, 5). A Northumbrian penny of Aethelred II was metal detected from an area to the east of the graveyard and a denier of Louis the Pious was also further to the east of the site (Pirie 2006, 133–134). Excavations provided evidence of a monastic site, and environmental analysis showed that during the ninth century the community moved to a subsistence model, rather than a surplus-based economy and concentrated closer to the church (Lowe, Brooke and Scotland 2006, 262).



*Figure 2.50: Hoddom churchyard in centre of photo, excavation took place between it and the centre treeline (Lowe, Brooke and Scotland 2006, 2).*

## 2.4. Metal detected sites: before and after the PAS

Due to the increasing popularity of metal detecting as a hobby during the 1970s and 1980s in the UK, finds of archaeological material have increased across subsequent decades. At its peak in the 1980s, it is estimated that there were 180,000 metal detector users – an estimate for 2003 put the number of users at 10,000. However, these first decades of detection had not necessarily created positive relationships between archaeologists and detectorists, more often there was distrust between the two communities (Bland 2005). There were exceptions where local archaeologists sought to record as many finds as possible, for example Kevin Leahy in north Lincolnshire or Tony Gardner in Norfolk, who built good relationships with detectorists enabling the recording of material (Richards, Naylor and Holas-Clark 2009; Daubney 2016). Elizabeth Pirie was another figure who early on was in touch with several detectorists, recording finds, for example the ‘near Bamburgh’ hoard (Pirie 2004).

Informal networks of connected detectorists and experts have been to some extent replaced by two major databases: the Early Medieval Corpus of Coin Finds (EMC) and the Portable Antiquities Scheme (PAS). To create and store a fuller record of metal-detected material the Fitzwilliam Museum in Cambridge established the Corpus of Early Medieval Coin Finds (EMC) in 1996. The initiative was led by Mark Blackburn, and was based on the *Coin Register*, a list of coins discovered which had been published in the *British Numismatic Journal* since 1987 (Allen n.d.).

The Portable Antiquities Scheme was established as a pilot programme in 1997 to encourage the finders of ‘portable antiquities’, most often metal detectorists, to report their finds for recording on a voluntary basis. The scheme emerged from the adoption of the Treasure Act (1996) which had recognised that a system was needed to preserve the data and the archaeological value of the increasing number of finds being discovered (Bland 2005). The changes to the Treasure Act saw landowners become eligible for financial reward for the first time if treasure was found on their land and made it a criminal offence to not report cases of treasure.

Since detecting is a voluntary hobby activity for most, albeit with a variety of motivations, the reporting of finds is also made on a voluntary basis. This means that a

dataset from the PAS will have biases inherent to it, both from an organisational, and an individual, perspective. Despite being part of a national legislation scheme, the finds recorded by the PAS are far from evenly spread across England. Before people are involved in the discovery there are several loss factors to consider. These factors, according to Robbins (2013) can be summarised as:

- Not all objects will be lost
- Of those that are lost, not all are preserved
- Of those preserved, not all survive
- Of those that survive not all will be noticed by a collector
- Of those collected, not all will be recorded by the finder

Additionally, and more specific to the PAS, Robbins (2013) sets further constraints:

- Of objects recovered, not all will be reported to a professional body
- Of those that are reported, not all will be recorded in a professional dataset.

Furthermore, land type and agricultural practice, landholder permission, known archaeology and accessibility all add further biases to a dataset. Individually, motivation for detection adds further partiality. If the detection is motivated by profit, the detectorist is less likely to report their finds. This is compounded by concern that reported finds might become Treasure, and so lost to finders, or land might be scheduled and access to detection lost (Robbins 2013). These factors notwithstanding, data supplied by the PAS has revolutionised English and Welsh archaeology over the last two decades, particularly in terms of the number of single finds that have been recorded.

For Northumbrian pennies the PAS database adds a new body of material, which was not available to earlier researchers, including Elizabeth Pirie. The finds demonstrate that the coinage is much more widely spread outside Northumbria than has previously been appreciated. However, with multiple recorders its data does need some standardisation and there is the potential for some Northumbrian coins to be more closely identified. As of December 2024, there were 653 Northumbrian copper-alloy pennies listed on the PAS, with representation of all known kings and bishops who issued this coinage (these are discussed in detail in chapter 6).

### 2.4.1. Metal detected hoards

In addition to recovery as chance finds or through excavation, some hoards have also been found through metal detection. This section summarises each in chronological order of discovery.

#### 2.4.1.1. 'Near' Bamburgh, 1999-2002

The 'near' Bamburgh hoard was reported to Elizabeth Pirie between 1999 and 2002 by members of the Ashington and Bedlington Metal Detecting Club. The specific location of the site has not been publicly disclosed but is not part of the Bamburgh Castle excavations. The hoard was examined and published by Pirie, and the coins were donated by the detectorists to Newcastle Museum (Pirie 2004). Pirie believed that the 312 Northumbrian pennies found represented a hoard which had been disturbed and dispersed. She based this interpretation on the fact that none of Northumbria's early silver issues were present, which she would have expected to see at a place that was a market site (Pirie 2004, 65). The size of the hoard makes it comparable to the hoards from St Mary's Abbey in York and Kirkoswald.

Authority	Number of coins
Eanred	20
Archbishop Wigmund	27
Aethelred II	107
Redwulf	1
Osberht	16
Wulfhere	3
Irregular	80
Uncertain	47

Figure 2.51: Northumbrian coins in 'near Bamburgh' hoard

#### 2.4.1.2. *Harswell, 2007*

Harswell (East Yorkshire) is a hoard of 11 coins found by detectorist Norman Smith in June 2007. Reported as treasure (T311), the coins were published in 2009 (Royal Numismatic Society 2009). At the time East Riding Museums hoped to acquire them, but further correspondence in 2023 with East Riding Museum suggested that they may have been returned to the finder, since the museum did not acquire them (David Marchant, pers. comm.). Harswell is in the parish of Everingham: further 9<sup>th</sup>-century finds from the parish include four copper-alloy pins and five Northumbrian pennies. It is not clear from the Portable Antiquities Scheme database how these may relate to the hoard, since the location of its findspot is not recorded, and the hoard is not listed on PAS.

<b>Authority</b>	<b>Number</b>
Eanred	1
Aethelred II	4
Redwulf	1
Osberht	1
Eanbald II	1
Wigmund	1
Derivative	2

*Figure 2.52: Northumbrian coins in the Harswell hoard*

#### 2.4.1.3. *Wharton, 2017*

The Wharton hoard was discovered on 23 July 2017, close to Wharton Hall, near the village of Nateby in Cumbria. The find was reported to the PAS and classified as treasure under the Treasure Act of 1996 (Boughton 2017). No container was reported with the hoard, which comprised thirty-seven coins (see figure 36). The coins were comprehensively catalogued at the British Museum and the data is available on the PAS website (LANCUM-1A7BCA). There are no episcopal issues. After the coins were declared treasure, they were acquired by Penrith & Eden Museum (Boughton 2017).

The land the coins were found on is close to Wharton Hall, a fortified manor house dating to the fourteenth century, but there is no recorded evidence for an earlier settlement. The closest village is Nateby, which is two kilometres south of Kirkby

Stephen. Whilst Nateby does not have any recorded extant early medieval archaeology, Kirkby Stephen has several fragments of stone sculpture dating to the eighth to eleventh centuries, including a fragment of an Anglo-Scandinavian hogback (Bailey 1988, 120–125). Two ingots, potentially dating to the early medieval period, were discovered 200-300m away from the hoard’s findspot. The finds are LANCUM-F5E653 (perhaps silver), and LANCUM-389D97 (copper alloy) (Boughton 2009).

Authority	Number
Eanred	3
Aethelred II	28
Redwulf	1
Osberht	1
Unofficial issues	4

Figure 2.53: Coins of the Wharton Hoard, based on the PAS entry (which uses the phrase ‘unofficial issues’ to describe derivative types)



Figure 2.54: Several coins from the Wharton Hoard. Portable Antiquities Scheme CC BY SA.

#### 2.4.1.4. Tadcaster, 2018

This hoard was detected by four individuals on 12 August 2018 and reported to the Portable Antiquities Scheme, where was given the treasure case number 2018T601 (Coulthard 2018). It comprises 17 Northumbrian pennies. The findspot was approximately 4km north-west of that of the Bolton Percy hoard in North Yorkshire. Other ninth century finds from the parish include copper-alloy strap ends, a spindle whorl and an Anglo-Scandinavian chape, potentially dating from the tenth century (Downes 2020).

Authority	Number
Eanred	4
Aethelred II	5
Osberht	2
Wulfhere	1
Uncertain	4
Illegible	1

Figure 2.55 - Coins from the Tadcaster hoard.

#### 2.4.1.5. Asselby, 2019

The Asselby hoard is a group of 28 Northumbrian pennies metal detected in 2019 from a site in East Yorkshire. There are six other 9<sup>th</sup>-century finds from the parish, all copper-alloy pins (Griffiths 2019b). The church has no sculpture of the period and is not an early foundation.

Authority	Number
Aethelred II	11
Osberht	4
Derivative	9
Illegible	4

Figure 2.56: Northumbrian pennies from Asselby hoard (Griffiths 2019a)



Figure 2.57: Derivative issue (also off-struck) from the Asselby hoard, listed as 24 on PAS (Griffiths 2019a)

#### 2.4.1.6. North-east 2023

One final hoard whose composition is discussed, but whose spatial data is currently redacted is 2023 T768, which at the time of writing in 2025 was going through the Treasure process. Known as ‘North-east 2023’, the hoard was metal detected from a village near Bamburgh, but not the same village as ‘near Bamburgh’, 1999, 2000 (see §2.4.1.1). As such there is little further information to share, other than this is third hoard to be found in and around Bamburgh, which adds to the wider significance of the area.

Authority	Number
Aethelred II	10
Osberht	4
Wigmund	2
Derivative	3
Uncertain	12
Illegible	16

Figure 2.58: Northumbrian pennies from the ‘North-east 2023’ hoard.

### 2.4.2. Metal detected temporary settlements

Metal detection as part of collaboration between detectorists and archaeologists has been instrumental in the discovery, recording and understanding of three sites that have significant assemblages of Northumbrian coinage. One of the first of these was the investigation of Cottam - a multi-phase settlement site in the Yorkshire Wolds. Two further sites are the Viking winter camps of Torksey and Aldwark, both of which were initially brought to academic interest through the actions of amateur detectorists. Both then expanded into wider research projects involving a range of expert partners.

#### 2.4.2.1. Cottam, 1993-95

From 1993 to 1995 a pioneering collaboration between archaeologists and metal detectorists undertook an investigation into a site at Cottam in the Yorkshire Wolds. Through archaeological excavation and detailed artefact analysis, the settlement and its phases came to be understood to date to the eighth to ninth centuries. The site was abandoned and relocated to the north during the late ninth century (Haldenby and Richards 2016a, 2016b). The northern focus of the site is believed to have begun in the

last quarter of the ninth century and within this later period two phases of activity are discerned – one labelled as Viking, which has finds similar to those at the winter camps (see below) – and one labelled as ‘Anglo-Scandinavian’. The site is believed to have gone out of use in the late tenth century (Haldenby and Richards 2016a, 4.4). Among the objects recovered through excavation and metal detection, were fifty-one Northumbrian pennies. These were found in both the southern and northern areas of the site (see figure 38).

Issue	Southern area	Northern area
Eanred	8	3
Wigmund	4	9
Aethelred II	21	1
Redwulf	1	1
Irregular	3	0

*Figure 2.59: Aggregated finds from Cottam B (Pirie 2000b; Haldenby and Richards 2016b)*

Cottam is highly significant for the present study, since its two settlement foci can be very finely dated, and copper-alloy pennies have been found at both. In combination this offers a potentially critical dating medium for these coins in both their Northumbrian and Viking contexts; details on the phasing and dating of Cottam B are presented in chapter 5. The site is unique in its potential, but further spatial analysis of the coinage is required to compare finds between areas of the site. It was first published by Julian D. Richards and David Haldenby in 1999 and the objects recovered during the investigation are either in private ownership, or at Hull Museums (Richards et al. 1999; Haldenby and Richards 2016b).



Figure 2.60 – Screenshot of finds of from Cottam B interactive map, showing search for terms 'coin', 'copper', 'Anglian' (Haldenby and Richards 2016b)

#### 2.4.3.2. Torksey, 1980s, 1990s, 2011-15

Torksey is a village in Lincolnshire close to the River Trent. The *Anglo-Saxon Chronicle* records that the Great Army spent the winter of 872-3 at Torksey. Detectorists working in the 1980s and the 1990s discovered finds that numismatist Mark Blackburn suggested might relate to Viking activity at Torksey, although he did not know where the site was (Blackburn 2002, 2011). However, it was not until a collaborative research project undertaken between 2011 and 2015 by the Universities of Sheffield and York that the hypothesis could be tested (Hadley and Richards 2016). The research project used small-scale excavation, fieldwalking, environmental analysis, geophysical survey and collaboration with detectorists to study existing finds and collect and map new material (Hadley and Richards 2016).

The Torksey assemblage comprises over 1800 finds of early medieval metalwork and coins, including copper-alloy weights, Islamic dirhams, copper-alloy strap ends, hack-metal, copper-alloy and lead weights and lead gaming pieces (Hadley and Richards 2016, 2025, 80). Since most of the finds were metal detected, there is a bias towards metal objects in the assemblage, which is important to bear in mind (Woods 2020). Two hundred and five Northumbrian pennies have been recovered from the site and they are the commonest denomination found there. Two other denominations contemporary with the occupation of the camp are also found – silver pennies of Mercia and Wessex and Islamic dirhams. One of the most significant aspects of the Viking camp sites, is

the evidence for multiple economies running in parallel. Woods (2020) suggests that since the silver pennies remained whole their use as coins continued, but for dirhams, which were cut into fragments, that these were part of a silver bullion economy. Williams (2020) has suggested that the Northumbrian pennies may have formed part of a copper-alloy bullion economy.

Issue	Number
Eanred	18
Aethelred II	97
Redwulf	8
Osberht	10
Archbishop Wigmund	6
Archbishop Wulfhere	1
Uncertain	65

Figure 2.61: Finds of Northumbrian pennies from Torksey (Hadley and Richards 2016)

#### 2.4.3.3. Aldwark, 2003

In 2003 metal detectorists discovered and reported a potential hoard from a site in North Yorkshire to the Portable Antiquities Scheme. During the process of the report, it became more widely known that the detectorists had found, and in some cases sold, many finds they had previously recovered from the site. With this knowledge a collaboration between English Heritage and York Archaeological Trust began to undertake archaeological investigation of the findspot and the wider area. The site became known as 'Ainsbrook' (a conflation of the names of the detectorists), and to further protect the location of the site it was kept anonymous and referred to in the 2020 publication of the finds as 'A Riverine Site near York' (ARSNY). However the site is known to be near to the village of Aldwark in North Yorkshire, and that name for it is also now used (Richards 2020). The research project identified the site as that of a Viking camp and associated it with the activities of Halfdan's section of the Great Army which began to settle in Northumbria from c.875 onwards (Williams 2020, 81).

<b>Authority</b>	<b>Number of coins</b>
Eanred	3
Aethelred II	27
Redwulf	1
Archbishop Wigmund	3
Osberht	7
Archbishop Wulfhere	1
Derivative or uncertain	24
Illegible	24

Figure 2.62: Northumbrian pennies from Aldwark (Williams 2020)

#### 2.4.3.4. East Thirston, ongoing

East Thirston is the proposed site of an undocumented transitory settlement occupied by the Viking Great Army, potentially connected to the army's activities in 874-875. The site had been metal detected for over 15 years, prior to more recent, and ongoing, archaeological investigations (Kershaw et al. 2023, 96). The site lies to the south of the River Coquet in Northumberland, 53m above sea level. Thirston Burn, a river, flows to the north, south and west of the site, and, with its elevated position, East Thirston has similarities with the riverine sites of Aldwark and Torksey. However, the eastern extent of the site is not yet established, so the extent of occupation is unknown (Kershaw et al. 2023, 100). Finds from the site show a series of phases of occupation, from the Roman period onwards (Kershaw et al. 2023, 104). Early medieval finds from the area include five Anglian dress accessories dating to the sixth century and a Merovingian tremissis, which are suggested to reflect high-status occupation at the site (Kershaw et al. 2023, 105) (Kershaw et al. 2023, 105). Evidence for Viking Age occupation is demonstrated by a range of material, including lead gaming pieces, copper-alloy pins and strap-ends, as well as Northumbrian copper-alloy pennies, all of which are part of a Great Army finds signature. However, there are other aspects of this signature that are absent from the assemblage, such as Irish metalwork, or silver either as imported coin, ingots or hack-silver (Kershaw et al. 2023, 108).

## 2.5. Conclusion

Since the accidental discovery of the Ripon hoard in 1695, Northumbrian copper-alloy pennies have been recovered and examined through a range of means and by a variety of people. From the extensive, accidentally recovered hoards of the nineteenth century, to excavated material in the twentieth, to metal-detected single finds of the twenty-first, there is a range of data now available about the coinage (see figure 2.63). This is influenced by the process of recovery: for antiquarian hoards, we have no complete assemblages because many of the coins were sold by the finders. Where we do have data, none are a complete assemblage; some have contextual information such as location, but for others, such as Kirkoswald, the findspot is now lost.

The excavated material, found in a range of contexts, from settlements to burials, shows the ways in which this coinage was used both by people in the past, and by archaeologists today. For those working today, a coin can be a way to date a particular context, but care needs to be taken when the dating of a particular kind of coin might be variable, or its life a long one. At Flixborough, coins are used to date the phases of the settlement, but as we saw, even the report author suggests they might change in future. The work of metal detectorists, both as part of an individual leisure pursuit and as part of collaborative research projects has expanded the number of findspots for the coinage hugely. New panoramas of coin loss have become visible through the work of the EMC and the PAS. The most recent development, the recognition of sites of Viking winter camps from metal detected assemblages, adds a new dimension to how Northumbrian coinage can be understood. This re-examination of existing data speaks to Kemmers and Myrberg's concepts of belonging and creating. For belonging, chapter 5 is key is understanding intersection between Northumbrian coinage and Viking activity. For creating, as discussed here, there is detailed recognition that as knowledge is constructed, so too it can be lost. The study of Northumbrian coinage has inherited generations of fluctuating reporting, which mean that the data that we can use is both curated and partial.

The following chapter will examine developments in the historiography of Northumbrian coinage from the earliest antiquarian thinkers in the 1800s to the dominance of the work of Elizabeth Pirie in the late twentieth century. This will question how her work

changed perceptions of the coinage, how it built a framework to categorise them and what the legacy of her expertise is.



Figure 2.63: Locations of sites of Northumbrian copper-alloy pennies according to method of recovery (excludes Trewiddle, Cornwall)

### 3. Historiography of Northumbrian copper-alloy coinage

#### 3.1. Introduction

Northumbrian copper-alloy pennies have been studied and written about since 1695. The first recorded correspondence about these coins concerned the now mostly lost Ripon hoard (see §2.2.1.). A later in depth consideration of the coinage was made by the antiquary William Clarke, who published in 1767 *The Connexion of the Roman, Saxon, and English Coins deduced from observations on the Saxon Weights and Money* (Clarke 1767; Warwick 1887, 188), as shown in figure 3.1. In it he described the three coins of the title as different denominations and argued that they were used concurrently, with different values. Intriguingly he also stated that for Northumbrian “brass” pennies “many of them are now remaining” (Warwick 1887, 432). This sentence hints at a historical knowledge of the coinage in the 1700s, and as we shall see is drawn upon in the following century.

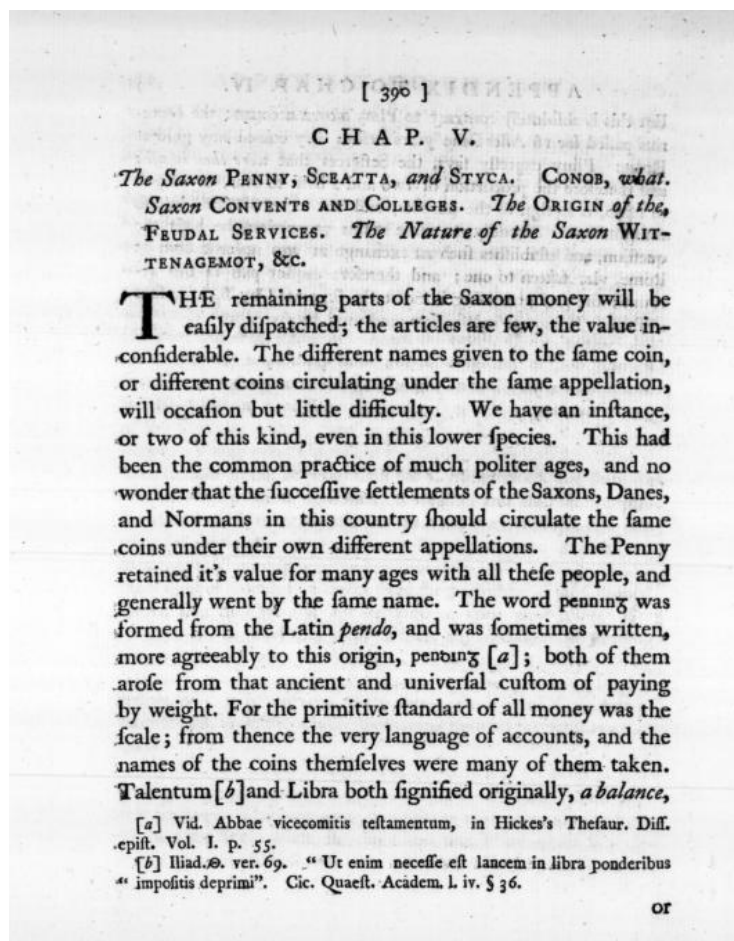


Figure 3.1: First page of Clarke's chapter discussing early medieval coinage (Clarke 1767, 390)

This chapter will reveal how approaches to Northumbrian coinage have changed across the last two centuries and identify the major developments in their study. This review approaches trends in the numismatic literature chronologically and I propose to discuss publications in five groups, expanding on the three eras outlined in §1.3. The first group of studies dates from 1819 to 1925 and can be characterised as antiquarian in nature. The second group of material was published during the 1950s to 1970s. During this time, the study of the coinage was marked by a debate over chronology, especially in papers by Stewart Lyon and Hugh Pagan. The third group from 1970 to 1987 reflects the formative period in the work of Elizabeth Pirie and the Tenth Oxford Symposium on Coinage and Monetary History, which took ninth-century Northumbria as its theme. The symposium was a significant moment in the study of northern coinage since it marked the point at which Pirie's ideas on Northumbrian pennies and her proposed typology seemingly begin to be rejected by the established numismatic community. The fourth period in the 1990s and early 2000s is dominated by the published work of Pirie. Despite Michael Dolley's encouragement for it to be published as a sylloge volume (Pirie 1986b, 67), as we will see, a lack of support for her categorisation meant that her work was ultimately published independently. Subsequent study is marked by John Naylor and Tony Abramson in the 2000s and 2010s, both of whom endeavour to contextualise the Northumbrian coinage, either within wider ninth-century economic activity, or within the context of Northumbrian economics, respectively. The final section characterises work on Viking interactions with Northumbrian economics, based on the work of Gareth Williams and Andrew Woods.

Key themes that are repeated across the periods include the question of chronology – in terms of both regal and episcopal authorities and moneyers within issues. Other themes include the question of how popular the coinage was as a unit of exchange, what hoarding practices reveal about the coinage and what we can tell from the potential links to Viking activities.

### 3.2. Discovery and discussion: 1819 - 1925

Scholarship on the coinage in the nineteenth and early twentieth centuries was characterised by publications from independent scholars, writing within what we now characterise as antiquarian traditions, mostly in the format of journal articles. It was not until the discovery of large hoards in the nineteenth century that more in-depth study of the coinage took place. Publication and debate were particularly intense in the late 1830s and 1840s stimulated by the discovery of the Kirkoswald (1808), Hexham (1832) and St Leonard's Place (1842) hoards.

In 1819, vicar and Fellow of the Society of Antiquaries, Rogers Ruding, published his three volume *The Annals of the Coinage of Britain and its Dependencies* (see figure 3.2), within which he discussed monetary production in Northumbria (Thompson 2004; Bendall 2004). He described it as the only kingdom to produce a copper-alloy coinage, and much of the discussion sees Ruding opposing the opinions of William Clarke, who believed that Northumbrian pennies were also produced by other kingdoms (Ruding 1819, 111). Ruding countered by saying that their "non-appearance" in other kingdoms means they must be Northumbrian in origin. Ruding was aware that there were both regal and episcopal issues and had examined a selection of coins from the Kirkoswald hoard. He also mentioned the unique silver penny of Eanred from the Trewhiddle hoard.

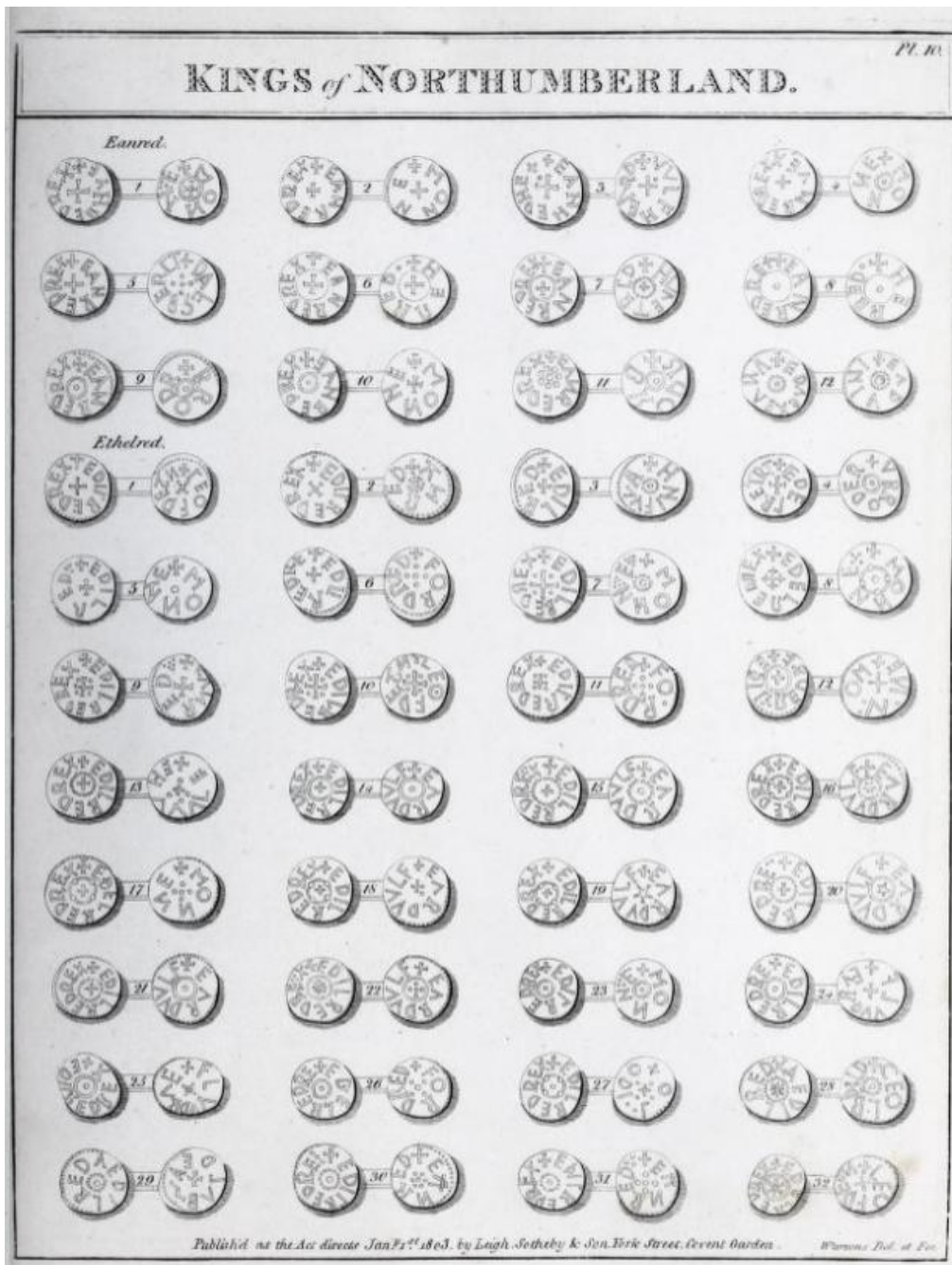


Figure 3.2: Plate 10 from Ruding's 1819 publication showing illustrations of coins of the Kings of Northumberland.

In his publications on the Hexham hoard, John Adamson describes the discovery, dissemination and analysis of the assemblage in detail (Adamson 1834). Adamson adopted a similar structure to Ruding by describing the regal issues first, followed by episcopal ones. His work sets the tone of much future debate around the coinage, for example discussing how the pellets in the coin designs “render it not improbable that they have some meaning beyond being merely ornamental” (Adamson 1834, 283).

Another example is discussion of what I now call derivative issues describing legends where “nothing in the least satisfactory can be made out” and suggesting that counterfeiting existed as part of the monetary experience and those issues “may be the work of forgers” (Adamson 1834, 310). This focus on spelling led to the interpretation that each spelling variation of a name represented an individual moneyer. He also undertook the first metallurgical analysis of the coins with the ‘Reader in Chemistry and Mineralogy at the University of Durham’, a Mr Johnston (Adamson 1834, 282–283). Adamson also went to significant lengths to get as much of the hoard recorded as possible, recruiting a Mr Gibsone to illustrate the finds, 941 of which were published (Adamson 1834, 281).



Figure 3.3: Sketch of John Adamson from ‘Men of mark ‘twixt Tyne and Tweed (Welford 1895, 11)

Throughout the nineteenth century, much of the discussion of Northumbrian coinage took place across the pages of the *Numismatic Chronicle*. In 1837 two articles discussed the authenticity of a purported new type of Northumbrian penny (Ellis 1837; Lindsay 1837). The new type was proposed by Henry Ellis, who wrote that in his collections he had a type which had not been previously described, neither in Adamson’s work nor elsewhere. He believed the inscription to read Huth and used the coin as evidence that Northumbria had a previously unknown king of that name. Ellis was Principal Librarian at the British Museum (Sharpe 2009), and a founding member of

the Royal Numismatic Society (Carson and Pagan 1986). In reply to Ellis, John Lindsay argued that the coin dated to the tenth century, and he attributed it to the “latest of the Danish princes of Northumberland” (Lindsay 1838). Lindsay was an Irish antiquarian and numismatist who published on a variety of numismatic topics, in particular Irish coinage, but also corresponded with others in the field. This emphasis on the potential resource Northumbrian coins could have as evidence for kings is an important characteristic of the scholarship of this period.



Figure 3.4: Portrait of Henry Ellis, 1836 © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\) licence](#).

In 1839 the author Clifton Wintringham Loscombe published an article on sceattas, which closely linked them with Northumbrian pennies. Significantly, the article also suggested that examples found in Kent could be linked to the activities of “piratical Danes” (Loscombe 1839, 66). The same year Edward Hawkins published two articles of ‘general remarks’ on the coinage. In one he reattributed coins of Egcbert from Kent to Northumbria, based on a stated wider dissatisfaction by “all collectors of Anglo-Saxon coins” (Hawkins 1838a, 1). In a separate article the same year, he also described a blundered coin of Aelfwald. This is significant because it was the first article since

Adamson's to seriously consider imitative coins and use this terminology. In terms of chronology, Hawkins believed that silver and copper issues circulated alongside each other (Hawkins 1838b). The debate about Northumbrian pennies and their association with Kent continued in 1840 with an article by F.D. and E.H (1840). The pair discussed coins from their personal collections. E.H. is identified as Edward Hawkins in the text; he suggested that bishops in York were licensed by the kings to produce coins. F. D. is unnamed in the text, but is likely to be Francis Henry Diamond, a member of the (now) Royal Numismatic Society, whose father, the surgeon William Batchelor Diamond, and brother, the clinical photographer Hugh Welch Diamond, were also members (Carson and Pagan 1986, 59).

Whilst Hawkins was a significant figure during this period, Diamond was not and did not publish further.<sup>1</sup> In his work on silver coinage, Hawkins (1841) referred to sceattas as 'stycas' and argued that the "irregular arrangement of letters" is characteristic of the Northumbrian coinage, developing how the coinage was understood. He also discussed the reign of Redwulf and focussed on how the number of coins produced by him seems to be in a higher proportion than would be expected for the length of his reign (Hawkins 1841). Northumbrian exceptionalism was emphasised by John Lindsay who recognised that its coinage was strongly different from that very produced during the same period in the rest of Britain (Lindsay 1842). The following year, Lindsay published another article, which argued that coins that he had acquired from a sale dated to the late ninth century (figure 3.3). This was based on a misreading of the legend and attributing them to an Eadred (son of Edward the Elder), rather than Eanred of Northumbria (Lindsay 1843, 39). He also proposed that King Uven of the Picts potentially minted coins at this time. This approach assumed that since Northumbrians and Picts fought over territory, the latter was likely to copy the former's coinage; however, there is no evidence for this (Lindsay 1843, 41).

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<sup>1</sup> Although his brother did exhibit at least one early photograph of Roman coins (RVEC) – however the early years of numismatic photography has not yet been studied.

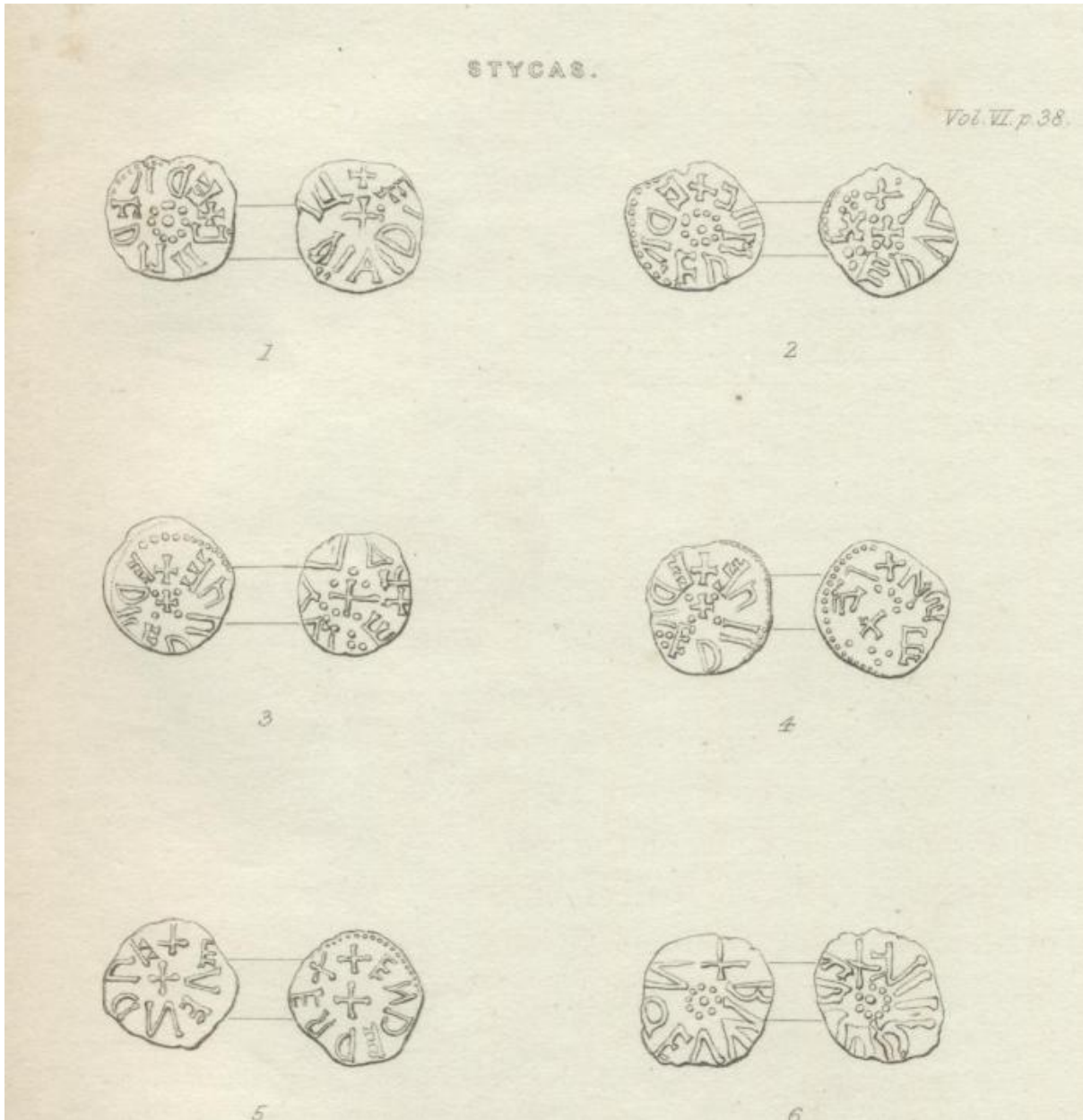


Figure 3.5: Illustrations of Northumbrian pennies (Lindsay 1843).

Attention moved to the end of production in response to the discovery of the St Leonard’s Place hoard in York (see §2.2.1.4 and §8.2.2.3). Fairless (1844) described how although coins of Osberht and Wulfhere do not feature in the Hexham hoard, they are found in the York one. Fairless also undertook a close study of the coins and noted that an obverse of EDILRED REX is shared between reverses of moneyers Fordred, Brother and Aethelweard: “the same regal die to have been of access to each of those moneyers” (Fairless 1844, 35). These York issues are discussed in an article the same year by Roach Smith (1844), who described the dispersal of the finds. In his opinion the

hoard was similar in composition to those from Kirkoswald and Hexham. He dated the concealment of the hoard to 867 and “the battle with the Danes” (Roach Smith 1844, xx). Nevertheless, it was not until 1846 that an article on the St Leonard’s Place hoard commented on the circumstances of Kirkoswald’s discovery (Cuff 1846). In it, Cuff also argued that the coins of Redwulf are so numerous that he must have been important. He also remarked that the shape of the trefoil ornament found with the hoard may have been peculiarly Northumbrian.

After these frequent publications in the late 1830s and early 1840s, publications on Northumbrian coinage declined in the subsequent decades. The next discussion of Northumbrian coinage comes with Webster (1853) who presented another new type. The following year Webster (1854) published an article that examined imitation on coinage of the tenth and eleventh centuries. This is relevant to this study as it was rare in this period for these coins to be given serious consideration. In his view the engravers were very skilled, and as a result would have been able to closely imitate lettering. By his logic the “deviations from the true spelling” are “an intentional act” and were “executed in all probability by the Danes” (Webster 1854, 90). Variations in spelling were an important signifier of differences in production, which foreshadows some of Elizabeth Pirie’s work as her categorisation is based in part on these (see §3.5).

As well as new material for study, primarily from hoards, new sites where Northumbrian pennies were found are described in this period. In 1855 Bateman published a catalogue of his private collection of antiquities. In it he described a single Northumbrian penny in his possession. He also added some further context, describing others that were found alongside lead plaques (see figure 3.1.4) from Peveril Castle in Derbyshire. The catalogue described the group as: “Three small OBJECTS IN LEAD ... found with Stycas of Ethelred in 1814, amongst earth that had slipped down from the hill at Castleton upon which the Castle stands. From Mr Bird’s collection” (Bateman 1855, 161–162). Another new and unexpected location that they were recovered from was from Dove Point, Meols (Merseyside), where three Northumbrian pennies were found in a cave (Hume 1863).

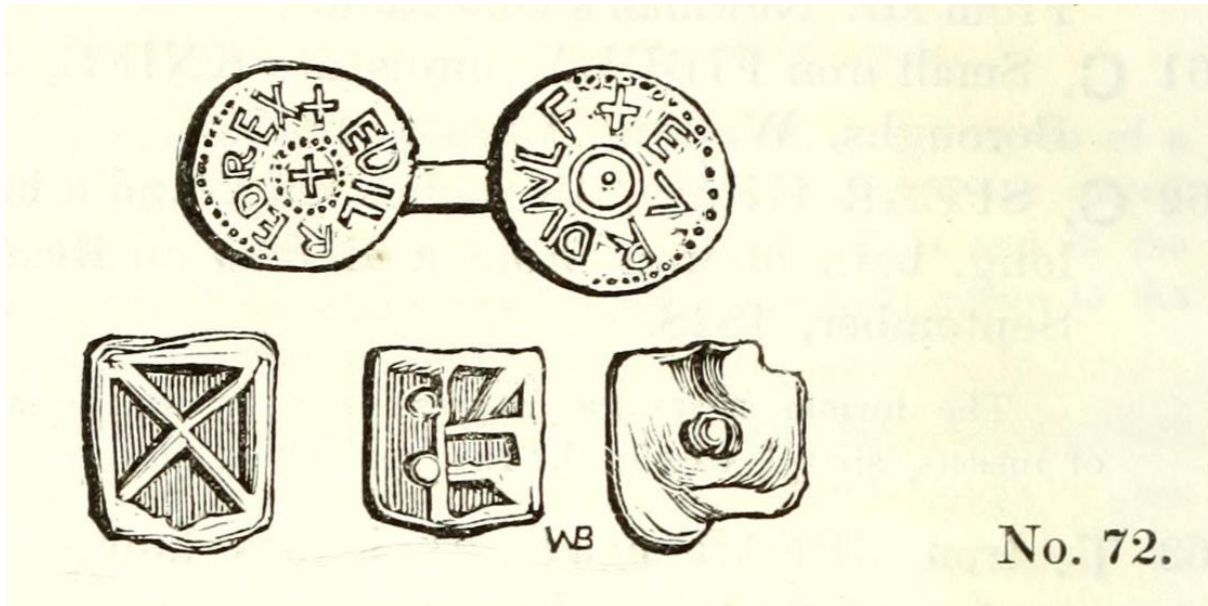


Figure 3.6: Illustration of lead plaques from Castleton find, alongside coin of Aethelred II (Bateman 1855, 162)

A breakthrough in scholarship was published in 1868 by Jonathan Rashleigh. His article discussed the composition of the Trewiddle hoard and drew attention to the silver penny of Eanred within the assemblage (Rashleigh 1868). Discovered on 8 November 1774 by tin miners who were searching riverbed deposits of ore at Trewiddle in Cornwall, the Trewiddle hoard consisted of gold and silver objects, including a chalice and other metalwork, as well as 127 coins. Trewiddle Style, the distinctive artistry shown on many of the objects, is named after the hoard, and it is for this that the hoard is primarily known. The miners initially tried to retain the contents, but much of the hoard was recovered and then divided by the landowner Philip Rashleigh. The contents were apportioned to Reverend R Hennah of St Austell, John Jope Rogers of Helston and others. The assemblage is attributed to Viking activity (Coupland 2007, 220) and its date of deposition has been estimated as c.868 (Graham-Campbell 2004).



Figure 3.7: Objects from the Trewhiddle hoard, the semi-circular drinking horn mounts are characteristic of Trewhiddle style © **The Trustees of the British Museum**. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\)](https://creativecommons.org/licenses/by-nc-sa/4.0/) licence.

Whilst the Trewhiddle hoard does not contain any copper-alloy Northumbrian coins, it does contain one silver coin which is closely associated with the chronology of the kings of Northumbria. The coin in question is a silver penny with the obverse inscription EANRED REX, which is attributed to Eanred of Northumbria (Rashleigh 1868). The reverse reads + DES MONETA. The coin is the only known example of its type and is unusual due to its style, the fact it is made of silver and its findspot (see figure 2.63). In the past, doubt has been cast over its authenticity, however it is now widely accepted to be genuine and has been dated to c.850 based on stylistic comparison to contemporary Southumbrian issues (Lyon 2017). This dating has significant implications for Northumbrian chronology, which is discussed in detail in §4.3.3.



*Figure 3.8: Eanred coin from Trewiddle hoard © The Trustees of the British Museum. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence*

Rashleigh (1868) compared the hoard to others similar assemblages, such as the Croydon and Cuerdale hoards, as well as comparing the Kirkoswald, Hexham and St Leonard's Place hoards. For Rashleigh one significant aspect of the location of the hoards is that they are all deposited within one- or two-day's journey from the coast. Rashleigh also proposed that the silver coin of Eanred was an extant example of an attempt to (re)introduce a silver coinage to Northumbria, and that it was made by a die-cutter copying a Mercian die (Rashleigh 1868, 155). The following year, Rashleigh (1869) produced an article which provided an overview of the coins of Northumbria from the reign of King Ecgfrith (c.670) to King Eric (954). The article kept the regal and episcopal issues separate, both for Northumbrian and Viking kings, and he hinted at a continuation of Northumbrian monetary practice by Vikings, referring to a penny of Aethelwold (901-05), which was found near a "mass of copper stycas" in York (Rashleigh 1869, 76–77).

Despite these points Rashleigh does not fully commit to a theory of continuation, since he does state that he believes that production of Northumbrian pennies stopped in 867, but he seems to suggest that Wulfhere's coinage continued. Rashleigh also used spelling to separate the ETHELRED and ETHILRED types but went further to propose that they could be separate rulers. Subsequently Keary (1874) took issue with Rashleigh's interpretation - he said that Rashleigh over-emphasised literacy and the spellings must be by the same king. His evidence for this was that the two spellings of kings' names are used by seven moneyers, which would be too much of a coincidence.

Research interest continued into the 1880s. Creeke (1880) returned to the idea that it was likely that there was a silver coinage running in parallel in Northumbria to the copper-alloy coins. He expanded the idea and imagined that a silver coinage was used for transactions external to the kingdom of Northumbria. Taking a different position was Montagu (1883) who is the first to note that neighbouring kingdoms to Northumbria could have produced copper-alloy coins if they had wanted to. Heywood (1887) claimed to have a coin of Aelfwald II in his collection that originated from the St Leonard's Place hoard, continuing a numismatic desire to be the one to identify rare types of coin (Heywood 1887, 220).

The debate over a potential silver Northumbrian coinage continued with an article by Heywood (1888) who described a silver penny of Wigmund, which is not extant today, if it did exist. Other Northumbrian pennies follow which are suggested as new types, with a report by Lord Grantley (1893) on a new type of 'Aldred and Egbert'. What is most interesting to me about the claim is that he used the apparent inclusion of a runic letter as his evidence. In a subsequent article, Grantley discussed the change from a silver coinage to a copper one. He considered evidence from the Bolton Percy, St Leonard's Place, Hexham and Kirkoswald hoards, noting that the Bolton Percy hoard is not untypical. He also suggested that there are differences in the fineness of engraving between hoards - citing the coins of Heardulf as being "best struck" in the St Leonard's Place hoard, and "rougher" in Bolton Percy (Grantley 1897, 143–144).



Figure 3.6: YORYM : 2000.2343, reverse showing moneyer Heardulf from Bolton Percy hoard. ©York Museums Trust [CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/)

The first decade of the twentieth century saw an increase in the number of publications. Creeke (1902) continued the search for identification of a coin of Aelfwald II. Creeke (1903) used the coins to write a regal history of Northumbria based on the numismatic evidence. In addition, he supported the idea that the silver issues were used for trade outside the kingdom. He also drew attention to the fact that blundered issues needed to be studied to understand their proper series, giving false attributions to Eardwulf as an example of the issue. Creeke (1905) turned his attention to the episcopal production and suggested that bishops may have continued to mint coins after Viking takeover. Creeke is also a proponent of some form of copper-alloy continuation stating that: “some years would necessarily elapse” before a Viking silver currency “superseded the stycas” (Creeke 1905, 20). This connection was tested further in with the discovery of a lead cross with the impression of a Northumbrian penny on it (Auden 1907). The cross was found along with two further pennies, and Auden described it as an amulet worn “by the Norse traders” rather than a Northumbrian Christian (Auden 1907, 236).

By 1910, scholars were re-visiting previously discovered material. Heywood (1910) published a report on the 1842 hoard and drew attention to the wide range of moneyers and listed several muled types. He also noted interesting single finds from outside the kingdom, found in Cheshire and Lincolnshire. New discoveries published in 1913 also expanded the known coinage of Aethelred I (Parsons 1913). Significantly this article described how a die “was renovated in places” and the letter R was “reproduced as an E, which created the blundered legend” (Parsons 1913, 7). It demonstrates how some writers were thinking in detail about how modifications happen throughout the chronology of production. Another significant find was made in the garden of the vicarage of St Mary’s church in Lancaster, comprising fourteen pennies, eleven of which were too corroded to read (Heywood 1915).

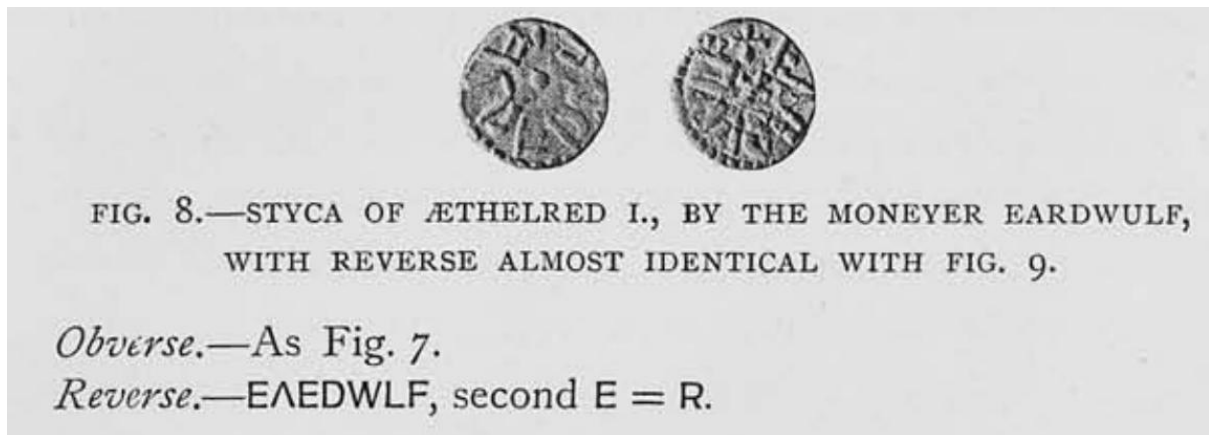


Figure 3.7: Illustration used by Parsons (1913, 7) to demonstrate renovation of a early Northumbrian die.

Attention was also given to the question as to which of the two Archbishops Eanbald minted coins and Parsons (1916, 2) settled on Eanbald II based on the opinion that as an “energetic churchman” he would have naturally got involved with coinage. Parsons also discussed the number of moneysers named on Eanbald’s coins – asking if this reflected the length of production or a size of the coinage. He also noted that not all bishops minted coins. A shift in analysis to focus on moneyser was made by Anscombe (1918), who wrote about the issues of Odilo, arguing that his name is Frankish, so perhaps he migrated when Charlemagne’s daughter supposedly married Eardwulf, king of Northumbria (fl.790 – c.830). Alfred Anscombe was a council member of the British Numismatic Society and former editor of its journal (Pagan 2003, 215). It was followed by a catalogue of acquisitions by the British Museum (Brooke 1924). The final significant article of this period is by Lawrence who considered the regal and episcopal mints at York from the early medieval period to the fifteenth century. Lawrence (1925, 367) stated that it is a “well-known fact” that the regal and episcopal mints were at different sites at York. However, he does not say what evidence this is based on. Brooke (1942, 90) described dual mint operations in the twelfth century, so perhaps Lawrence was reading it back into the early medieval period.

This first era of discussion and discovery produced research which the field is still dependent on today, such as Adamson’s catalogue of Hexham. Many of them reported on new sites and finds from unusual locations and recognised the complexity and significance of the coinage. Significantly there are also hints in this early material at

Viking interaction with the coinage, hints which have previously gone unnoticed by other researchers.

### 3.3. A period of reappraisal: 1955 to 1969

After the publication of Lawrence's 1925 article, the study of Northumbrian coinage declined, likely due to the Second World War and its aftermath. The next period of activity for its publication came from 1955 to 1969 - a period of fourteen years which began and ended with the publication of two articles which have become seminal to subsequent debate: 'A Reappraisal of the Sceatta and Styca Coinage of Northumbria' (Lyon 1955) and 'Northumbrian Numismatic Chronology in the Ninth Century' (Pagan 1969). Lyon used evidence from hoards to assess coin production in Northumbria in the eighth and ninth centuries and discussed both sceatta and copper-alloy Northumbrian coinages. For the latter Lyon compared the types found in the Hexham, St Leonard's Place and the 1867 parcel of the Bolton Percy hoards, assigning Hexham the earliest date either "to the reign of Redwulf, or during the second reign of Aethelred II", c.845 (Lyon 1955, 231). For St Leonard's Place and Bolton Percy, Lyon saw the small proportion of coins of Osberht and Wulfhere and the "closeness of their die-linking" and dated the concealment of each hoard to c.855, stating they must have been deposited ten years after Hexham (Lyon 1955, 231).

The article is significant as Lyon focuses on the importance of die-linkages between kings, bishops and moneyers, and emphasised their complexity. Lyon (1955) recognised that he was not the first numismatist to see the connections between dies and cited the work of Fairless. However, he noted that no other scholars followed Fairless' suggestions on die-linking, and it was a shame that Fairless did not have access to the York material. Lyon also discussed the significance of blundered issues, which he described as "derivative". He noted that it is not easy to distinguish between regular and derivative types but also put forward the idea that they were important for future research and that he hoped to "examine this derivative coinage at a later date" (Lyon 1955, 232). Before he discussed other aspects of the coinage Lyon pointed out that these 'derivative' issues include "the problem coins of the styca series that in the

past have been attributed to Aethelred I, Eardwulf, “Houad”, Aelfwald II, Aella and Beonna” (Lyon 1955, 232). These problem types are also absent from Hexham, according to Lyon, and most die link to one another. Lyon also drew out the differences in levels of production for each moneyer, remarking that four - Eanred, Fordred, Leofthegn and Monne - “produce on a vast scale” (Lyon 1955, 237). Leofthegn’s coins were singled out for the “individualistic” coins produced. The major question in the work is over chronology. Lyon assumed that the coinage stopped 15 years prior to the arrivals of Vikings in York in 867. Dating was a vital question, and one which he described as not being satisfactorily resolved.

Publications that followed the study by Lyon (1955) focussed on inventories of finds, firstly with the *Inventory of British Coin Hoards* (Thompson 1956). This was followed by a volume on early medieval material in Northern Irish collections (Seaby 1958), then an update on Thompson’s catalogue with a focus on the north of England (Metcalf 1960). In Metcalf’s addenda he specifically noted that “several of the styca finds are from areas west of the Pennines” (Metcalf 1960, 90). An article on the use of the words MONETA and MOT in tenth-century coinage also included a footnote on the coins of the moneyer Leofthegn. In the footnote the author states these coins are unusual since this moneyer engraved their own dies (Stewart 1962).

1963 saw the publication of *English Hammered Coinage* by J. J. North, a three volume compendium aiming to collate each type of coin in one publication (North 1963). Revised in 1983, the work was praised for its catalogue, but Pagan (1983, 266) suggested the historical introduction should be treated “with reserve”. Metcalf (1983) praised the work and its popularisation of knowledge and also suggested that it would make a perfect candidate for storage “in computer memory form”. It is North’s volume that is most used as a reference for Northumbrian pennies in the PAS database today. Old evidence was also reconsidered, with an article on the ‘Bath’ hoard (Dolley 1965). In it, Dolley (1965, 199) wrote that the “hoard” of coins and medals, dating from the Roman period to William III, and including Northumbrian pennies, is not a “plausible” assemblage. However, Dolley does wonder whether the 25 pennies are a parcel from the Kirkoswald hoard, perhaps acquired by a dealer and later concealed (see §2.2.2).

The end of this burst of activity is marked by the publication of another significant article, this time by Hugh Pagan. Pagan (1969) argued for a revised chronology of the coinage, based in part on inadequacies in Lyon’s argument. Pagan stated that for too long the numismatic dating has been too dependent on historical sources and he called for the numismatic evidence alone to be given greater weight. He discussed the “barbarous” productions and how it continued, potentially after a cessation of regal and episcopal minting (Pagan 1969, 13). He suggested that Vikings were already familiar with Northumbria and knew that it was politically unstable and therefore a good region to target. He discussed the Talnotrie hoard (previously discussed in §2.2.4.) and the important connections demonstrated between the Northumbrian pennies found there and Viking activity. The problem as Pagan appears to view it is the absence of a contemporary historical record for Northumbria throughout the ninth century and this absence leading to a lack of respect for the history of the kingdom. Pagan shifts the dating the coinage closer to 867, by revising the dates (see figures 3.8 and 3.9).

<b>Documentary evidence for reigns or episcopates</b>	<b>Pagan’s proposed revisions, based on numismatic data</b>
Eanred: 808/810 – 840/841	808/821 - 854
Aethelred II: 840/841 – 844; 844 - 848/849	854 – 858; 858 - 862
Redwulf: 844	858
Osberht: 848/849 – 862/867	862 - 865
Wigmund: 831 - 854	849 - 858
Wulfhere: 854 – 892/895	862 on

Figure 3.8: Revised dates for Northumbrian chronology from Eanred onward, proposed by Pagan (1969)

<b>Decades of Northumbrian rule</b>	<b>Implications for coin production and politics based on Pagan’s revised chronology</b>
820s	Issue of silvery coinage
Late 830s to early 840s	Peak in production of silvery issues
End of 840s	Coinage is significantly debased
850s	Peak of production of copper coinage
	Killing of Redwulf in battle with Vikings, brings Viking interaction closer to takeover of York
860s	Coinage ends
	Short reigns “ended by deposition, murder and death”, undermining Northumbrian institutions

Figure 3.9: Implications for Northumbrian history based on Pagan’s revised chronology

This period of numismatic study is characterised by an increased focus on moneyers and die-linkages, and most importantly an awareness that the historically accepted dating must be doubted. This question of dating has moved towards resolution over the past fifty years, and this PhD presses its acceptance further.

### 3.4. Consensus and debate: 1970 – 1987

This period of research into Northumbrian coinage saw the publication of the last of the large hoards, as well as prolific work by Elizabeth Pirie to publish Northumbrian coin finds, based both on museum collections and specific locations, such as York. The breadth of research also expanded with metallurgists revisiting the coinage, as well as work on Wulfsige (the only archbishop from the period to have not issued coinage), and the discussion of copper-alloy pennies in conjunction with Viking material. The period ends with the publication in 1987 of *Coinage in Ninth Century Northumbria: the Tenth Oxford Symposium on Coinage and Monetary History* (Metcalf 1987). This symposium was the first of its kind to bring together all those working on monetary activities in the kingdom of Northumbria. The legacies from this meeting continue to shape the field. This section is divided into two: publications preceding the symposium (3.4.1), and discussion of the symposium's subsequent publication (3.4.2).

#### 3.4.1. 1970-1986

As discussed in §2.2.1.4, in 1967 a hoard of Northumbrian copper-alloy coinage was discovered at a site very close to the location of the 1846 hoard near Bolton Percy. The two groups are argued to be part of the same assemblage, based on closeness to each other and similarity of content (Woods 2015). Although Pirie recognised some similarity in the assemblages, she was not explicit in her view as to whether they were from one hoard or not and she recorded the two groups separately (Pirie 1996, 2000b). The second group of material was catalogued before auction and recorded, which links concealment to the 866 Viking attack on York, or its aftermath. (Pagan 1973). It considers the coins of regal and episcopal authorities in turn and evaluates them

against coins from the Hexham hoard. Key outcomes are an expansion of the known corpus of dies, as well as support for the argument that coinage produced in Aethelred II's second reign was organised differently to that of his first reign. There is extensive discussion of the implications for the complex die-linkages within the coinage, which is discussed in chapter 4.

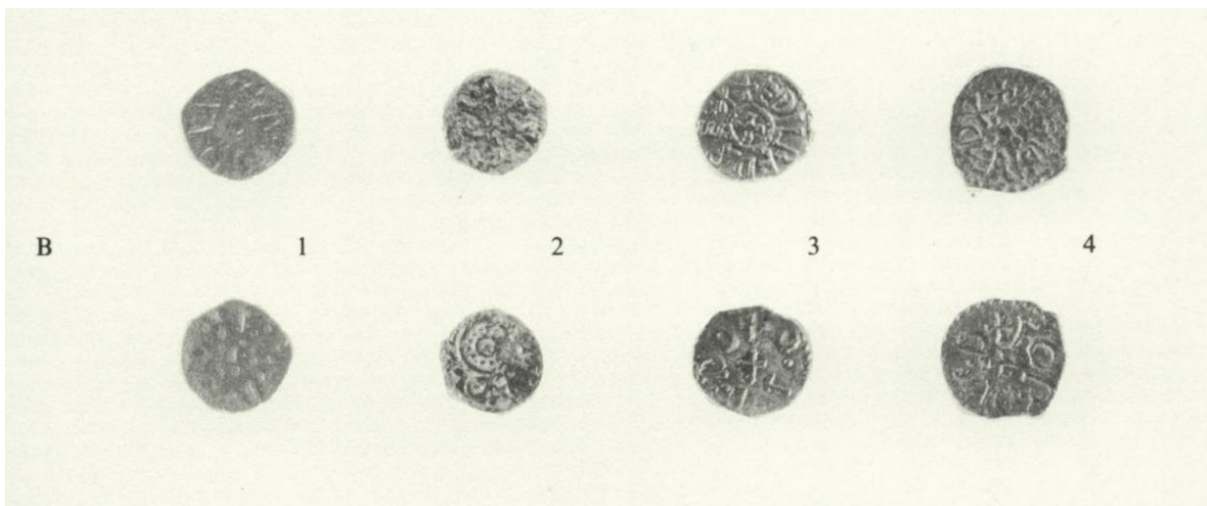
The 1970s also saw curator Elizabeth Pirie's voice become increasingly present in the field, firstly with the publication of a volume in the *Sylloge of the Coins of the British Isles* series, recording material in Yorkshire's collections (Pirie 1975). This volume was intended to be a companion to a second volume focussing on ninth-century Northumbrian coinage, but as we shall see in §3.5, that volume was published outside the *Sylloge* scheme. Described as a "lucid account" by Smyth (1977), this volume records Viking coins from Northumbria and other material up to and including that from the reigns of Henry III of England and Alexander III of Scotland (Dumas-Dubourg 1975).

Another surprise, similar to that of the second Bolton Percy hoard, was the re-discovery of a parcel of material from the Hexham hoard that had been purchased by Manchester City Art Gallery but had remained unopened since its arrival there in 1833 (Sugden and Warhurst 1979). A catalogue of this material was published, which was also examined by Pirie. During this era of study, it becomes increasingly rare for Pirie to not be involved with any research on the coinage. This included independent projects that researched and catalogued Northumbrian coinage from a range of contexts, including auctioned material (Pirie 1981). Her article on coins collected by William Fennell and Charles Winn demonstrates her tenacity with provenance detail, which is also repeated in her later article on the Ripon hoard (Pirie 1982b). In the Fennell and Winn article, Pirie also discusses how she has had access to a wide range of material, including from York Archaeological Trust, as well as Humberside Archaeological Unit, and coins from Hope-Taylor's excavations at Bamburgh (Pirie 1981). It is also clear that she was continuing work on the supposed second *sylloge*, describing how she was "preparing older collections in York and Leeds" for it (Pirie 1981, 48).

Pirie's work on compiling published catalogues continued with work on the collection of coins acquired by the Society of Antiquaries of Newcastle (Pirie 1982a). The

collection held a significant group from Hexham, as well as an eighteenth-century find from Coldingham. In a review of this volume Pagan (1982) suggested that Pirie was ascribing coins to Hexham that were not part of the hoard. In his assessment of her work, phrases such as she “hints” and “does not develop her ideas in detail” are used, implying doubt over some of the interpretations that Pirie was putting forward. This is one of the earlier expressions of doubt about some of Pirie’s work. However, this is balanced by Pagan’s gratitude to her “for cataloguing the Newcastle collection” (Pagan 1982, 254).

In addition to the aggregation of museum specimens, detectorists were discovering, and beginning to report, new material. The first article to mention this in detail discusses finds from Pot Ridings Wood and Moses Seat, both in South Yorkshire (Dolby 1982). Both findspots had copper-alloy pennies, alongside strap-ends (in either silver or copper-alloy), and several iron blades were found at the latter. It was noted these are the first groups of ninth-century material to come from South Yorkshire, and that the areas were “border country between the kingdoms of Northumbria and Mercia” (Dolby 1982, 151).



*Figure 3.10: Northumbrian pennies from South Yorkshire (Dolby 1982)*

Building on this corpus of early metal detected material is the assemblage from Sancton in North Yorkshire (Booth and Blowers 1983). At a different scale to the South Yorkshire sites, this next publication examines a corpus of over 100 coins, spanning 100

years of Northumbrian coin loss. Described as “casual losses on a site of intensive occupation” this is the first example of a site discovered through detection to be characterised (Booth and Blowers 1983). It also mentions that other finds were associated with the coins including copper-alloy pins, strap-ends and a plaque, as well as a weight inset with a Northumbrian penny. The article touches on some of the issues in working with detectorists but also demonstrates how this partnership can expand knowledge on Northumbrian monetary life.

Metallurgical analysis increases in this era of research, for the first time since the aforementioned work of Adamson. By 1980 new metallurgical research focussed on the alloys from which the copper-alloy coins were made (Gilmore and Metcalf 1980). The authors used neutron activation analysis to test findings from earlier analysis using XRF analysis. The XRF data showed that there were no discernible patterns in the use of alloys in Northumbrian coinage; this was confirmed by the neutron activation analysis with the authors stating that “no consistent trends were established” (Gilmore and Metcalf 1980, 88). However, one broader change could be discerned, including the introduction of zinc to the alloys during the reign of Eanred. The dataset comprised 43 coins, including the 5 that had previously been subject to the XRF analysis; most coins were from the reigns of Eanred, Aethelred II and Wigmund, with only one coin each to represent the coinage of Redwulf, Osberht and Wulfhere. No derivative issues were tested (Gilmore and Metcalf 1980, 94–95). The authors recognised this and suggested that further analysis could be usefully done to Redwulf (they also suggested the moneyer Leofthegn based in the individual nature of designs minted with his name) (Gilmore and Metcalf 1980, 97).



Figure 3.11: E.6092 - Penny of Aethelred II minted by Leofthegn, this example shows the unusual central motifs that are present on some of the dies which feature Leofthegn's name. © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\)](https://creativecommons.org/licenses/by-nc-sa/4.0/) licence.

Further catalogues followed, with the publication of *Post-Roman Coins from York Excavations 1971-81* (Pirie 1986b). This volume aggregated material from multiple excavations in York, compiling them as one publication for the first time. The volume was praised for the strength of its documentation (Stott 1987; Besly 1988; Metcalf 1989) and was described by Blackburn (1986, 191) as “doing full justice” to the finds from York. The same year, Pirie (1986a) also published ‘Finds of ‘Sceattas’ and ‘Stycas’ of Northumbria’ in a festschrift for Michael Dolley. This was described by Gay van der Meer as a “very useful inventory” and who noted with interest the “lively traffic” of the coins in coastal areas (van der Meer 1988, 278). Kenneth Jonsson noted the importance of the “stray finds” in Pirie’s essay and encouraged other coinages to be treated in a similar manner (Jonsson 1986).

1986 also saw the publication of *Medieval European Coinage* which presented a history of coinage using the collection of the Fitzwilliam Museum, Cambridge (Grierson and Blackburn 1986). The volume discusses Northumbrian coinage, describing it as “the commonest and the least respected of Anglo-Saxon coins” (Grierson and Blackburn 1986, 298). The authors note the high degree of die-linking but suggest caution when estimating the size of the coinage and that the intensity of linking perhaps reflects a smaller coinage than the surviving numbers of coins would imply. Significant points

raised also include their interpretation that there was “no interruption in minting” between Aethelred II’s reigns and that the “very substantial number” of derivative issues “presumably circulated with the regular coins” (Grierson and Blackburn 1986, 300). They introduce a more nuanced approach to the derivative issues, saying that it was “difficult to draw a satisfactory distinction between the regular and irregular series” (Grierson and Blackburn 1986, 300).

### 3.4.2. 1987 and the *Tenth Oxford Symposium on Coinage and Monetary History*

The publication *Coinage in Ninth-Century Northumbria* was the outcome of the Tenth Oxford Symposium on Coinage and Monetary History which took place at the Ashmolean Museum, Oxford in 1987 (Ashmolean Museum 2025). The resulting publication comprised eighteen papers from the event, with an introduction by the volume’s editor David Metcalf and an epilogue by Nicholas Brooks (Metcalf 1987; Brooks 1987). The theme was coinage in Northumbria, and although much focus was given to Northumbrian silver (Booth 1987) and copper-alloy pennies, space was also given to Viking coinage and coins from Wessex (Graham-Campbell 1987; Stewart 1987; Blunt 1987).

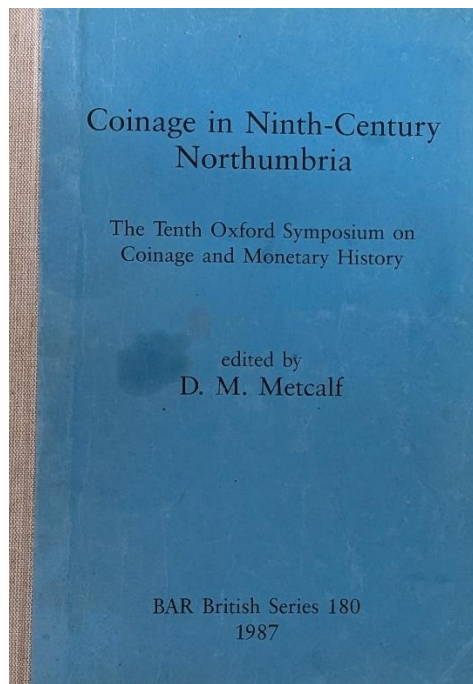


Figure 3.12: Cover of *Coinage in Ninth-Century Northumbria* edited by D. M. Metcalf.

There are three core areas of investigation for copper-alloy pennies that are covered by the volume: historical context for Northumbria, chronology of the copper-alloy coinage, and the use of metallurgical analyses. Papers from Kirby (1987), Lyon (1987) and Dumville (1987) evaluated the available evidence of the historical background of the coinage, whilst Smart (1987) discussed naming conventions on the coins. Smart determined that the name Odilo is of Continental Germanic origin and the only non-Northumbrian name of a moneyer of Northumbrian pennies (Smart 1987, 248). The papers of Kirby, Lyon and Dumville establish what is known about the historical sources that may be useful for the period, discussing in detail what they might mean for Northumbrian chronology, with Dumville, especially, encouraging a surgical approach to source analysis. These provide background to later discussions about the chronology of the coinage and make it obvious that establishing the sequence of events for the century is not straightforward.

The issues of how the dating of Northumbrian coinage should be revised will be expanded on in chapter 4. Stewart (1987) supports the revised chronology proposed in Pagan (1969) identifying the ways that historical sources support the numismatic evidence he proposed (discussed in §3.3). The chronology of copper-alloy pennies is further questioned in the metallurgical analyses that are part of the volume. Gilmore (1987, 159) described how “almost every aspect of their study is subject to doubt and, in some cases, controversy” and seeks to see if scientific techniques can remove some of the obscurity. One of Gilmore’s key proposals is that instead of looking to compare silver content between issues, a “brass standard” is key to understanding the relative fineness of the coinage (Gilmore 1987, 172).

The coins of Redwulf were analysed to see if analysis of the consistency of the alloys used can be refined, to improve upon previous studies (Gilmore and Pirie 1987). Gilmore and Pirie showed that there was no difference between the studies. The paper also claims that their analysis supports the ‘multiple workshops’ hypothesis proposed by Pirie; however, doubt is thrown on this in Metcalf’s response to the paper describing the interpretation of the data as an “open question ... [yet] grist to Miss Pirie’s mill” (Metcalf in Gilmore and Pirie 1987, 182). In contrast the third paper on metallurgical analysis compares issues from the reigns of Aethelred II and Osberht (Metcalf and

Northover 1987). The paper describes a clear difference in the alloys used in the reigns of Aethelred II and argues that the alloy used for Osberht's issues had a different composition to those of previous issues, with low or zero levels of zinc (Metcalf and Northover 1987, 188, 194). They use this to argue that Osberht's coins held face value, despite being to a lower standard and that the intrinsic value of the brass was the same as that of the coin. They also argue that the changes to alloy could demonstrate that this was a planned reform of the coinage, rather than a side-effect of debasement (Metcalf and Northover 1987, 211).

This era prior to the Symposium was one in which Pirie was establishing her place in the field, metal detected data and metallurgical analysis became more common and increasingly detailed cataloguing and publication was making data available to a wider range of researchers. Post-Symposium, however, it seems that a divide deepened between Pirie's interpretations and classification of the coinage, and the work of the wider numismatic community. Lyon (2017, 46) expressed the situation at the symposium as one of "wildly differing opinions" between those present.

This is expanded upon in papers from the archive of the Leeds Philosophical and Literary Society (LPLS), where in correspondence about the publication of *Coins of the Kingdom of Northumbria*, anonymous accounts discuss the situation. The letter in question is written by historian and LPLS council member Ian Moxon. In it he enclosed two assessments by "confidential referees" of Pirie's work, written for the society several years earlier when the LPLS was considering acting as publisher of CKN (see §3.5). These accounts describe how Pirie was "insensitively handled" beginning with her first papers on the topic at earlier events which were "met with implacable disagreement" (Moxon 1994b). The situation at the symposium, as reported to the writer by Pirie and enclosed in Moxon's correspondence, was one where:

"... she felt she was being brow-beaten, and while she may have taken things rather too much to heart, I saw her afterwards, and she was in a very agitated state. From what she told me she had been subjected to sustained and aggressive questioning. To do this, and in public, was again not the best way to win her co-operation." (Moxon 1994b)

The reference continues to describe how Pirie felt that she did not defend herself well and that part of her motivation to continue work on CKN was to demonstrate the arguments she could not persuade others of at the symposium. However, it is difficult to read this account of the symposium and to not recognise unprofessional standards of conduct.

### 3.5 Pirie's publications 1987 - 2003

Pirie's description and analysis dominates the publications relating to Northumbrian material during this time, either as an individual author, or as a specialist as part of a collaborative team. The period is marked personally for Pirie by her retirement from Leeds City Museum in 1991, the same year that she published the coins from the site of Lurk Lane, Beverley (Pirie 1991). Her next publication examined a hoard recovered from York in 1831, providing a catalogue of the material prior to its sale (Pirie 1994d). The issue of Pirie's classification was ongoing and in a review of the book, Pagan (1995) set out a revised version of Pirie's basic cataloguing, following the principles he had used for the Bolton Percy publication, stating that "readers may therefore find it helpful ..." (Pagan 1995, 253). The inference is that readers were not finding Pirie's classification helpful. The impasse between Pirie's fervently held belief in her own categorisation (which is described more fully in chapter 4), led to her publishing *Coins of the Kingdom of Northumbria* (CKN) with Galata Print Ltd – despite the fact the volume that was initially intended to be published as part of the British Academy's *Sylloge* series (Pirie 1996).



*Figure 3.13: Elizabeth Pirie at her retirement party, Leeds, 1991 (Contributors to British Numismatics 2021)*

The journey to publication was not smooth. Letters in the archive of Leeds Philosophical and Literary Society (LPLS) reveal that Pirie had been commissioned by the sylloge committee as early as 1972 and that the manuscript was revised in 1988 by John Kent, Keeper of Coins and Medals at the British Museum, but ultimately withdrawn by Pirie “after prolonged controversy and final impasse” (Pirie 1994b). The manuscript was brought to the LPLS in 1990 by numismatist and member Christopher Challis; LPLS agreed to fund the publication of the catalogue despite it being outside their usual remit (Pirie 1994b). Contributing to the LPLS’ decision were referees, one of whom stated: “I feel very strongly that this book should be published warts and all. It would be a serious loss to future scholarship if this material were not published ... I do not see anyone else having the ability combined with the commitment to re-do it very readily” (Moxon 1994b).

The editor of LPLS publications was historian Ian Moxon, who began work with Pirie, but there were repeated impasses between the two. It is clear from the correspondence that both were frustrated with the other: Pirie described Moxon’s editorship in a letter dated 16 January 1994 as “unduly crass” and was concerned by a perceived disregard for “accepted numismatic and epigraphic practice” (Pirie 1994b). In a letter appealing

for the support of the LPLS Council with regard to editing practice, Moxon described Pirie's comments as "renewed aggression" (Moxon 1994b). In February Pirie wrote to the president of the LPLS disappointed that the LPLS had not appointed a third party to work with her and Moxon. She also described why she was "reticent" to work with Moxon: "I have been quite out of my depth in most dealings with him so far. Many of our joint sessions working on the typescript were impossibly difficult, and, on occasion they left me feeling quite ill." (Pirie 1994c)

During 1994 there were repeated attempts between Pirie, Moxon, the LPLS Council and Challis to find a way to move the volume forward. The LPLS was aware it had already spent £5000 on the publication, and that costs were only going to increase, with a total figure for the publication estimated at £20-25,000 (Moxon 1994a). This did not happen and in a letter dated 9 December 1994, Pirie formally withdrew the manuscript from publication with the LPLS. In the letter she described the gratitude she felt in 1991 when LPLS agreed to fund the volume, but she felt the typescript was "unacceptably distorted" (Pirie 1994a). In response to Pirie, the president of the LPLS expressed disappointment that this is how the project was concluding and hoped that "all the valuable work which you have put into this enterprise will eventually appear before the public" (Mortimer 1994a). In a separate letter to the LPLS council, Mortimer described Pirie's decision as "a relief to everyone" (Mortimer 1994b).

In many ways CKN is a landmark publication – it shares the enormous die study that Pirie had undertaken using collections in Yorkshire over the previous decades and continues to be the most complete reference work on Northumbrian coinage. Lyon (1996, 176) described the publication as the "result of many years of diligent and painstaking recording and die-analysis" as a "now indispensable work" but that "its arrangement will probably prove seriously flawed". This was based on several factors but most prominently her rejection of a standard sylloge format (authority, followed by moneyer, followed by imitations) and instead using her own groupings, based on orthography, die-linkage and style. However, the decisions behind some of the groups were not always clearly outlined, to his frustration. Concern was also meted on the chronology suggested by Pirie, especially since she did not revise dating for any kings' reigns; most concern was kept for the attribution of moneyers between Aethelred II's

two reigns. Pagan (1997, 282) held similar concerns, describing it as a volume difficult to recommend to either numismatists or other interested parties. Agreeing with Lyon's views on the arrangement, Pagan also pointed out the value in the volume beyond the die-study and the extensive photographic plates, stating that a section of real value is that on the derivative issues, grouping them sensibly and making that especially challenging area of the coinage easier to navigate (Pagan 1997, 279).

In the same year Pirie and Cowell (1996) published an article on a new specimen associated with Eardwulf of Northumbria, describing it as the first specimen known from his reign. This coin precedes the copper-alloy coinage and its discovery at Burton Fleming in Yorkshire was, according to Pirie, evidence that the silver issues needed much deeper study (Pirie and Cowell 1996, 29). In 1997, Pirie's analysis of the coin finds from Whithorn was published, and the following year, the first article on Flixborough was published: Pirie and Marion Archibald ultimately undertook the numismatic analysis, but this was not published until 2009 after Pirie's death (Archibald et al. 2009). Wider publications in the 1990s included an update on *An Inventory of British Coin Hoards* (Manville 1993), which added detail to some of the earlier antiquarian discoveries.

The next major work was the study of the metal-detected site of Cottam, where Northumbrian pennies were a significant aspect of the assemblage (Richards et al. 1999). Pirie contributed to the resulting publication, describing the post-Roman coins. The site is significant in that it was the first 'productive site' near York to be extensively archaeologically investigated, and that knowledge of the site came from metal detection in 1987. In the same year, was Williams' (1999) publication on coin weights, including some inlaid with Northumbrian pennies. Williams's corpus had two categories for lead weights which he identified as Anglian and Viking respectively. He described the inset weights as a sub-group of the wider assemblage of inlaid Viking weights and creates a short catalogue of material, as well as suggesting that some individual coins, for example from Kiloran Bay, might be the vestige of a larger lead weight. It argues that these weights are an explicit connection between Northumbrian coinage and Viking activity.



Figure 3.14: X.I.L 775 - balance scales and weights from the Kiloran Bay burial. © National Museums Scotland

Pirie's publications with Galata Ltd. continued into the millennium with *Thrymsas, Sceattas and Stycas of Northumbria* (Pirie 2000b), which drew together her extensive lists of finds, gathered from a range of sources across her career. It included many finds where she was the only researcher to be in touch with the detectorist and data from it is included in this thesis. The final publication to appear before her death was an article on a metal detected hoard from near Bamburgh in *Archaeologia Aeliana*, which again demonstrated her close connections with metal detectorists. The hoard was reported directly to her through her network of contacts in that community (Pirie 2004).

Pirie's dominance in the field of Northumbrian numismatics had both advantages and disadvantages. On the one hand, her reputation meant that material was routinely reported to her, she was trusted by detectorists, and she was able to record assemblages that may have otherwise gone unreported. She was also dedicated to record management, and her publications of coin lists and catalogues are extremely thorough, and an important resource for research today. On the other, Pirie felt that her ideas were not duly considered, and that problems in communication beset earlier attempts with both the British Academy and the Leeds Philosophical and Literary Society to publish the major volume of her work.

Perhaps what was most disappointing to Pirie was that despite her determination and dedication, the consensus remains that her work did not make it easier for others to understand the coinage. Pagan (1997) stated that her arrangement in *CKN* was confusing; Lyon (1996) felt that the coinage was still unmanageable and felt that Pirie did not use enough discretion in distinguishing between die-cutting and die-use. Pirie placed great emphasis on the role of epigraphy and orthography in how the coins are grouped and divided. This has been viewed variously as “undue emphasis” (Abramson 2018, 35) or over emphasis (Pagan 1997) and a problem that accentuated difference – particularly regional (Naismith 2017, 115). This issue of exaggeration according to personal conviction is also evident in Pirie’s argument for multiple mint places, but despite her repeated proposal of it, any evidence she presented such as perceived stylistic attributes to places, was based on interpretation and argument alone (Lyon 2017). It has been argued that where Pirie saw complexity, the reality may have just been “chaotic” (Abramson 2018, 17).

### 3.6. Post-Pirie: metal detected studies 2004 to 2017

Elizabeth Pirie died in Edinburgh in 2005 (Lyon 2005). In the previous year the first in a series of major publications that used metal detected assemblages to understand the monetary history of Northumbria and wider Britain was published. By the mid-2000s there were datasets of large enough size to be analysed through doctoral projects that were subsequently published, such as *An Archaeology of Anglo-Saxon Trade* (Naylor 2004) and *Coinage in the Northumbrian Landscape and Economy, c.575-c.867* (Abramson 2018); as well as research projects like *Anglo-Saxon Landscape and Economy: using portable antiquities to study Anglo-Saxon and Viking Age England* (Richards, Naylor and Holas-Clark 2009). Pirie had predicted that metal detected finds would become increasingly significant for the study of Northumbrian coinage, a comment that was especially prescient as this thesis will demonstrate.

*An Archaeology of Trade in Middle Saxon England*, the publication of Naylor’s 2002 doctoral thesis from the University of Durham, re-assessed the early medieval trade by comparing pottery and coin assemblages from Yorkshire and Kent, using these to

respond to the questions of the extent to which royalty and church were involved and what distinctions there were between urban and rural locations (Naylor 2004). Part of this study's dataset included Northumbrian coinage, as part of the Yorkshire material. Naylor argued that rather than focussing on brief periods of activity, attention should focus on areas of sustained activity, identifying ongoing sites of trade and taxation as focal points for trade. At the end of the ninth century Naylor suggests the use of bullion economy replaced coinage. Overall, he emphasised the complexity of trade in the period, under what he sees as mostly royal control. Naylor (2007) expands this work to assess trends in how monetary usage changed between c.650 and c.867 in Northumbria, looking at patterns of coin loss across 'productive sites'. For the end of the period, where we see copper-alloy coinage emerge, Naylor argues that Northumbrian pennies are "one of the most successful types of their period" and we can see this through their extensive use (Naylor 2007, 58). He argues that this is due to their gradual loss of value, which becomes an advantage, meaning that they become a more everyday unit of exchange. Naylor's is the strongest voice to date to advocate for the success of the coinage.

The next major publication used the work of the Viking and Anglo-Saxon Landscape Economy (VASLE) project to take advantage of the insight that metal detected data brings to both archaeological and numismatic discourse (Richards et al. 2009, 1.2). VASLE, led by the University of York, was an early project which synthesised a national dataset of metal detected finds from EMC and PAS, as well as a dataset that focussed on productive sites, but Northumbrian pennies comprised a small number of the finds, and neither was Pirie's TSS data included (Richards, Naylor and Holas-Clark 2009). In addition to the narrative elements of the article, readers can access the original datasets to draw their own maps, and to call up charts of the artefact assemblages for over 60 'productive sites'. The secondary datasets developed for the project are also available from the Archaeology Data Service (Richards, Naylor and Holas-Clark 2009). Prior to this Naylor (2004) examined trade in middle Saxon England, using case studies from Yorkshire and Kent with pottery and coinage as the key object types analysed. This study used both metal-detected data, as well as excavated material, and created "date

groups” that enabled finds from both areas to be compared across kingdoms, as shown in figure 3.15.

8. Group 8 (c.855-c.870)

Coinage	dates of issue
Osbert, king of Northumbria	c.848-c.867
Wulfhere, Archbishop of York	c.854-c.867
Burgred, king of Mercia	c.852-c.874
Æthelberht, king of Wessex	c.860-c.865
Æthelred I, king of Wessex	c.865-c.871

Figure 3.15: Naylor’s date group 8, indicating cross-coinage comparison (Naylor 2004, 137).

For that study, Northumbrian coinage was just one part of the dataset, rather than a distinct research question. What it shows is that Northumbrian coinage was being increasingly used as part of the answers to research questions, rather than standing separately like it did before the advent of single finds. That said, unique finds continued to be shared, with two coins from the trading centre of Janów Pomorski in Poland identified and published, along with others found in European contexts (Bogucki 2009). Like Williams’ earlier work, these finds demonstrate new links between Northumbrian coinage and the Viking period. The wider contextualisation of early medieval money in England was approached in *Money and Power in Anglo-Saxon England* (Naismith 2012). Northumbrian coinage was discussed with three significant ideas raised. The first noted that Northumbrian coins were found in north Lincolnshire and it was suggested that they might have been used as small change there (Naismith 2012, 208). The second impressed that it is the “first substantial base-metal coinage in the post-Roman west” – viewing this as an achievement (Naismith 2012, 246). The third addressed possibilities of Northumbrian inflation, concluding that large hoards were “suggestive” but there is no method yet found to calculate a baseline (Naismith 2012, 247).

The final two publications to discuss in this section are *Sylloge of Coins of the British Isles 68: the Lyon Collection of Anglo-Saxon Coins* (Lyon 2017) and *Coinage in the Northumbrian Landscape and Economy* (Abramson 2018). Both works have a focus on Northumbrian coinage, and Lyon uses the publication to put forward his revised dating schema (see §4.3.3), as well as publishing his collection. Kelleher (2022, 1215) described Lyon's work as "one of the last examples of a collection formed by a collector-scholar" and as such the collection was established to provide answers to questions of interest to Lyon and then the wider numismatic community. His work on Northumbrian dating is a key part of the methodology in the following chapter of this thesis.

Abramson's volume was based on his PhD research at the University of York, and it intended to answer how monetisation occurred in Northumbria (but no further) and the effect we can see in the numismatic record. His volume examines coinage, from gold thrymsas to copper-alloy pennies, but unlike Naylor (2004) and Richards *et al.* (2009) he focusses solely on the coin finds, of which the Northumbrian material forms a part. The volume describes many of the issues that stopped Pirie's second sylloge volume from being published. Abramson described her as "feisty and obdurate" but also recognised that there was potential in her deep knowledge of dies to be "ground-breaking" (Abramson 2018, Acknowledgements). For the economy, Abramson reads the use of even lower value coin as increasing its use across the period, propelling monetary transformation and success.

### 3.7. In light of Viking camps

Even in the antiquarian literature, as discussed in §3.2, there were hints that Northumbrian pennies might be connected in some manner to migrants from Scandinavia. Although these suggestions remained as footnotes in the literature, in the later twentieth century, connections did begin to form between the presence of Northumbrian pennies and Viking activity. Blackburn (2002) was the first to recognise a connection between metal detected finds from the Torksey area and the historical record of it as a winter camp. The metalwork assemblage was indicative of the

connection, which included dirhams, ingots, hacksilver and weights, as well as coins. Blackburn noted the presence of Northumbrian pennies and discussed the potential longevity of their circulation, but could not decide if they represented “stray losses” made over a in the decades preceding Viking occupation, or were coins brought out of Northumbria by the army in 872 (Blackburn 2002, 92). A decade later Blackburn returned to Torksey, with an expanded corpus of finds and further information on findspots for some of the material. The large number of Northumbrian pennies he now felt were so numerous that they must have been brought from Northumbria instead of reflecting local circulation (Blackburn 2011, 225). He also connected the pennies with the copper ingots (or “hack-copper”) found at the site, suggesting a three tier system using Northumbrian pennies for the copper-based lower tier (Blackburn 2011, 235–236).



Figure 3.16: Cast copper alloy ingot from Torksey, ID 2086 (Richards and Hadley 2016)

Based on a symposium of the same name, the next publication, *Silver Economies, Monetisation and Society in Scandinavia AD 800-1100* (Graham-Campbell et al. 2011) briefly mentions Northumbrian pennies but provides significant context for how silver was used as a medium for exchange. The volume does however highlight international finds of the coins, with a paper mentioning those from Hedeby, but suggesting they had lost their economic function (Hilberg 2011). In contrast, Williams (2014, 22) suggests

that the evidence from Torksey suggests that Northumbrian pennies did continue in Britain to have an economic function within Viking contexts and suggests that circulation may have continued beyond the supposed end of the coinage in c.866. Williams (2014, 22) also considered the derivative issues and suggested that it was possible that all the “blundered late stycas may be Viking imitations”.

The hack-metal present at Torksey is given wider consideration in *Silver, Butter, Cloth: Monetary and Social Economies in the Viking Age*. Here the bullion economies of the period are viewed across the Viking world, but with little mention of how copper may be part, and with no mention of Northumbrian copper-alloy coinage (Kershaw et al. 2019). Woods (2020) has advanced understanding on the relationship between Viking economies and Northumbrian coinage, using the Torksey dataset to show how the issues correlate with the dating of the site. Woods (2020, 402) also furthers the question as to whether derivative issues were struck “in the immediate aftermath of the Viking conquest of York” and makes plain that further work comparing the dies of derivative issues is required. Whilst this thesis is not undertaking a die study of derivative issues, it does answer another question that has arisen from the presence of Northumbrian pennies at Torksey: whether it is usual for them to found at Viking camps, and if so, what can the proportion of derivative issues present contribute to understanding of the chronology and function of these sites.

The most recent publications to consider Northumbrian coinage are in *Making Money in the Early Middle Ages* (Naismith 2023) and *Money, Coinage and Colonialism* (Burström and Kemmers 2025). In the former Naismith (2023, 314) builds on the idea that Northumbrian pennies were a practical coinage, suggesting that the “low value opened it up to a wider range of patrons”. Despite this recognition, Northumbrian coinage is barely discussed in the 2024 volume *Small Change in the Early Middle Ages* (Naismith 2025a). In a paper in the Burström and Kemmers volume, Naismith (2025b) discusses Northumbrian coinage in the light of Viking colonisation, drawing attention to the fact that the coins they were encountering were likely unimpressive as Viking exchange used silver bullion. The fact that the Vikings were demanding payments, suggests a premium could be added for this undesirable (to them) coinage.

### 3.8. Conclusion

Over the course of the centuries that Northumbrian coinage has been researched and discussed, understanding of it has naturally progressed. It is recognised as an extensive, albeit under-studied coinage, with a potentially wide network of moneyers, die-cutters and metal workers involved in its production. However, key questions remain over its chronology, both in relative and absolute terms and what the function of the large numbers of derivative issues was. Many of these derivative types were “effectively anonymous” (Grierson and Blackburn 1986, 300). This suggests that for ninth-century Northumbrians, there was little distinction between how the issues were perceived once in circulation. This suggestion speaks directly to Kemmers & Myrberg’s (2011) discussion about *feeling* and the tactility of coinage, and *acting* and how the messages the coins portray. For the former, was there a point at which a Northumbrian penny looked no longer “coin enough” and how can that threshold be detected. The use of crosses, presumably Christian, as a key motif in coin design, speaks to *acting* and the significance of using religion to display authority for objects in regular usage. Abramson argued that copper-alloy pennies were used for daily transactions, but it is not clear to me on what basis that claim is made, however likely it may be. Abramson also set an agenda for future work on metallurgy, analysis of episcopal land holdings, assessment of fourth-century Roman coinage in the region, bioarchaeological analysis of contexts coins are removed from and more work on the iconography of shillings. Within this agenda, I would agree that metallurgical analysis has the potential to help answer a range of questions on the coinage. However, as I pursue in this thesis, the more pressing question is how a chronology for the material can be clarified, enabling a fuller understanding of its development and comparison between a range of types of assemblage.

## 4. A new periodisation for Northumbrian pennies

This chapter describes the methodology used to create a chronological framework to analyse a newly aggregated dataset of Northumbrian coinage. This is important as recent finds of Northumbrian coinage in Viking contexts require a reassessment of current understanding of the coinage. Section 4.2 outlines the data, §4.3 the periodisation and §4.4 the spatial analysis tools.

### 4.1. Introduction

Northumbrian coinage, despite a wealth of data, is not viewed by the wider archaeological and historical community as the key source of information for the ninth century that it should be. Chapter 2 evaluated the range of sites and methods of discovery that has accumulated since the late seventeenth century. From accidental antiquarian discoveries, archaeological excavation and metal detection, the latter accruing rapidly in the last twenty years (see figure 4.1), circumstances of discovery have an impact on the level of detail that is recorded. As a result, the data available about each find varies considerably. Data from the last 20 years of metal detecting has not yet been fully incorporated into the study of the material across Britain, with the only previous analysis limited to a focus on Yorkshire (Abramson 2018). Recent discoveries at sites of Viking winter camps such as Torksey demonstrate a need to analyse losses of Northumbrian coinage outside the kingdom and to understand what implications they may have for distribution and chronology, especially at its end.



Figure 4.1 – Metal detection at Cottam. Dave Haldenby, Julian D Richards, Humber Museums Partnership CC BY

Discussion of the historiography of the coinage in chapter 3 emphasised that a range of approaches have been used by actors such as Elizabeth Pirie (1982a, 1986a, 1987b, 1996, 2000b) and Stewart Lyon (1955; 2017). The lack of widespread adoption of a single approach to the typology of the coinage has stifled further study. The impasse between Pirie and the wider numismatic community has left the study of Northumbrian coinage in both a stronger, and a weakened position. It is strengthened by the incredible die study undertaken by Pirie, using collections from museums in Yorkshire, to understand what patterns there may be between die-linked issues. In *Coins of the Kingdom of Northumbria* over 2500 obverse die combinations are listed, as well as assemblages where coins from the same dies are present (Pirie 1996). This is a remarkable feat, and it seems unlikely that anyone will be so intimately connected to the detail of the coinage again. However, it is this intimacy with the material that I would suggest became a barrier to taking a broader, more encompassing view. In the light of new data and techniques, this ‘wide-angle’ rather than ‘close-up’ perspective is urgently required.

To address the questions of chronology and distribution, this chapter explains how periodisation and spatial analysis will be applied to a combined dataset of Northumbrian material. I propose a new periodisation for Northumbrian coinage, to better understand a relative chronology of production. This draws on the work of Pirie, Pagan and Lyon, to build a broad approach that emphasises concurrency of production, with moments of widespread change across the coinage. This concurrency included kings and bishops ordering coins to be minted at the same time, as well as moneyers working for different rulers potentially at the same time, or at least within a very short timeframe.

To understand coin loss and the distribution of finds represented by it, the chapter describes a wide-ranging, newly aggregated dataset. This includes finds from: Viking winter camps such as Torksey and Aldwark (Hadley and Richards 2016; Williams 2020); the Early Medieval Corpus of Coin Finds (EMC), the Portable Antiquities Scheme (PAS); excavated assemblages; antiquarian and metal-detected hoards. This will all be combined with the data previously compiled by Pirie (2000) in *Thrymsas, Sceattas and*

*Stycas*. This revised corpus of material will then be used to examine Northumbrian coin finds across Britain.

## 4.2. Data

This project draws on a range of resources to build a dataset for ninth-century Northumbrian copper-alloy coinage across Britain. These come from antiquarian hoards, excavated material, published catalogues of coin finds, metal detected finds and most recently investigations into Viking winter camps (see chapter 2). Among this range of sources, there is large variation in data quality. This is evaluated in detail in each of the subsequent chapters, since it informs the creation of a methodology flexible enough to overcome them all.

Even between similar sites, what and how material is recorded can differ; weight can be given to different types of finds according to research interests. For example, Northumbrian coinage recorded at Torksey and Aldwark varies in detail, and whereas there are images available for Torksey (Richards and Hadley 2016), there are not in the published volume on Aldwark (Williams 2020). This is expanded in chapter 5, which compares the assemblages of Northumbrian coins from those two sites. Chapter 6 examines single finds, and uses a dataset drawn from *Thrymsas, Sceattas and Stycas* (Pirie 2000), the Corpus of Early Medieval Coin Finds (EMC) and the Portable Antiquities Scheme (PAS). Metal detection and the reporting of finds to both the EMC and to the PAS has led to a considerable expansion in the number of single finds available for spatial analysis. Integrating these with finds from Pirie's own listings, enables a dataset of 1133 coins to be analysed. This is an over threefold increase compared to the 315 coins listed in Pirie (2000b).


Chapter seven, which examines excavated finds, uses case studies from York, Carlisle, Tyne and Wear, Whitby, Whithorn, Dacre, Flixborough, Beverley, Bamburgh, Lindisfarne, Dunbar and Llanbedrgoch. Understanding the patterns that spatial analysis may reveal, at a range of scales, will have implications for how the coinage is understood. Chapter eight on hoarded assemblages draws on data from both published material (Adamson 1834; Pagan 1967) and unpublished data from the

Yorkshire Museum and the PAS. For the data for all chapters, where possible, coin identifications have been double checked. Northumbrian pennies have the reputation of being challenging to identify, and it is only natural that there will be some inaccuracies in recording, especially when, as with the PAS, there are wide range of people recording them, some of whom do not see the material on a regular basis, as illustrated by figure 4.2.

## COIN

Unique ID: LVPL490

Object type certainty: Certain

Workflow status: Published 

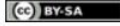
Originally recorded as 'Blundered and retrograde styca of Aethelred II (restored)', although the attribution must remain uncertain. The central motif on the coin's obverse is not seen elsewhere and the reading of the inscription is difficult to corroborate from the image with all letters very hard to discern. The coin's flan appears to be very thick, even for a Northumbrian penny (styca) and slightly dished. While it is possible that the coin is a worn and very abraded example of a styca it seems as likely that the coin is a foreign coin of more recent date.




### Notes:

Identified by Dr Simon Bean, Liverpool Museum



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*Figure 4.2: This shows an example of a coin recorded originally recorded as a Northumbrian penny and is now awaiting a new attribution. The Portable Antiquities Scheme CC BY SA*

Spatial data is recorded at a range of scales: from parish level in TSS and EMC entries, to three figure grid references in some PAS entries. To map parish data, I used a centroid location for each parish. This is combined with the more detailed spatial data to show broad trends in loss of single finds in chapter 6. It also has bearing in chapter 8, where some findspots of hoards are unknown but can be approximated. To host the dataset, I used Google sheets, adding importing data from the above sources, standardising identifications, adding a centroid grid reference for a named parish, and adding a periodisation based on the below. For spatial analysis this data was imported to ArcGIS Pro to analyse distribution.

## 4.3. Chronology and periodisation

### 4.3.1. Overview

Creating a path through the complexity of Northumbrian coinage to enable researchers to begin to examine its sequence of production requires the development of a relative chronology. This will then be integrated with revised absolute chronology based on the work of Pagan (1969) and Lyon (2017), as well as aspects of the extensive die study undertaken by Pirie (1996). Balancing these three studies will result in a new periodisation for the coinage based on changes to production across the coinage. Fiscal and political reforms by both kings and bishops led to the changes in the minting of Northumbrian coinage. These shifts between periods were marked by: the change in metal from base silver to copper alloy, the conclusions of kings' reigns, or, as is the case of Aethelred II's second reign, the cessation of use of moneyers associated with his first reign. In §4.2, I review periodisation as a numismatic tool, with a particular focus on the ninth century. I identify points of change in production, using those to establish a set of periods between which coin production can be chronologically separated. These periods are intended to take a 'wide angle' approach and to create a route for comparison that can be used by researchers new to the coinage.

### 4.3.2. Periodisation as a numismatic tool

Periodisation as Tougher (2017, 41) describes it "is a necessary mechanism for dividing up history in order to make it manageable." Here it is the implementation of temporal divisions to facilitate understanding of chronological change. It has been used as a method in archaeology and numismatics, as well as in history and literary studies (Besserman 1996). The strength of periodisation is that a "large volume of well-dated data can be processed and examined at different scales" (Kelleher 2013, 39). Whilst periodisation can be absolute, with explicit dates for each period, it can also be relative. Examples of relative chronologies include work on the first century BC coinage

of Herod the Great of Judea (Ariel 2000) and the work of Bopearachchi (1991) on Indo-Greek coinages of the last two centuries BC (Widemann 2000).



In numismatics, periodisation was notably used by Richard Reece (2003) to develop twenty-one periods to divide Roman coinage in Britain (see figure 4.3). The techniques he pioneered became part of the “armoury” of archaeological interpretation (Bland 2004). These periods divide Roman coinage according to groups of issues, based on coinage reforms (Walton 2011, 26). Reece’s work was subsequently expanded to twenty-seven periods by Casey (1986). According to Walton (2011), there is an important distinction between the schemes. Whilst Reece based his on changes in the physical production of the coinage, Casey’s periodisation was more closely aligned to written sources documenting changes in reigns (Walton 2011, 27).

Figure 4.3: Coins of Reece periods 1-5 (descending): Tiberius, Claudius I, Nero, Domitian, Trajan. Portable Antiquities Scheme CC BY SA

Medieval numismatic studies have also utilised periodisation, including those by Kelleher (2013) and Andrews (2019). While Kelleher used periodisation to examine monetisation and coin re-use in medieval Britain from 1066 to 1544, Andrews implemented periods to draw chronological comparison at a national scale for British hoards dating to between c.973 and 1544. For early medieval numismatics, and in particular, ninth-century Northumbrian coinage, Naylor (2004; 2007) and Abramson (2018) have both used periodisation to analyse their data.

In his work on early medieval trade Naylor (2004) used periodisation to enable the assessment of change at local and regional levels, comparing data from Yorkshire and Kent. To do this, he needed to move beyond the “basic classifications” of “thrymsa, sceatta, penny and styca”, in order to incorporate continental coin types into his analysis (Naylor 2007, 22). To do this Naylor plotted dates of coins, based either on hoard evidence or written sources and grouped them chronologically. Nine date groups were developed (see figure 4.4), which Naylor created from a combination of hoard and documentary evidence. These enabled coins of different types to be grouped within the same period and compared with pottery from similar periods. Where an issue had a longer lifespan, it was placed in the group where “the longest part of their likely issue dates belonged, with the caveat that their inclusion is problematic” (Naylor 2004, 22).

For these problematic attributions, the issue that they often have long chronologies, which could fit in a range of periods, but do not have distinctions within them to make attribution to a period absolute. Most relevant to this study are Groups 6 to 9 which encompass much of the ninth century and includes Northumbrian and Southumbrian issues found in the case study areas of Yorkshire and Kent (Naylor 2004, 47). Naylor also addresses the question of value, with reference to the production of Northumbrian pennies. He suggests that differences, for example between Group 7 and Group 8 may be “illusory” as the relative values for the coins, based on their precious metal content “may be quite different” (Naylor 2004, 47).

Group	Date range
1	Pre-680
2	c.680 – c.710
3	c.710 – c.740
4	c.740 – c.760
5	c.760 – c.790
6	c.790 – c.810
7	c.810 – c.840
8	c.840 – c.855
9	c.855 – c.870

*Figure 4.4: Groups according to date range (Naylor 2007)*

Further periodisation was applied by Abramson (2018). In contrast to Naylor’s scheme which was developed to consider all of England, Abramson only considered Northumbria. These differing spatial parameters influenced the choice of chronological groupings. Abramson was influenced by Naylor but expanded the scheme “to add definition” to phases of coinage (see figure 4.5). This meant the addition of an additional period to the scheme and a shift in date ranges. Broadly equivalent to Naylor’s Groups 6-9 are Abramson’s Periods N8-N10. Abramson’s N10 covers a similar range to Naylor Group 8 and Naylor Group 9, but is divided into the sub-periods N10a, N10b and N10c. Naylor Group 9 and Abramson Sub-period N10c correspond. Superficially it might appear that Abramson’s periodisation brings greater clarity to the chronology of Northumbrian coinage, however this is not necessarily the case, since essentially it only divides them into pre-Osberht (N10a) and post-Osberht (N10b).

Furthermore, the categorisation of irregular coins as a separate entity to the rest of the coinage perpetuates the idea that they are somehow separate from the official coinage. The huge numbers of derivatives testify to an alternate view, that for most users they were interchangeable with official issues (Lyon 2017). Abramson’s absolute dating is also conservative, with Osberht becoming king c.850, rather than adopting either Lyon or Pagan’s proposed revised dates. The sub-periodisation also suggests that ‘irregular’

issues came at the very end of the coinage. A different type of method is required to reflect the differing research questions and data of this study.

<b>Period</b>	<b>Sub-period</b>	<b>Date range</b>	<b>Description according to Abramson (2018)</b>
1		c.410 – c.470	Coinage of sub-Roman Britain
2		c.470 – c.587	Imported Pseudo-Imperial Victory tremisses
3	a	c.587 – c.670	Imported Merovingian gold coinage
	b	c.620s – c.660s	Early Anglo-Saxon gold coinage
	c	c.660s	Southumbrian pale gold shilling
4	a	c.685 – c.704	Northumbrian primary sceattas
	b	c.660s – c.710	Imported Southumbrian sceattas
	c	c.685 – c.710	Imported primary continental sceattas
	d	c.670 – c.710	Imported Merovingian deniers
5	a	704-37 or later	Putative northern non-regal emissions
	b	c.710s – c.750s	Imported secondary Southumbrian sceattas
	c	c.710s – c.750s	Imported secondary continental sceattas
	d	c.710 – c.750	Imported Merovingian silver deniers
N6		737 – 780s	Eadberht and successors
N7		737 – 796	Joint issues of Eadberht and Ecgberht
N8		780s – 800s	Inscriptional reverse sceattas
N9		pre-835	Sceattas: silver-alloy emissions
N10	a	c.837 – c.850	Brass – Eanred, Aethelred II (both reigns), Redwulf, Archbishops Eanbald II and Wigmund
	b	c. earlier 850s	Bronze – Osberht and Wulfhere
	c	mid-late 850s? - 867	Base and blundered – ‘irregular’ issues

Figure 4.5 -Periodisation of Northumbrian coinage according to (Abramson 2018, 38-44, 52-55, 71)

### 4.3.3. Revising dating

One of the difficulties in the periodisation of Northumbrian coinage is the lack of absolute dating. The coins themselves do not have dates on them, and the absolute chronology of Northumbrian kings remains debated (Rollason 2003, 193). Section 4.3.3.1. discusses the issues with using history sources for ninth-century chronology. The following section discusses how numismatics has suggested revisions to absolute chronology. Both sections are returned to in §4.3.5 which outlines how I have combined

relative and absolute chronologies into a revised periodisation for Northumbrian coinage.

#### *4.3.3.1. Issue with using historical sources for 9<sup>th</sup>-century absolute chronology*

Issues with historical sources for ninth-century chronology and discussed by Dumville (1987) and Rollason (2003), both of whom agree that there are significant problems facing historians for the period based on the paucity and reliability of documentary sources available. Both figures are also sympathetic to the work of past numismatists who have attempted to use evidence from the coinage to address chronology. The key issues that face those wishing to understand the period are that contemporary sources are very few, whilst non-contemporary ones are not as reliable as they first appear. Sources written in the ninth century within Northumbria are limited to the Northern Annals – which stop in 806. There are Northumbrian ecclesiastical figures writing letters at a similar time, for example Alcuin of York, but these missives are often composed from outside the kingdom. This echoes the case for other contemporary sources from non-Northumbrian writers. The most prominent of these is the *Anglo-Saxon Chronicle*, which has a West Saxon origin. It largely focusses on the Scandinavian impact on Northumbria rather than the kingdom's internal politics. Similarly, the Annals of St Berton (830-882) are a Frankish source, but contain little reference to Northumbria (Dumville 1987).

If contemporary sources are recording very little about Northumbria, where did a historically established chronology appear from? The answer lies with the non-contemporary work of chroniclers Symeon of Durham and Roger of Wendover, both of whom prove to be challenging sources for the period. Dumville (1987) discusses both in detail and his over-arching pronouncement is that the information related in them “has no discernible pedigree” so the dates recommended by them (see section 4.3.3.2.) cannot be corroborated. Symeon of Durham, writing in the twelfth century was part of a “hotbed of historiographic activity” that took place in Durham; due to this many sources are attributed to him, but he is unlikely to be the author of them all, including the *Historia Regium* which has a king list. Dumville (1987) is doubtful of the accuracy of such a list several centuries later and states that it should not be relied upon for the ninth century. Comparison with Roger of Wendover is often cited as corroboration of

the dates in the *Historia Regium*, but he too seems to draw on the same – now lost – source material, so neither can corroborate the other (Rollason 2003). Discussing the two authors, Rollason (2003) cites a lack of awareness of Eardwulf’s second reign as a key indicator for why “their dating of the reigns of subsequent kings [is] almost certainly wrong”.

Both Dumville and Rollason agree that due to the issues of paucity of contemporary sources and uncertainty in non-contemporary ones, numismatic data should be used to better derive an absolute chronology for the kings of Northumbria. However, Dumville does also share some frustration with numismatists attempting this work, citing a tendency to gloss over decisions relating to “numismatic time” and a lack of explicit quantification. The following section discusses how numismatists have dealt with this challenge.

#### *4.3.3.2. Debates in numismatic dating*

This debate is compounded by assessments of numismatic evidence that suggests alternative dates for Northumbrian chronology (Lyon 1955; Pagan 1969; Lyon 2017). This section describes how numismatic evidence supports revised dating for the period and shows its developments across the last seventy years.

Lyon (1955) used hoard and die linkage to suggest a chronology for the coinage based on relationships between issues rather than historical sources. He suggested that the copper alloy issues began late in the reign of Eanred, during Eanbald II’s episcopate, but not prior to the year 830. This was followed by a pause in production, which may also correspond to the episcopate of Wulfsige, who did not produce coin. Coinage resumed at an expanded rate at the end of Eanred’s reign and continued in the same vein in the first reign of Aethelred II and the reign of Redwulf. The coinage of Wigmund was produced contemporarily to theirs. With the restoration of Aethelred II to the throne minting continued, and Wulfhere’s issues were made at this time. With Osberht’s accession, derivative issues outnumber ‘official’ ones and Lyon proposed an end date for the coinage of c.855 – or even earlier c.850-851 (Lyon 1955, 235). Whilst this relative chronology of production for coinage in Northumbria was accepted in a subsequent paper by Pagan (1969), the absolute chronology proposed by Lyon was not.

In what is both a logical and a radical proposal, Pagan used Lyon's chronology but proposed shifting the date range so that events that are described by Roger of Wendover's *Flores Historiarum* and Simeon of Durham's *History of the Kings*, who were writing in the twelfth and thirteenth centuries respectively, as happening in the 840s took place in the 860s (Pagan 1969, 15). Pagan bases this suggestion on several grounds. Firstly, he argues that although Roger of Wendover and Simeon of Durham appear to concur with each other, this is not because they are independent sources, but rather because they drew on the same source text, which, Pagan argues, had not recorded Northumbrian chronology accurately. Secondly, using Lyon's proposed chronology alongside estimates of lengths of reigns from numbers of known dies, Pagan adjusted the lengths of each kings' reign. Thirdly, he used the silver penny of Eanred from the Trewiddle hoard to anchor the end of his reign to c.850, thus shifting dating forward for subsequent reigns. Lyon took the position the Eanred penny is a commemorative issue, minted around his death; it is the style of the coin and its parallels to silver pennies that dates it to c.850.

Broadly, as shown in figure 4.6, Pagan takes a view that the silver issues began in the 820s and by the late 840s the coinage was significantly debased, and it ended in the 860s (Pagan 1969, 15). This deduction is based on a "tentative scheme" for regnal dating, as follows: Eanred (? – 854); Aethelred II, first reign (854-858); Redwulf (858); Aethelred II (858-862); Osberht (862-865?) (Pagan 1969, 9). Responding to Lyon, Pagan (1969, 3) places Wulfhere's coins "around about the time of Osberht" and places Wigmund's issues, based on numismatic evidence, at the end of Eanred's reign and into Aethelred II's first reign. In contrast to Lyon's 1955 scheme, where there was a huge gap from 850 to the events of 867, which was his suggested end of the coinage, Pagan's closer dating shortens the potential length of Osberht's rule, which better reflects the proportion of coins issued in his name.

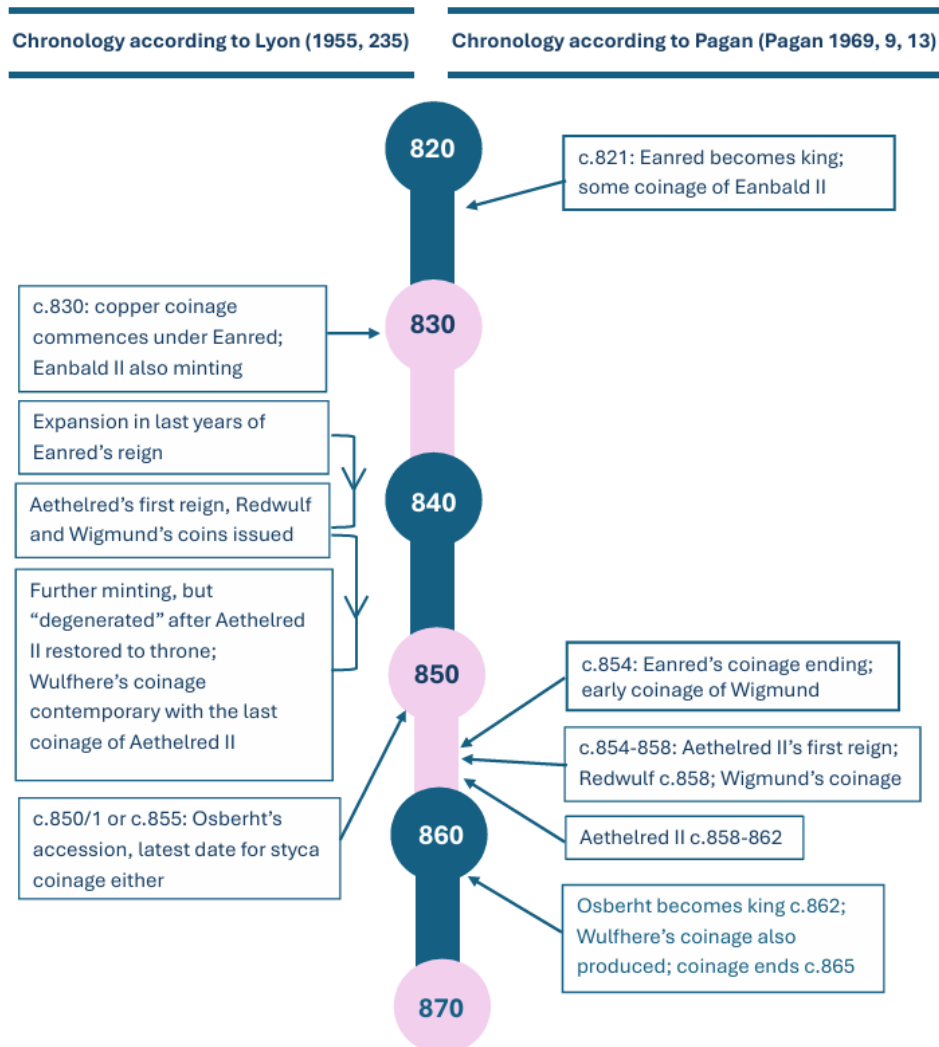


Figure 4.6: Timeline compares the relative and suggestions for absolute chronologies of both authors

It may then seem due to Pagan's publication that significant movement was being made to overhaul the dating of Northumbrian kings and bishops in the ninth century. However, this does not seem to have happened, and Pagan's proposals were largely left out of subsequent discussion of Northumbrian chronology. For example, in the publications *Coins of the Kingdom of Northumbria* (Pirie 1996) and *Thrymsas, Sceatas and Stycas* (Pirie 2000), Pagan's 1969 paper is present in the bibliography but its contribution to dating is not addressed in the text; the only reference to it is to support the importance of die linkages in the work (Pirie 1996, 29). In CKN Pirie follows a dating scheme based on historical sources, although why she chose this is not stated. A table in Pirie's study is described as providing "conventional dates" for kings and

archbishops, so the title perhaps implies awareness of Pagan’s proposals, but the actual dates used are not his (Pirie 1996, 25). In TSS, the table is reproduced with the same title, although slightly more detail on Pirie’s views on chronology is given. For example, Pirie (2000, 15) states that “large numbers of specimens survive from c.837 – c.855”, but still seems to favour Lyon’s 1955 paper, where she mentions his dating of the Hexham hoard to c.846 (Pirie 2000, 16). As discussed in §3.5, Pirie’s work was dominating the field at this time, despite ongoing debate, and it might be a case that she had enough challenges with her typology and did not have capacity to engage with debates on absolute chronology.

Conventional dates for the kings of Northumbria and archbishops of York as follows:	
<b>Kings</b>	<b>Archbishops</b>
Ecgfrith, 670-85	
Aldfrith, 685-704	
Eadberht, 737-58	Ecgberht, 732/4-66
Aethelwald, 759-65	
Alchred, 765-74	
Aethelred I, first reign, 774-78	
Aelfuald I, 778-88	Eanbald I, 780-96 [?]
Aethelred I, second reign, 790-96	
Earduulf, first reign, 796-806	Eanbald II, 796-c.830 [?]
Aelfuald II, c.806-08	
Earduulf, second reign, 808-10	
Eanred, c.810-41	
	Ulfsige, c.835-37
	Uigmund, 837-54
Aethelred II, first reign, 841-44	
Reduulf, 844	
Aethelred II, second reign, 844-c.849	
Osberht, c.849-67	
	Uulfhere, 854-900 [?]

Figure 4.7: Pirie’s “Chronological table” from *Coins of the Kingdom of Northumbria*, using her naming orthography

The chronology of Northumbrian coinage was revisited more recently by Lyon (2017). In this sylloge, which is drawn on substantially for the periodisation later in this chapter, Lyon returns to the issues of Northumbrian dating. He states that numismatic evidence

confirms that the dates for regal issues are “about ten years too early” but that episcopal issues “seem correct” according to historical dating (Lyon 2017, 46). To establish the latter, Lyon uses three pieces of evidence and makes one assumption. The assumption is that Wulfhere’s coinage continued until his death, whilst the points of evidence are that Symeon of Durham knew neither the years of death for Eanbald II nor Wulfsige, nor the durations of their episcopates. In addition to this historical point, Lyon cites a letter written to Wigmund in 852, and that the numismatic evidence suggests that Wigmund’s coinage was completed before the Hexham hoard was deposited (Lyon 2017, 46). Figure 4.8 compares the absolute dating schemes for Pirie, Pagan and Lyon. Lyon’s scheme is a revised version of his 1955 paper discussed in §3.3.

<b>Authority</b>	<b>Numismatic dating used by Pagan (1969)</b>	<b>Historical dating used by Pirie (1996)</b>	<b>Numismatic dating used by Lyon (2017)</b>
King Eanred	? – 854	c.810 - c.841	c.818 – c.850
King Aethelred II – first reign	854 – 858	841 - 844	From 840/1 or later
King Redwulf	858	844	844 or later
King Aethelred II – second reign	858 – 862	844 - c.849	844 or later
King Osberht	862 – c.866	849 - 867	c.859 - 867
Archbishop Eanbald II	Minting 820s	c.796 -830	796 – 830x835
Archbishop Wigmund of York	849 – 858	837 - 855	c.837 – c.854
Archbishop Wulfhere of York	c.862	854 - 900	c.854 - 900

Figure 4.8: Three potential dating dynamics for Northumbrian coinage

#### 4.3.4. Changes in production

The next section of this chapter will identify known points of change for the Northumbrian coinage, to begin to build a relative chronology for the coinage. However, it is important to remember that objects and the contexts in which they are found are part of a “complicated interaction” which cannot necessarily be neatly distilled

(Gräslund 1976, 69), as discussed by Naylor. Furthermore, changes in production did not drive older currency out of circulation. The longevity of some issues does add complexity, but it is no different to Roman coins which could also circulate for a long time (Walton 2011, 57).

In the late eighth century, all early medieval kingdoms who were using coinage, apart from Northumbria, shifted to a broad-flanned silver penny (Naismith 2017, 114). In Northumbria, smaller silver pennies continued to be used as coinage, although intermittently produced. One example of these issues are the series Y sceattas of Eadberht, who also issued with Ecgberht, Archbishop of York. Production became intermittent, until Aethelred I's second reign. Silver issues in this style of Northumbrian penny were minted by kings Aethelred I, Aelfwald II, Eanred and Archbishop Eanbald II of York (Naismith 2017, 114–115).



Figure 4.9: NLM-2287D1 silver penny of Aethelred I (774-778) minted by Ceobald. Portable Antiquities Scheme CC BY SA

The first change that affects production across the coinage is a shift away from (increasingly debased) silver to copper alloys. This change occurs during the reign of Eanred, with a new group of moneyers introduced for royal issues (Lyon 2017, 19). Initially issued by Eanred and Archbishop Wigmund of York these copper-alloy pennies

next change across the coinage with the accession of Aethelred II. This first reign of Aethelred II was marked by unrest, with Redwulf usurping the throne, and being subsequently killed by Vikings at *Alutthèlia* (Paris 1849, 179–180). Breeze (2020) makes the case for Bishop Auckland (County Durham) as the location of *Alutthèlia*. Both Aethelred II and Redwulf produced coinage during their reigns. Aethelred II and Redwulf also both used several of the same moneyers. During this period, Archbishop Wigmund of York also issued coinage, also with some of the same moneyers (Lyon 2017, 22-23). The final issues of this period are a group of coins struck by moneyers Wulfsige, Fordred and Monne for Aethelred II, likely very soon into his second reign (Lyon 2017 30). These were grouped together by Pirie into Group Ciii (Pirie 1996, 41), and re-use or are closely linked to coins of Aethelred II's first reign (Lyon 2017 30).

The next point of change in production, comes shortly after the restoration of Aethelred II, who, soon into his second reign, has new moneyers strike coins, marking “a longer period of coinage within the second reign” (Pagan 2018, 33). These moneyers are Aethelhelm, Cunemund, Eanwulf and Eardwulf. After the death of Aethelred II, Osberht acceded to the throne, producing new coinage alongside Archbishop Wulfhere of York. At this time, the number of issues produced that do not seem to be part of official production increased. Termed derivative issues in this thesis, they are typical of this last phase of the coinage (see §1.2).

Osberht was usurped by a king called Aelle, at an unknown date, shortly prior to Viking takeover of York in 866. In 867 both kings were killed in battle with the Great Army. Archbishop Wulfhere remained in York until he was expelled in 872. Coinage is not produced in York again until the issues of Guthred in the 880s (Gooch 2012). This revised coinage used a broad-flanned silver penny, like that used across other kingdoms.

The four changes that affect production across all the coinage are:

- Shift to copper-alloy flans for minting
- Accession of Aethelred II
- Use of new moneyers shortly into Aethelred II's second reign
- Accession of Osberht

They are the basis for a five-period scheme based on overall changes to production, which can then be used to represent which coins were approximately in production with a similar time frame. The subsequent sections outline the decisions I have made to constitute each of the groups.

#### 4.3.4.1. *Period 1*

Northumbrian coinage was produced in silver during the eighth century. By the early ninth century, issues were produced in an increasingly debased, but still predominately silver, alloy. This was termed Phase I by Elizabeth Pirie, who saw the alteration in alloy as a distinct marker in the coinage (Pirie 1996, 34-36), and Lyon concurred (Lyon 2017, 19). This period comprises all the base silver issues of Eanred and Archbishop Eanbald II. The largest proportion of coins in this period was issued by Eanred.



*Image 4.10: Silver penny of Eanred with moneyer Wilheah*

Examination of the quantities of issues produced and the relationships between moneyers and authorities, as well as die linkages, hints at further relative chronology within the period. For Lyon (2017, 19) relative numbers of issues within the Hexham hoard are also indicative of the point at which a moneyer might have been working. Figure 4.11 places these issues in relation to each other. Eanred's moneyers who appear to have been working earlier in the period are Cudheard, Cynwulf, Tidwine, Wilheah, Hwaetred and Aethelheah; this is based on lower representation of these moneyers in the Hexham hoard and the higher quality of silver in their issues (Lyon 2017, 20). Cynwulf also appears to have worked as a moneyer for longer than the

others, as there is a larger proportion of extant issues from him than others in his cohort. Both Pirie and Lyon concur that Eanred's moneyers working later in his reign were Daegberht, Herred, Wulfheard and Eadwine. They are represented with greater frequency in the illustration of the Hexham hoard made by Adamson, and have a more debased silver-alloy (Lyon 2017, 20). It is likely that some of these moneyers were working concurrently.

For issues minted for Archbishop Eanbald II of York, the date that he began to produce coinage is not known, however, according to Lyon (2017, 20) is likely to have been after c.805. Lyon (2017, 20) bases this on the fact that bishops of Canterbury began to mint coins without a regal name on them at this date, and Lyon suggests that archbishops of York would have requested the same dispensation. This was the time when archbishops of Canterbury were given permission to mint on an individual basis (rather than as a joint issue with a king), and it is assumed that York might have followed suit afterward. Lyon (2017, 21) suggests that the four moneyers who worked for Eanbald II likely worked in succession, based on the duration of his episcopate. The earliest, and perhaps longest-running was Eadwulf, who issued two-thirds of Eanbald II's coinage (Lyon 2017, 21).



*Figure 4.11: YORYM : 2000.2305 silver, Northumbrian penny showing obverse of Archbishop Eanbald II of York. York Museums Trust CC BY SA*

The three other moneyers who issued are Cynewulf (who was a prolific moneyer for Eanred around this time), Eadwine (who also issued for Eanred) and Aethelweard. Cynewulf and Eadwulf share one obverse die, indicating perhaps some limited sharing of dies (Lyon 2017, 21). Which moneyer used the die first is unknown, so Cynewulf was

possibly Eanbald II's first moneyer. Eadwine minting for Eanbald II is known from two coins, but it is not known at what point he may have been working for the archbishop (Lyon 2017, 20). Aethelweard is presumed to be the final moneyer for Eanbald II, since he continued to issue under the new episcopate of Wigmund (see figure 4.12).

<b>Eanred (silver, silver-alloy)</b>	<b>Eanbald II</b>
Earlier in reign: Cudheard, Cynewulf, Tidwine, Wilheah, Hwaetred, Aethelweard, Aethelheah	Earlier: Eadwulf  (unknown dates) Cynewulf, Eadwine
Later in reign: Daegberht, Herred, Wulfheard, Eadwine	Later: Aethelweard

Figure 4.12: Relative chronology for Northumbrian silver issues

During the reign of Eanred, there was a cessation in production which is marked by a change in the metal used, as well as new moneyers minting coins for him (Lyon 2017, 21). The alteration in fineness and a concerted effort to only issue in copper-alloy marks the first significant change that affected all coin production and marks the end of this first period of production.

#### 4.3.4.2. Period 2

Eanred's reform of the coinage was marked by the adoption of copper-alloy, and a new range of moneyers struck coinage for him (figure 4.14). In this second period of production, Eanred and Archbishop Wigmund of York were the issuing authorities. Eanred had an array of moneyers, whilst at this moment Wigmund was only working with Aethelweard (who also struck for Eanred). Those issuing for Eanred were Aldates, Badugils, Brother, Fulcnoth, Forthred, Monne, Odilo, Wihtrud, Erwinne and Wulfred (see figure 4.13). Unlike for the earlier coinage it is not possible to differentiate any chronology within this short period of production. Lyon (2017, 23), building on the work of Pagan (1969), suggests that some moneyers may represent separate workshops, which may be reflected in some stylistic divisions ascribed to the coinage by Pirie. If this 'workshop' proposal is true, what this suggests to me is that there were several groups sharing dies and issuing coinage simultaneously. Discussion of this is returned to in §9.2, for now a comment that the closer the die linkage between issues, the greater the

likelihood that locations of production were closely connected by geography, The period also includes derivative issues from Pirie’s Group A – these are coins whose designs extrapolated from ‘official’ designs of coins of Eanred.

Eanred	Wigmund
Aldates, Badugils, Brother, Folcnoth, Forthred, Monne, Odilo, Wihfred, Erwinne, Wulfred  Group A derivatives	Aethelweard

Figure 4.13: Relative chronology of Eanred’s copper-alloy issues and early issues of Archbishop Wigmund



Figure 4.14: 1838,0202.82 copper alloy issue of Eanred minted by Fordred, © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\)](https://creativecommons.org/licenses/by-nc-sa/4.0/) licence.

#### 4.3.4.3. Period 3

The next alteration that affected the production of the coinage was the death of Eanred and the accession of Aethelred II, who produced new issues in his name. He continued to have moneyers who also struck coinage for his father, Eanred, strike for him; these included: Brother, Forthred, Monne, Odilo, Wihfred, Erwinne and Wulfred. He also commissioned new moneyers to produce coinage during this period, they were Ealhhere, Eanred, Leofthegn, Wendelberht and Wulfsige (Lyon 2017, 22, 30).

Issues by Archbishop Wigmund of York also continued in this period, and it is likely that his moneyers also struck coins in succession, as appears to have been the case for

Eanbald II. During Aethelred II's reign, Wigmund had three moneyers strike coins. The other moneyer to strike coins for him, Aethelweard, is more likely to have done so during the reign of Eanred (see §4.3.4.2.). Under Aethelred II, the first moneyer to work for Wigmund was Coenred (figure 4.15), and a die that both moneyers used is given by Lyon (2017, 33) as evidence that Coenred succeeded Aethelweard. Coenred appears to have been followed by Hunlaf, who introduced some stylistic difference in lettering. The final episcopal moneyer was Aethelhelm whose production was smaller than the others. His coins mark the end of Wigmund's coinage, which appears to have been complete prior to the concealment of the Hexham hoard (Lyon 2017, 35).



Figure 4.15: Issues of Wigmund with Coenred. York Museums Trust CC BY SA



Figure 4.16: 1838,0921.3 coin of Redwulf minted by Wendelberht. © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\)](https://creativecommons.org/licenses/by-nc-sa/4.0/) licence.

During the first reign of Aethelred II, the throne was usurped by Redwulf, who issued coinage in his own name (see figure 4.16). He used moneyers who had also worked with Aethelred II or Wigmund (see figure 6). Lyon (2017, 30) described how due to the shortness of the reign there is “no scope for chronology”. Whatever the case, shortly into his reign, Redwulf was reportedly killed by Vikings, and Aethelred II returned from exile to resume the throne (Paris 1849, 179–180). The final coins within period 3 are those coins of Aethelred II that Pirie linked within Group Ciii (Pirie 1996, 43). These were a fairly small and discrete issue produced early within Aethelred II’s second reign but struck by moneyers who overlap with those of the first reign and that of Redwulf (Lyon 2017). These moneyers are Wulfsige, Fordred and Monne. There is a change in Aethelred II’s mint personnel between period 3 and 4, with a different set of moneyers striking most of the coinage for Aethelred’s second reign.

<b>Aethelred II</b>	<b>Redwulf</b>	<b>Archbishop Wigmund of York</b>
		Aethelhelm
Alghere		
Brother	Brother	
	Coenred	Coenred
	Cuthbeorht	
Eaduini		
Ealhhere	Ealhhere	
Eanred	Eanred	
Erwinne		
Fordred*	Fordred	
	Hunlaf	Hunlaf
	Hwaetnoth	
Leofthegn		
Monne*	Monne	
Odilo	Odilo	
Wendelberht	Wendelberht	
Wihtrud		
Wulfred		
Wulfsige*		

Figure 4.17: Moneyers in the first reign of Aethelred II, Redwulf’s reign, later issues of Archbishop Wigmund and the early part of Aethelred II’s second reign. Moneyers who minted for multiple authorities are placed next to each other, grey oblongs are blanks. Where there is an \* next a moneyer’s name, some of their coins are attributed to Pirie’s Ciii group.

#### 4.3.4.4. Period 4

Aethelred II's second reign began with a small issue of coins re-using dies from his first reign (see §4.3.4.3). Shortly after this, production across the coinage changes and a new cohort of moneyers work for him, therefore this period begins shortly into the second reign, rather than at its very beginning. These were Aethelhelm, Cunemund (see figure 4.19), Eanwulf and Eardwulf. Of these Eardwulf produced the largest proportion of coinage (Lyon 2017, 39). It is not known at what point Aethelhelm (who minted previously for Wigmund), Eanwulf or Cunemund were active (see figure 4.18). Lyon (2017, 40) argues that Eardwulf's issues were the last of those made in Aethelred II's second reign, as there are derivative coins issued during Osberht's reign that use the names of Aethelred II and Osberht. However, Aethelhelm and Eanwulf also continue to mint coins under Osberht, which would also suggest some potential continuity between reigns.

<b>Aethelred II</b>
Aethelhelm, Cunemund, Eanwulf, Eardwulf

Figure 4.18: Moneyers in the second reign of Aethelred II – no clear relative chronology



Figure 4.19: 1838,0202.167 coin of Aethelred II minted by Cunemund © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\) licence](https://creativecommons.org/licenses/by-nc-sa/4.0/).

#### 4.3.4.5. Period 5

The death of Aethelred II and the accession to the Northumbrian throne by Osberht changes coin production one more, with new issues under the new king and Archbishop

Wulfhere of York. Osberht worked with some familiar moneyers such as Aethelhelm, Eanwulf, Wulfsige and Wulfred, as well as commissioning coin from a new moneyer Winebeorht (Lyon 2017, 41). During this time, Archbishop Wulfhere of York (figure 4.20) also issued coinage with moneyer Wulfred (Lyon 2017, 44). This is also a period, where parallel ‘unofficial’ issues of the coinage are produced more widely. These include double-reverse types and the Pirie’s Group D coins.



Figure 4.20: 1935,1117.589 coin of Archbishop Wulfhere of York minted by Wulfred. © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\) licence](https://creativecommons.org/licenses/by-nc-sa/4.0/).

Osberht	Wulfhere	Derivative issues
Aethelhelm Wulfred Eanwulf Winebeorht Wulfsige	Wulfred	Double-reverses Group D

Figure 4.21: Relative chronology of Osberht, Wulfhere and derivative issues

Lyon (2017, 42) identified that many of the double-reverse types were likely produced during this time, based on die-links to either Aethelred II, Osberht or Wulfhere. Group D is a section of Pirie’s categorisation which serves to separate derivative issues (or as Pirie termed them ‘irregulars’) from official production (Pirie 1996, 44-45). Group D comprises two subsections, Di and Dii. Dii forms an extensive die chain, whereas Di consists of groups of clustered dies, not connected to Dii (Pirie 1996, 45).

This period ends with the cessation of ‘official’ production under Osberht, who was usurped prior to 866 by a new king Aelle. Both were killed by Vikings in 867 during a battle in York (Swanton 2000, 68). It has previously been assumed that all production ceased, but the possibility remains that the production of derivative issues continued, and this is a question I will discuss in §4.3.6. In chapter 8 I discuss evidence that likely extends production into the 870s.



Figure 4.22: YORYM-69D86B derivative issue featuring letters, but not names. Portable Antiquities Scheme CC BY SA

#### 4.3.5. A new periodisation for Northumbrian coinage

My original contribution to scholarship on the coinage is this revised periodisation. There is no suitable periodisation to be found elsewhere and subsequent chapters will demonstrate this periodisation’s utility and test it against a range of data. One of the strengths of the existing scholarship on Northumbrian coinage is that much of the work already undertaken focusses on detailed relationships between issues. However, as discussed in chapter 3, this can also be a hindrance, as the complexity of the coinage can become overwhelming, inhibiting comparative research. By combining aspects of work undertaken by Lyon, Pirie and Pagan, this periodisation is the first that allows those interested in the coinage to ‘zoom-out’ from the detail of the existing die studies

and to enable comparison between assemblages across periods of change in production (see figure 4.23).

This periodisation creates an integrated chronology for the coinage, and as discussed above, draws together several proposals for revision. The choices made are listed below, but it must be also born in mind that these dates remain approximate, and whilst they are currently the most reasoned estimate for dating, based on generations of preceding research, there may in future be room for movement. In chapter 9 one recommendation is for further metallurgical analysis, which may have an impact on the chronology in future. Key decisions I took with regards to the periodisation are:

1. To bear in mind the more radical revisions proposed by Pagan (1969), but to keep an awareness that Grierson and Blackburn (1986) suggested they might be too radical, thus encouraging a more moderate approach
2. Period 1 ends prior to the close of Eanred's reign, and several years must be allowed for the production of the copper-alloy coinage. It also needs to align with when Eanbald II was issuing coins, potentially in the 820s (see figure 4.8). The dates of c.818 – c.845 keep Eanred's reign similar in length, but moves the end of the silver coinage later, still keeping several years for copper alloy production
3. Period 2 is marked by the shift to copper alloy coinage, a period of approximately five years is attribute for this at the end of Eanred's reign. This enables overlap with the estimated earlier issues of coinage in Wigmund's episcopate under Aethelweard. During this period, Group A derivatives are also produced. Closing the period c.850 with the death of Eanred and an approximate date of production for the silver penny in his name.
4. Period 3 opens c.850 with the accession of Aethelred II. The period includes issues from his first reign, the reign of Redwulf, the issues by Wigmund with three further moneyers, and a very small number of Group C issues from the earliest months of his second reign, before the switch to a new suite of moneyers. Ending c.855 give sufficient time for these developments, bearing in mind concurrent production is likely

5. Period 4 is marked by the movement to a new group of moneyers by Aethelred II, and no issues by Archbishop Wulfhere, whose coinage appears concurrent with Osberht. Aethelred II's death c.859 moves his reign forward in time, as is argued earlier in this chapter.
6. Period 5 begins c.859, with the accession of Osberht and production of coinage in his, as well as that of Archbishop Wulfhere of York. During this period, derivative issues are produced in much higher numbers, based on both Aethelred II's issues and those of Osberht. 'Official' production ends c.866 with the death of Osberht, and there is no evidence that Wulfhere continues to coin money. However, as shown later in chapter eight, it is likely that some derivative production continued into the early 870s.

<b>Period</b>	<b>Authority</b>	<b>Moneyer/s</b>
1 c.818-c.845	Eanred	<i>(earlier)</i> Aethelweard, Aethelheah, Cudheard, Cynwulf, Hwaetred, Tidwine, Wilheah <i>(later in reign)</i> Daegberht, Eadwine, Herred, Wulfheard,
	Eanbald II	<i>(earliest)</i> Eadwulf <i>(unknown)</i> Eadwine, Cynwulf <i>(latest)</i> Aethelweard
2 c.845-c.850	Eanred	Aldates, Badugils, Brother, Erwinne, Folcnoth, Forthred, Monne, Odilo, Wihtred, Wulfred
		<i>Group A derivatives</i>
	Wigmund	Aethelweard
3 c.850-c.855	Aethelred II	Alghere, Brother, Coenred, Eaduini, Ealhhere, Eanred, Erwinne, Fordred, Hunlaf, Leofthegn, Monne, Odilo, Wendelberht, Wihtred, Wulfred, Wulfsige
	Redwulf	Brother, Coenred, Cuthbeorht, Ealhhere, Eanred, Fordred, Hunlaf, Hwaenoth, Monne, Odilo, Wendelberht
	Wigmund	<i>(earliest to latest)</i> Coenred, Hunlaf, Aethelhelm
4 c.855-c.859	Aethelred II	Aethelhelm, Cunemund, Eanwulf, Eardwulf
5 c.859-c.866	Osberht	Aethelhelm, Wulfred, Eanwulf, Winebeorht, Wulfsige
	Wulfhere	Wulfred
		<i>Group D derivatives</i>

Figure 4.23: Relative chronology for Northumbrian kings and archbishops.

#### 4.3.6. Derivative issue analysis

One of the most frustrating aspects of the previous work that has been undertaken on the Northumbrian coinage is the lack of integration of the derivative issues into discussion of the coinage. In Chapter 3, Pirie's decision to create a separate Group D for most of these issues was discussed, and at her own admittance, she did it for convenience, rather than as a reflection of the relationships between issues in the coinage. She acknowledged Group D, and in particular Group Dii had much in common with Aethelred II's issues. More recently Abramson has recognised the production of irregulars as a symptom of a later phase and attributed them to Sub-period N10 in his chronology. Lyon (2017, 46) emphasised that it is these issues that dominate during Osberht's reign and suggests that they drove "official moneyers out of business".

Besides this lack of integration, there are other difficulties in working with the derivative issues. One question that hangs over the irregular issues is how they are defined. Pirie developed a system based on die linkage, which others who also studied the coinage closely found difficult to understand and interpret (Lyon 2017, 17). There is also an issue with how terminology is used to describe these coins. Terminology, both historical and modern is used interchangeably to describe these coins variously as 'blundered', 'irregular', 'illegible' and sometimes 'imitative'. As discussed in §1.2 I think derivative is the most suitable name but that does then add another noun to the mix.<sup>2</sup>

Nevertheless, whilst the chronology of the derivative coinage is not understood, Pirie's extensive work on the dies enables us to propose an approach to try and disentangle these factors. Pirie attributed most irregular issues to a Group D, and within that separated them into Group Di and Group Dii – the latter of which was sub-divided further. I will use Pirie's pre-existing identifications of groups of die-linked coins to divide the derivative coinage further to analyse the final years of production. This has particular significance when considering finds from Viking sites.

The questions to ask of these derivative issues include whether they are predominant in assemblages at sites associated with Viking activity, and what there is to be discerned from their spatial distribution or die links. Williams (2020, 43) discusses the presence of

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<sup>2</sup> Tasha Fulbrooke (pers. comm.) in her work on 'barbarous' radiates favours the term imitative.

Northumbrian pennies at Aldwark and suggests circulation more generally continued into the 870s. My suspicion is that Viking sites may have higher proportions of these issues, if so, could the profile of these sites dating to the 870s, be used to question dating of other assemblages which contain Northumbrian copper-alloy pennies. To do this I will look at the proportions of derivative issues within period 5, comparing groups Di and Dii to each other, as well as to the regular issues. I will also analyse their regional distribution to see if there is any weighting towards one area or another. Where possible die links for these derivative types will be made, to see if die linkage can reveal further connections. To do this I will use images (where available) and compare the issue to derivative examples from CKN.

#### 4.4. Distribution and spatial analysis

The aim of spatial analysis in this thesis is to better understand the distribution patterns and concentrations of finds of Northumbrian pennies both within and without the former kingdom of Northumbria. Collected data was added to a spreadsheet and imported into the geographic information system ArcGIS Pro. As previously discussed, there are differences in the spatial information available from different sources. Where Portable Antiquities Scheme data provides six figure grid references to findspots, to those with researcher level access, information from both *Thrymsas, Sceattas & Stycas* (TSS) and the Early Medieval Corpus of Coin Finds (EMC) only relate spatial information to parish level at best. For this analysis, the more precise PAS grid referencing has been augmented by the addition of grid references for the centre of the parish listed in TSS and EMC. This geographic analysis is at a relatively broad spatial resolution, so precise location within a parish will not affect the results. The benefit in question is to map distribution patterns of Northumbrian coinage from across the Britain for the first time. Where possible, spatial analysis is used in each chapter to examine coin distribution according to periodisation. Further detail on these is given in chapter 6.

## 4.5. Conclusion

In this chapter I have developed a new periodisation that combines relative and absolute chronologies together to enable comparison between a range of assemblages. Based on changes in production across the coinage, the five periods clarify and bring into focus changes that affected minting across Northumbria. A revised absolute chronology has been attributed to this relative one, which advances the dating of Northumbrian coinage by several years. This will be applied to a range of datasets: Viking winter camps, metal-detected finds, excavated assemblages and hoarded material. Its application ‘zooms-out’ from the highly detailed focus of existing research, creating a route into understanding the coinage.

Chapter 5 will examine coinage from Viking temporary camps, comparing the profile of their periodisation and examining distribution of finds within the sites. Chapter 6 examines metal-detected material using periodisation to reflect periods of production and what spatial patterning there may be. Optimised hotspot analysis is used to predict the likelihood of coins neighbouring one another. Chapter 7 discusses finds from excavations, characterising the sites using periodisation where possible and examining internal spatial patterns where possible. Chapter 8 looks at hoarded material using periodisation and proposes revised dating for the deposition of some of these assemblages. Referring back to Kemmers and Myrburg (2011) this section is my own contribution to *creating* and pushing forward understanding of Northumbrian coinage. My reflection at this point is that, whilst there is always and inevitable more development to be made, for Northumbrian coinage future ‘creating’ perhaps needs to be undertaken collectively, rather than individually. Individuality has not always been the friend of progression for our understanding of this material, as discussed earlier in the chapter.

## 5. Northumbrian coinage at sites associated with the Great Army

This chapter investigates the presence of Northumbrian copper alloy pennies at Torksey and Aldwark. They are identified as one of several types of finds that, in combination, indicate the presence of the Viking Great Army at a site (Hadley and Richards 2016, 2025; Williams 2014, 2020; Woods 2020). However, whilst they have been studied as part of these assemblages they have not yet been studied as part of the wider corpus of Northumbrian coinage. It is therefore necessary to compare the sites and identify what patterns there are in the data so that they can be compared to other sites and assemblages.

### 5.1. Introduction

The discoveries of Viking Great Army winter camps at Torksey (Lincolnshire) and at Aldwark (North Yorkshire) have been known about for around twenty years. Detailed discussion of the finds assemblages has been published more recently. They both demonstrate how Viking presence can be detected archaeologically (Hadley and Richards 2016, 2025; Williams 2020). Torksey was the site of a winter camp from 872 to 873; Aldwark was a historically unrecorded location potentially connected with activity of the Great Army, with activity at the site dated to post-875 on numismatic grounds (Williams 2020, 42). There are further suggested locations for camps, such as Cottam B and East Thirston. At the former, Haldenby and Richards (2016a) have identified three phases of settlement including a short-lived Great Army phase; whereas the latter has been suggested as a Great Army site, with investigation is ongoing (Kershaw et al. 2023). Since attribution is more tentative these are considered with other metal-detected sites in chapter 6.



Figure 5.1: Locations of the Viking winter camps of Torksey and Aldwark

In chapter 4, I discussed how I propose to move analysis of the coinage forwards, through both a broad periodisation and through analysis of derivative issues. The periodisation will enable comparison between different assemblages based on moments of change in production across the coinage. The presence and significance of derivative issues will illuminate further what we know about the final phases of the coinage and has long been overlooked. This is the first analytical chapter to test the methodologies outlined in chapter 4 on two sites of Viking sites that were largely unknown to Elizabeth Pirie.

This chapter will compare finds of Northumbrian pennies from Torksey and Aldwark. These sites vary in the quality and detail of data that is publicly available for study. Nonetheless, for both sites, a broad periodisation of the pennies is possible, and for Torksey, also a closer scrutiny of derivative issues. This is not possible for Aldwark, as the absence of published images means that study of the derivative issues is not currently possible.<sup>3</sup> This chapter considers each case study in turn, applying periodisation to both, examining its implications for chronology and, where possible, spatial distribution. The chapter closes with an analysis of the results.

## 5.2. Case Study 1: Torksey

### 5.2.1. Background

The discovery of the location of the Viking winter camp at Torksey, described in the *Anglo-Saxon Chronicle*, has revolutionised understanding of the temporary settlements used by the Viking Great Army. Research led by Dawn Hadley and Julian D. Richards has led to a re-evaluation of the size, location and culture of these sites, established because of the overwintering of the Great Army in the 860s and 870s. From 2000 onwards many finds began to be logged with the Portable Antiquities Scheme (PAS), as well as on the Corpus of Early Medieval Coin Finds (EMC). An updated assessment of

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<sup>3</sup> In October 2021, February 2022 and October 2023 I contacted Gareth Williams, who was editor of the published volume on the site, but due to a range of circumstances was unable to supply images of the coins. In early 2025 I contacted Wendy Scott, now Curator of Hoards, replacing Williams, but no further images could be located.

the state of knowledge about the site was published in 2011, which expanded an initial report on finds from the area (Blackburn 2002, 2011). This publication was significant since it recognised that the winter camp would have not been a purely military one, but would have included women, children and tradespeople. It also aggregated the finds made so far at Torksey which were listed either by the Portable Antiquities Scheme, or in the collection of the Fitzwilliam Museum in Cambridge. Torksey stood out as unusual due to the large amounts of ninth-century coinage found at the site, which included 58 fragments of Islamic dirhams and the largest concentration of copper-alloy pennies to be found outside the kingdom of Northumbria, which at the time numbered eighty-three (Blackburn 2011, 226).



*Figure 5.2: Dirham fragment from Torksey (Survey\_374, ID:1482) (Richards and Hadley 2016)*

With some significant understanding of the site already attained, from 2011 to 2015 a multidisciplinary team led by Dawn Hadley and Julian D. Richards led an archaeological investigation which aimed to answer some of the questions raised by Blackburn and to evaluate the evidence that had already emerged from the site (Hadley and Richards 2016). The programme undertook extensive landscape survey, metal detection, environmental analysis, small-scale excavation and most significantly cataloguing of the thousands of finds already discovered. Together this work re-assessed the size of the camp at Torksey and responded to the question of why the Viking Great Army chose

to over-winter there (Hadley and Richards 2016, 30). The research continued after 2016, with the most recent publication in 2025.



*Figure 5.3: Coin of Osberht struck by moneyer Eanwulf recovered from Torksey (ID 661/DENO-FF5968) (Richards and Hadley 2016)*

### 5.2.3. Site and assemblage

During the ninth century, the landscape surrounding the camp provided a naturally defensive location, which was bordered to the west by the River Trent and on surrounding sides by marshland (Hadley and Richards 2016, 31). It covered an area of 55 hectares, to the north of the present-day village of Torksey, and was situated on land that was slightly raised above the surrounding landscape (Hadley and Richards 2016, 29). Even more significant than the discovery of the location, reasons for situation and scale of the camp, was the analysis of the thousands of finds from the site and their aggregation into one catalogue. Two catalogues are now archived with the Archaeology Data Service: the first with finds up to 2015; the second, an updated catalogue including finds unavailable previously (Richards and Hadley 2016; Richards, Hadley and Randerson 2024b). Most of the finds recovered from the site are metallic, however, the corpus of metal finds was augmented by surface finds, such as pottery, discovered through field-walking.

Through careful consideration of the finds profile from Torksey, Hadley & Richards developed an understanding of what kind of finds signature might indicate the presence, whether historically recorded or not, of Viking winter camps. This is based on

a pattern of finds that they recognised, first at Torksey, then subsequently at other sites, which included several diagnostic finds. These include gaming pieces, cut Islamic dirhams, hack-metal, ingots, lead and lead-inset weights, cubo-octahedral weights, copper-alloy metal work - including insular objects such pins, and, most importantly for this study, Northumbrian pennies (Hadley and Richards 2016, 2018, 2021). This finds signature that has been pioneered through the work at Torksey has changed how we are able to begin to identify these sites in the archaeological record. It is important to remember that it is the combination of artefacts, rather than one type alone, that is what makes an identification possible. The precise dating of the site to 872-3, as recorded in the *Anglo-Saxon Chronicle*, is supported by the dating of the wider metalwork assembly. This includes cubo-octahedral weights, which were first noted in use in Scandinavia in the 860s/870s. The lead inset weights also support this, since the insets can be sometimes closely dated to the 860s/870s.



Figure 5.4: Cubo-octahedral weight from Torksey (ID 403) (Richards and Hadley 2016)

A close dating to the 870s was first argued by Mark Blackburn who recognised that the coins of Mercia and Wessex dated to the 860s and early 870s, with the latest known being a lunette of Alfred of Wessex (c.872-5). These coins could have been plausibly “deposited in the early to mid-870s, and they are unlikely to have been left much later than c.880” (Blackburn 2011, 218). The argument for close dating has been further consolidated: analysis of the finds of Islamic dirhams from Torksey also concurs with an early 870s dating: the latest dirham dates to 866-8 (Woods 2020, 399). The fact that Northumbrian copper-alloy pennies are now recognised as a part of a ‘signature’ of the Viking Great Army, as well as their presence at sites that are dated beyond their

traditional chronology, means that understanding this coinage in greater detail is more important than ever, but also increasingly possible.

#### 5.2.4. Northumbrian coinage assemblage

The assemblage of Northumbrian coins from Torksey is notable both for their location and the size: copper-alloy pennies found outside the kingdom of Northumbria are relatively unusual (§6.3.4) and the Torksey assemblage is the largest volume of them to be found in such a location. In addition, the discovery of Northumbrian pennies at Torksey challenges the accepted dating for the end of the period that they were in use for. It has previously been assumed that Northumbrian coin production halted in the 850s, and that the Viking takeover of York in 867 saw circulation cease (Pagan 1969) (see also §3.3 and §4.3.3 above). In contrast to this assumption, the assemblage from Torksey includes over two hundred Northumbrian pennies that were presumably in use during the encampment. This means they were likely in circulation during the winter of 872-3, beyond the traditional end date for the circulation of Northumbrian coinage.

The mixture of coinage is significant, demonstrating that the people who lived in the winter camp were familiar with a variety of currencies, and since the precious metals were held in a variety of forms, such as coins or hack-metal, then multiple economic systems were in use (Williams 2014; Woods 2020). In addition, the presence of copper-alloy ingots could suggest that Northumbrian pennies are part of a partially copper-based economy (Blackburn 2011, 235–236; Woods 2020, 406–407). These factors are important to bear in mind, as it is easy to lose sight of the fact that the monetary and bullion economies at Torksey were complex and that Northumbrian pennies were just one part of them.



Figure 5.5: Copper-alloy ingot recovered from Torksey, with possible hammer marks (ID 443) (Richards and Hadley 2016)

Analysis in this chapter is based on my re-examination of the coins from Torksey. Access to the data has come from Julian D. Richards, who kindly supplied me with a copy of his finds list, complete up to January 2021. The data was mostly published in 2016 as part of the project's archive with the Archaeology Data Service but also includes a small number of coins that were subsequently recorded on the PAS, as well as a group found in late 2020 by detectorist Dave Stanley which were made available for this study and are now available via the illustrated catalogue since deposited with the ADS (Richards, Hadley and Randerson 2024b). Visual identifications of all coins in the dataset were made using digital images. The quality of the data itself is very good, and there are images for most coins available, either via the ADS, or through the Portable Antiquities Scheme, or privately. The high-resolution images are particularly important as they enable close examination of the coins, which allows consideration of their authorities and moneyers. Weights and diameters of the coins are also available, as well as eastings and northings for over half the coin finds, enabling spatial analysis to be undertaken. This was possible since the metal detectorists working with the team at Torksey were given GPS handsets in 2011 so that finds could be accurately plotted (Richards and Hadley 2016).

#### 5.2.4. Periodisation at Torksey

To assign the Northumbrian pennies found at Torksey to the periodisation model outlined in chapter 4, each coin was considered in turn and assigned to a period based either on the authority, or the combination of authority and moneyer (see §4.3.5). After refining the data and assigning the late silver and copper-alloy issues to periods, there are 209 Northumbrian coins used in this dataset. The results of the periodisation can be seen in figure 5.6. Of these, 123 coins had three-figure grid references, which means that spatial analysis by periodisation was possible for 58% of the dataset.

Figure 5.7 shows the relative proportions of the 184 coins from periods 1 to 5. The highest proportion of coins is from period 5, followed very narrowly by period 3. Periods 2 and 4 are also present in similar proportions to each other; period 1 is the least represented. The moneyers whose coins have been found at Torksey vary, and none of the periods at the site contain coins of every single moneyer. Both period 1 coins are from the later phase of Eanred's base silver issue, and two of those later moneyers are present, but not Herred or Wulfheard; nor are there any coins issued by Archbishop Eanbald II of York. In period 2, half the moneyers who struck for Eanred in copper-alloy are not present, they are Badugils, Brother, Erwinne, Fulcnoth, and Odilo. In period 3, absence includes no coins of Ealhhere, who struck for both Aethelred II and Redwulf. Other moneyers who worked for the former who are absent are Eaduini, Erwinne, Wulfred and Wulfsige; for the latter absent moneyers are Brother, Cuthbeorht, Fordred, Hunlaf, Odilo and Wendelberht. With only four coins of Redwulf present in the assemblage, the lack of representation of moneyers is not surprising. Neither are there any present struck by Aethelhelm for Archbishop Wigmund of York.

In period 4, Aethelhelm and Cunemund's coins for Aethelred II are absent. In period 5, Osbeht's moneyer Wulfsige is also absent. Whilst noting these differences in moneyers is of interest, its significance is still to be determined. In §4.3 I discussed how production was likely to be concurrent within periods, and that a chronology of moneyers is not possible to describe. Far more productive is to focus on the differences between periods of production. The periodisation continues to support Woods' (2020, 402) evaluation of the age structure of numismatic evidence at the site, in that the largest proportion of material at Torksey is from the latest phase of the coinage. Turning

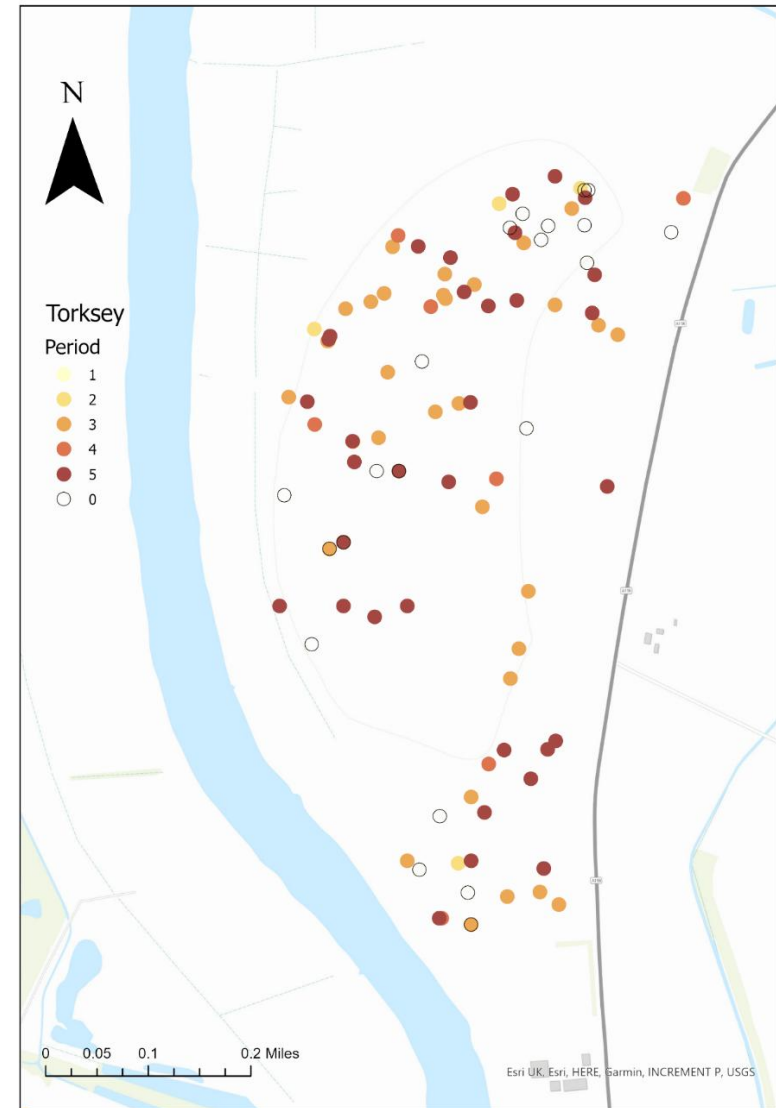
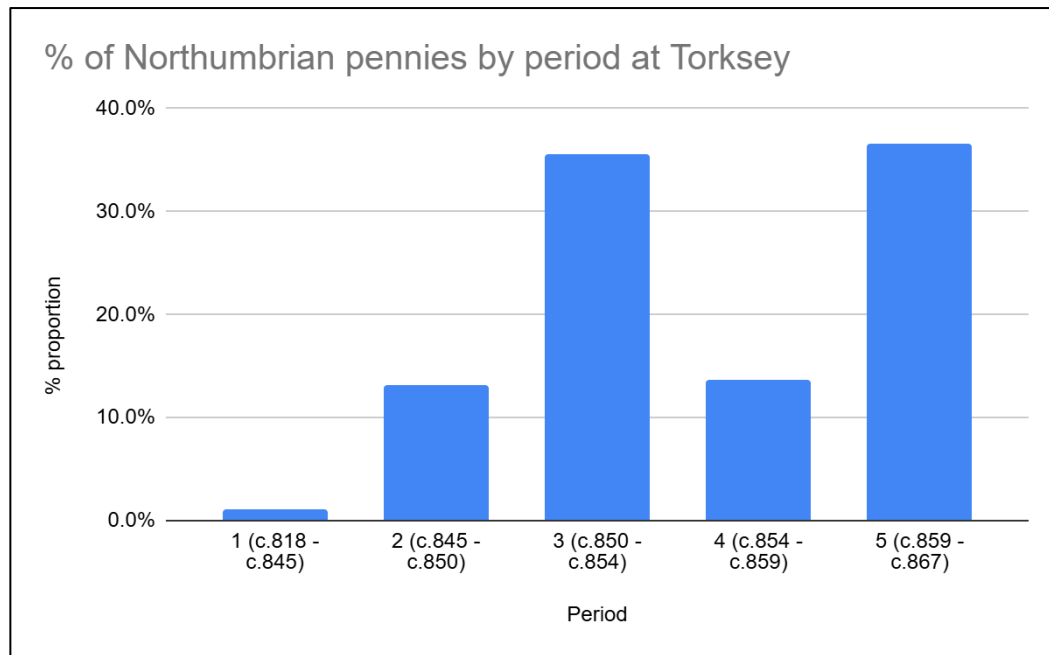
to spatial analysis, coins from across the periods are spread across the site, with little evidence of coins from the same period clustering and supports conclusions that drawn by Woods (2020, 410) that the assemblage represents losses in a single year. Torksey therefore represents a discrete snapshot of circulation for Northumbrian coinage and shows that the circulating pool of copper-alloy coinage came from all periods but was weighted towards those of later periods.

Period	No. coins	Dates	Description		Periodised coins (%)
			Authority	Moneyer/s	
1	2	c.818 – c.845	Eanred (2)	<i>Daegberht (1), Eadwine (1)</i>	1.1
2	24	c.845 - c.850	Eanred (19) Wigmund (1) Group A derivatives (4)	<i>Fordred (5), Monne (7), Wihfred (3), Wulfred (1), uncertain (3)</i> <i>Aethelweard (1)</i>	13.0
3	65	c.850 – c.854	Aethelred II (48) Redwulf (4) Wigmund (7) Uncertain (6)	<i>Alghere (2), Brother (4), Coenred (1), Eanred (8), Fordred (8), Hunlaf (1), Leofthegn (9), Monne (9), Odilo (2), Wendelberht (2), Wihfred (2)</i> <i>Coenred (1), Eanred (1), Hwaetnoth (1), Monne (1)</i> <i>Coenred (5), Hunlaf (2)</i>	35.3
4	25	c.854 – c.859	Aethelred II (25)	<i>Eanwulf (2), Eardwulf (23)</i>	13.6
5	67	c.859 – c.867	Osberht (12)	<i>Aethelhelm (2), Eanwulf (3), Monne (2), Winiberht (2), uncertain (3)</i>	36.4
			Wulfhere (1)	<i>Wulfred (1)</i>	
			Derivatives (54)	<i>Group Di (3), Dii (19), undescribed (30)</i>	
0	26	c.818 – c.867	Illegible (26)		-
Total					

Figure 5.6: Northumbrian pennies from Torksey according to period of production

Figure 5.7 (below): Proportions of periods of production of Northumbrian coins at Torksey

Figure 5.8 (right): Spatial distribution of periodised coin finds at Torksey.



### 5.2.5. Derivative issues in the Torksey assemblage

As was discussed in §4.3.6 derivative issues are the most poorly understood aspect of the coinage. Torksey's assemblage is a significant, since it has the largest assemblage of Northumbrian pennies found outside the kingdom. It is historically dated to 872-3 and the archaeological and numismatic evidence also points to this (Swanton 2000; Richards and Hadley 2016; Woods 2020), although some allow for the possibility of the site having been occupied for longer (Williams 2020, 81). With a short period of occupation in mind, one of the ideas that we can begin to test using data from Torksey is whether there are any patterns within the derivative issues present at the site, including the die-linked groups that were assigned to Pirie's Group Dii. This section characterises the assemblage of derivative issues from Torksey and presents the results.



Figure 5.9: Derivative issue from Torksey, where letters used do not create recognisable names (ID 498/DENO-02E035) (Richards and Hadley 2016)

The decision-making process for the attribution of derivative coin types from the Torksey assemblage was outlined in §4.3.6. To recap briefly, each individual coin is assessed in turn and potential similarities with dies described in *Coins of the Kingdom of Northumbria* (CKN) are listed (Pirie 1996). This long list of potential matches is then

reconsidered to either decide on a die-match, or a decidedly close affinity with a die design. If there is no close affinity, then the coin is categorised as an issue undescribed in CKN. Coins that are attributable to one of the sub-groups of derivative coins in CKN, are then categorised accordingly, and the results can be seen in figures 5.10 and 5.11.

These figures show that the highest proportion of derivative issues in the Torksey assemblage are those that cannot be linked to Pirie’s groups of derivative issues. For most of these uncertain issues, they are not attributed to a Pirie group as the dies used to mint them are not listed in *Coins of the Kingdom of Northumbria*, and nor do their letter forms have any diagnostic similarities with issues from either group. This demonstrates that there is a growing corpus of derivative dies, beyond those identified by Pirie. The largest proportion of these issues correspond to Pirie’s Group Dii, which is also split into sub-groups. The lowest proportion of derivative issues are from Pirie’s Group Di; this is perhaps expected as it is smaller than Dii. Group Di was a group that Pirie placed derivative issues that are not part of the major Dii die-chain in, at Torksey it has 3 coins in it. A die study of derivative issues, beginning with those from Viking sites is not the subject of this thesis, but would be important future work.

<b>Derivative issues by period and Pirie group</b>	<b>Dates</b>	<b>No. of coins</b>	<b>Proportion of derivatives at Torksey (%)</b>
Period 2: Group A	c.845 – c.850	4	7.0
Period 5: Group Di	c.859 – c.867	3	5
Period 5: Group Dii	c.859 – c.867	19	35.0
Period 5: Group D undescribed	c.859 – c.867	30	53
<b>Total</b>		<b>56</b>	

*Table 5.10: Derivative issues in the Torksey assemblage*

## % proportion of derivative vs derivative issues by Pirie Group

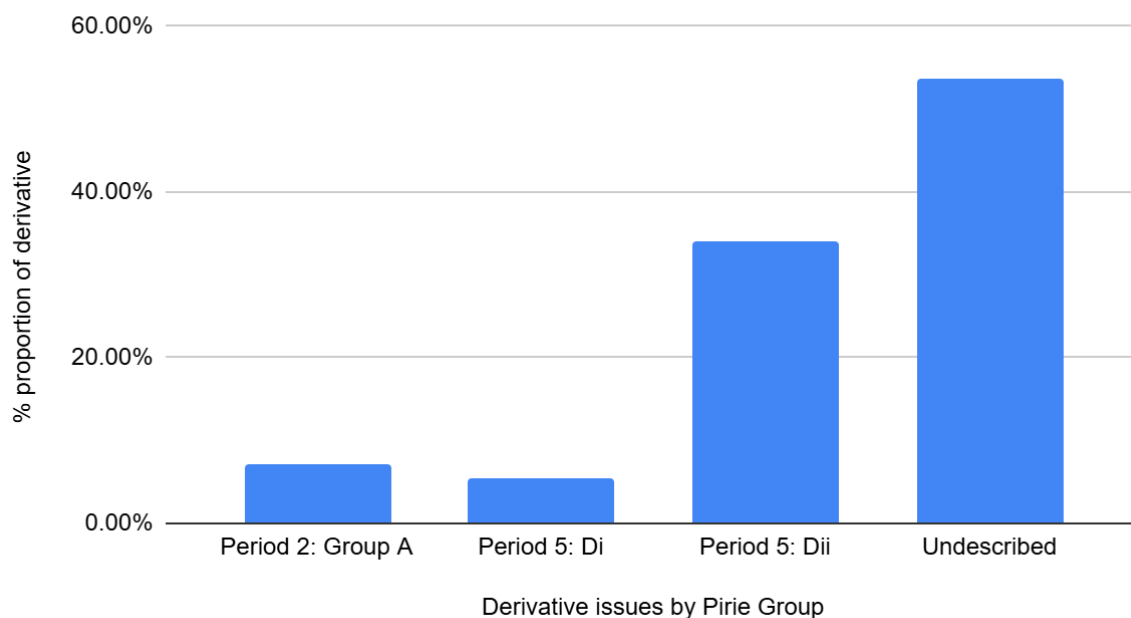


Figure 5.11: Derivative issues in the Torksey assemblage

There are 34 derivative issues that also have spatial data, and these can be plotted over the Torksey site. Figure 5.12 shows that derivative issues are generally spread across the site, and that there are no areas where any of Groups A, Di or Dii, or the undescribed issues cluster together. For eleven coins, specific derivative dies can be attributed to them, and those that have spatial data are plotted in figure 5.13. All are individual examples, apart from CKN 2165 whose obverse die is found on two coins; their findspots are at opposite ends of the site. This adds to existing evidence that coin loss was spread across the camp with no chronological clustering discerned. The ‘undescribed’ groups include dies that are not present within CKN. A study of these dies, and others recovered since Pirie’s publication has been noted elsewhere (Woods 2020; Naismith 2023, 213–215), but is outside the remit of this study.

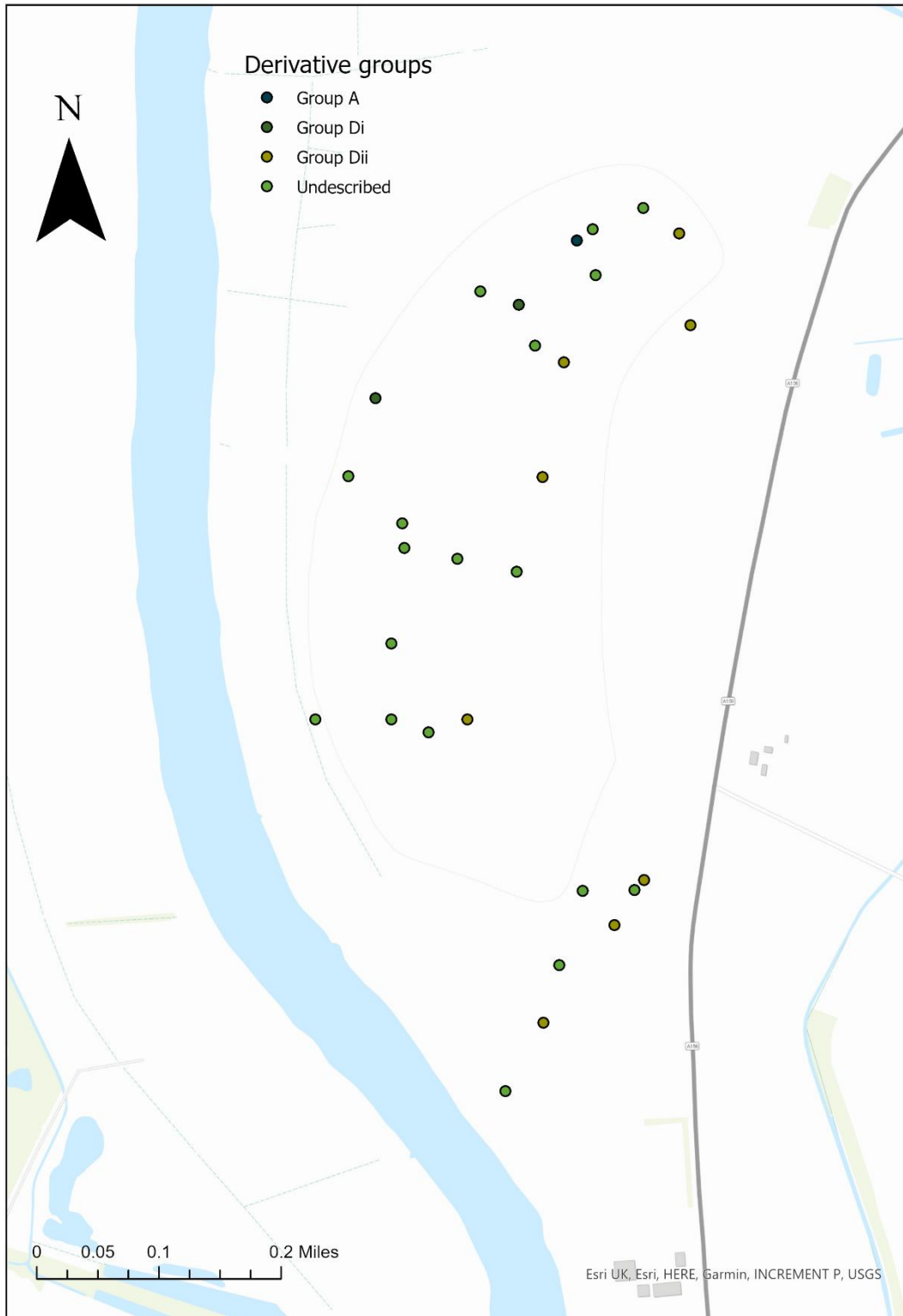


Figure 5.12: Spatial distribution of derivative issues from the Torksey assemblage

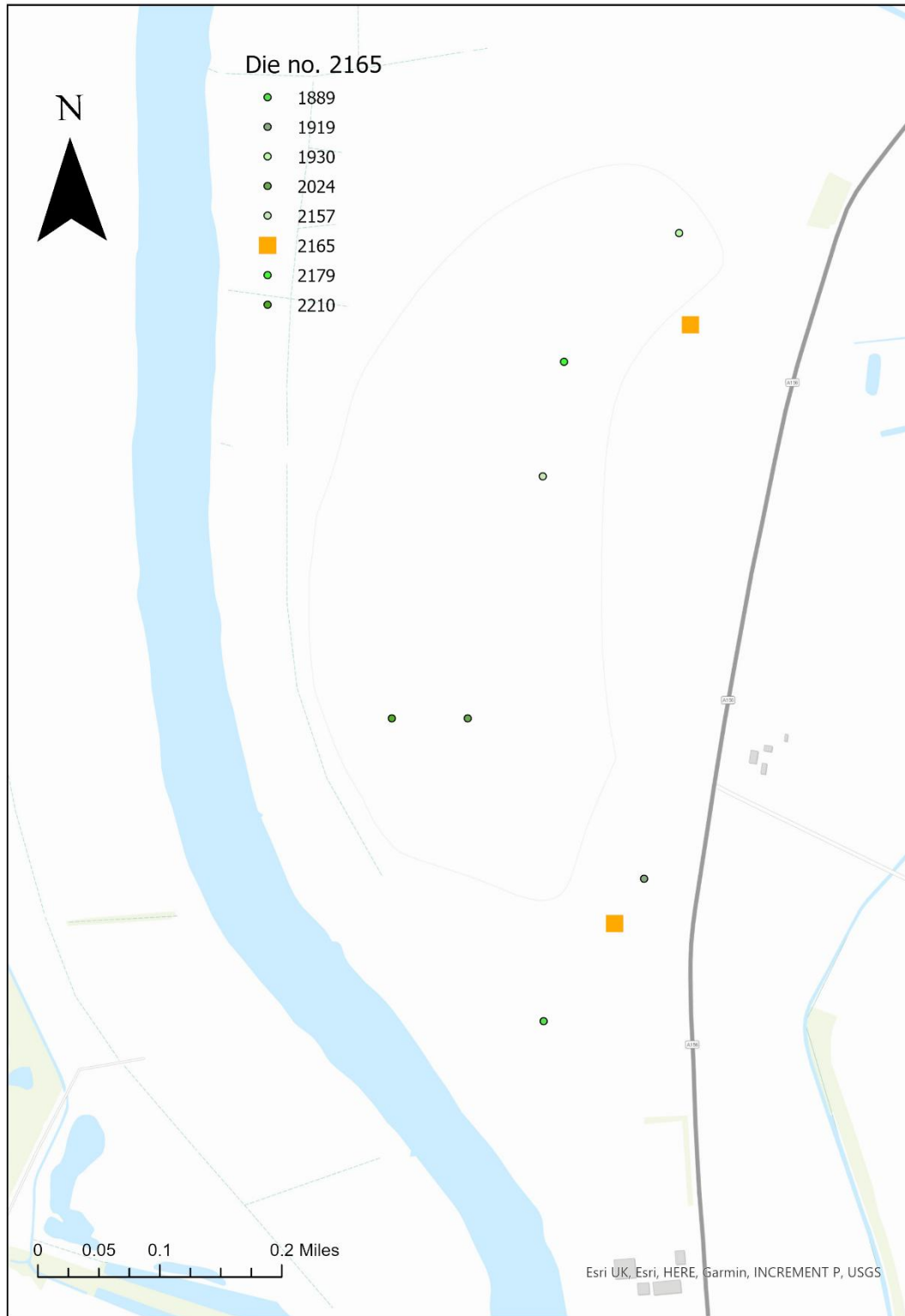


Figure 5.13: Spatial distribution of identified obverse dies from the Torksey assemblage

## 5.3. Case study 2: Aldwark

### 5.3.1. Discovery

Torksey is not the only location where a metal-detected assemblage indicates the presence of a site potentially connected with the overwintering of the Viking Great Army. In North Yorkshire, a site came to the attention of the PAS in 2003, that had been detected for several years and a large volume of finds recovered. However, in 2003, detectorists reported what they believed to be a hoard of objects, alongside human remains (Williams 2020, vii). The find was declared treasure, and its discovery precipitated a collaborative research project between the PAS, the British Museum, York Archaeological Trust and English Heritage. This involved archaeological investigation of the find-spot of the hoard, the wider area and cataloguing objects metal detected from the site and was published (Williams 2020, viii). Initially known as Ainsbrook, a portmanteau of the names Mark Ainsley and Geoffrey Bambrook, the two detectorists who discovered it, the site was subsequently published as ‘A Riverine Site near York’, since the landowners wished to keep the location anonymous at the time of publication (Williams 2020, vii). However, it is widely known that the site is close to the village of Aldwark, and that is the name by which the site is now known (Richards 2020). Located near to the River Ouse, 10m above the surrounding flood plain, a steep slope from the valley leads to the site (Howard 2020, 4).



*Figure 5.14: Viking camp at Aldwark from across the River Ure (Image: Julian Richards) (Richards, Hadley and Randerson 2024a)*

Analysis of the assemblage was key to identifying its significance as a temporary settlement associated with the Viking Great Army, as well as dating its occupation. Material included a range of finds similar in signature to those at Torksey, including copper-alloy weights, dress accessories and Northumbrian coins, as well as Viking Age silver in the form of Islamic dirhams, Southumbrian silver coinage, silver ingots and hack-silver, and rarer examples of hack-gold (Ager and Williams 2020). The hack-metal, as well as balance scales and the weights, all are indicative of a bullion economy functioning at Aldwark, in common with Torksey and other Viking Age sites gold (Ager and Williams 2020, 36). Numismatic and historical dating have suggested that the site was occupied in the mid-to-late 870s: the latest dated coins from the site are three of issues by Burgred of Mercia of sub-type Eii, which likely date to c.873-4 and the *Anglo-Saxon Chronicle* described how in 874 Halfdan's army divided and settled in Northumbria (Swanton 2000, 72; Williams 2020, 80–81). To be clear, Aldwark is not historically attested as a winter camp, unlike Torksey. There is also the possibility that Aldwark was a site that was already known to the Viking Great Army, and that there had been precursors to the 874-875 occupation, perhaps between 866 and 869 (Hadley et al. 2023, 84).



Figure 5.15: Centrally pierced coin of Burgred of Mercia of sub-type E ii, Bernheah (object ID 2691191) (Richards, Hadley and Randerson 2024a)

### 5.3.2. Northumbrian coin assemblage

Whilst the initial supposed hoard (Hadley and Richards 2021, 214–215), whose discovery precipitated the research project did not contain any Northumbrian pennies, the wider site assemblage does. Ninety Northumbrian copper alloy pennies from the site were published in 2020 as a part of the British Museum's assessment of the site.

Two more are known from the PAS database bringing the assemblage to 92. There are a further 14 records of coins that were recorded from the 'Historia Detectum' site, which may be in addition to those already recorded at Aldwark, but also may not be (Richards, Hadley and Randerson 2024a). I have included them in this dataset, as although there is the possibility they may be duplicates, though comparison with published data doesn't reveal any obvious candidates for this.

For the 90 coins listed in the 2020 catalogue, the quality of the data available on them is relatively low. Over half the assemblage is identified as either "blundered" or "illegible", and whilst some identifications of authority and moneyer have been made, it is not detailed (see figure 5.16). There is reason to doubt some of the accuracy of the identifications provided: for example, sf1298 is identified as issued by Eanred with moneyer Eardwulf (Williams 2020, 38). Yet we know that whilst Eardwulf minted coins for Aethelred II, he did not do so for Eanred, and whilst there are a range of derivative issues that use Eardwulf's name in Pirie's Group Dii (Pirie 1996, 238–271), the Eanred-Eardwulf combination is as yet unknown. If this was a secure identification of this novel combination of king and moneyer, I would expect its significance to be more pronounced in the accompanying text. The absence of images of any of the Northumbrian coinage from Aldwark in the publication also means that none of its identifications can be either corroborated or expanded into greater detail. This is especially vexing for the derivative issues, since it means no further precision can be offered over their typology. The 14 'Historia Detectum' coins do have images, some of which do reflect derivative issues. These frustrations aside, the wider corpus of coinage was handled by expert numismatists, so whilst some granularity of data is absent, material is broadly identified.

Sf number	Description	Weight
<b>Northumbrian styces</b>		
1298	Earned (c. 810–40/1), moneyer Eardwulf	0.60g
1299	Earned, moneyer uncertain, fragmentary	0.60g
1300	Earned, moneyer uncertain	1.02g
1301	Aethelred II (840/41–44, 844–48/850), moneyer Alchere	0.82g
1302	Aethelred II, moneyer Brothor	0.85g
1303	Aethelred II, moneyer Coenred or Earned	0.71g
1304	Aethelred II, moneyer Earned	0.99g
1305	Aethelred II, moneyer Eardwulf	0.97g
1306	Aethelred II, moneyer Eardwulf; obverse very worn	1.02g
1307	Aethelred II, moneyer Eardwulf	0.84g
1308	Aethelred II, moneyer Eardwulf	0.78g
1309	Aethelred II, moneyer Eardwulf	0.64g
1310	Aethelred II, moneyer Eardwulf	1.06g
1311	Aethelred II, moneyer Eardwulf	0.54g
1312	Aethelred II, moneyer Eardwulf	0.86g
770	Aethelred II, moneyer Eardwulf	1.11g
1313	Aethelred II, moneyer Eardwulf; obverse illegible, glassy patina	0.85g
1314	Aethelred II, moneyer Eardwulf; obverse illegible, glassy patina	0.85g
1315	Aethelred II, moneyer Ethelweard?, reverse corroded	0.61g
1316	Aethelred II, moneyer Fordred, fragment	0.53g
1317	Aethelred II, moneyer Monne, badly chipped	0.64g
1318	Aethelred II, moneyer Monne	0.94g
1319	Aethelred II, moneyer Wulfred?	0.87g
1320	Aethelred II, 'Edired?' reverse	0.91g
1321	Aethelred II, moneyer uncertain	1.07g
1322	Aethelred II, moneyer uncertain	0.84g
1323	Aethelred II, moneyer uncertain	0.56g
1324	Aethelred II, moneyer uncertain	0.53g
1325	Aethelred II, moneyer uncertain	0.70g
1326	Aethelred II, moneyer uncertain	0.73g
1327	Redwulf (844), moneyer Coenred	0.95g
1328	Osbert (846–67), moneyer Monne	0.98g
1329	Osbert, moneyer uncertain	0.83g
1330	Osbert, moneyer uncertain	0.44g
1331	Osbert, moneyer uncertain; corroded	0.52g
1332	Osbert, retrograde, moneyer uncertain	0.77g
1333	Osbert, moneyer uncertain; heavily worn	1.04g
1334	Osbert, moneyer Monne	1.00g
1335	Archbishop Wigmund (837–54?), moneyer Hunof	0.85g
1336	Archbishop Wigmund, moneyer Coenred	1.06g
1337	Archbishop Wigmund?, moneyer illegible	0.99g
861	Archbishop Wulfhere (854–90), moneyer Wulfred	0.87g
1338	EAN.../illegible	0.68g
1339	Blundered, derived Aethelred II, moneyer Earned	0.50g
1340	Blundered, derived Aethelred II, moneyer Eardwulf	0.87g
1341	Blundered, derived Aethelred II, reverse illegible, corroded	0.82g
1342	Blundered, derived Osbert, reverse illegible	0.69g
1343	Blundered, derived Archbishop Wigmund	0.65g

Table 5 Single finds of medieval and post-medieval coins from ARSNY

Sf number	Description	Weight
1344	Blundered, derived moneyer Eardwulf	0.54g
1345	Blundered, derived moneyer Eardwulf	0.61g
1346	Blundered	0.65g
1347	Blundered	0.55g
1348	Blundered; corroded	0.73g
1349	Blundered	0.76g
1350	Blundered	0.97g
1351	Blundered	0.57g
1352	Blundered	0.44g
1353	Blundered	0.96g
1354	Blundered	0.62g
1355	Blundered	0.88g
1356	Blundered	0.56g
1357	Blundered	0.80g
1358	Blundered	0.83g
1359	Blundered	1.84g
1360	Blundered	0.48g
1361	Blundered	0.75g
1362	Blundered/illegible; corroded	1.07g
1363	Blundered/illegible; reverse corroded	0.82g
1364	Blundered/illegible	0.52g
1365	Blundered/illegible; corroded	0.67g
272	illegible; corroded	0.94g
1366–84	illegible (x19); in many cases corroded	0.79g, 1.10g, 0.85g, 0.67g, 0.73g, 0.62g, 0.74g, 0.59g, 0.56g, 0.66g, 0.72g, 0.81g, 0.47g, 0.83g, 0.40g, 0.51g, 0.66g, 0.52g, 1.72g
<b>Anglo-Saxon silver pennies</b>		
267	Burgred of Mercia (852–74), silver penny (two pieces), type A, moneyer Duthwite	0.835g
1385	Cocwulf II of Mercia (874–c. 879), Cross-and-Lorraine type, moneyer Lathwold, four fragments, incomplete	0.70g
1386	Edward the Confessor (1042–66), Pyramids type, moneyer Dutholf of York	1.15g
1387	Edward the Confessor, Pyramids type, mint and moneyer uncertain; small fragment only	0.25g
<b>Dirhams</b>		
1388–1401	Dirham fragments (x14). All were too fragmentary to be assigned to individual rulers, mints, or years of minting, with the exception of sf1401, which was minted at Balkh	0.21g, 0.25g, 0.20g, 0.48g, 0.37g, 0.91g, 0.38g, 0.31g, 0.55g, 0.56g, 0.18g, 0.52g, 0.22g, 0.88g
<b>Later medieval</b>		
1402	Cut half penny of Henry II, Short Cross type 1c, moneyer Pleres of London	0.72g
1403	Cut half penny of Richard I, Short Cross type 4a, moneyer Turko of York	0.39g
1404	Penny of Alexander III 1st coinage, type VIII?, moneyer Andrew of Roxburgh; in 4 pieces	1.21g
1405	Penny of Edward I class 2, London	0.99g
1406	Penny of Edward I, London	0.73g
<b>Post-medieval</b>		
1407	Silver penny of Elizabeth I, marked mint mark	0.84g
1408	Silver half groat of James I 2nd coinage	0.77g
1409	Fragment of silver shilling of James I rose mint mark	0.79g
1410	Scottish silver 20 pence of Charles I 2nd coinage	0.26g

Table 5 (continued) Single finds of medieval and post-medieval coins from ARSNY

Figure 5.16: Catalogue of finds from Aldwark, showing the sparse information for many coin types (Williams 2020)

### 5.3.3. Periodisation at Aldwark

Due to the challenges facing examination of the dataset outlined above, the analysis that can be made of the Aldwark material is more limited than that for Torksey. Spatial analysis of periodised material cannot be undertaken, since no grid references were recorded for metal detected finds. Still, using the identifications made in the site publication, an attempt at using periodisation to characterise the assemblage can be made (see figure 5.17). Although it must be born in mind that the identifications used could not be cross-referenced with the original material by the author. Figures 5.18 show the proportions of coins of each period from the site. By far the largest period of coin production represented with 54%, is that of period 5, and most of these coins are attributed to derivative issues. Period 3 is the next with 23% of the assemblage, followed by period 4 at 18% and then period 2. There are no period 1 coins in the assemblage. Since the assemblage is smaller than that of Torksey, there are also fewer

moneys represented, or the data about them (as in the case of Eanred) was not recorded. Periods 3 and 4 are present in relatively close proportions.

Period	No. coins	Dates	Description		Periodised coins (%)
			Authority	Moneyer/s	
1	0	c.818 – c.845	n/a		0
2	3	c.845 – c.850	Eanred (2) Group A derivatives (1)	<i>Unspecified</i>	4.1
3	17	c.850 – c.854	Aethelred II (12)  Redwulf (2) Wigmund (3)	<i>Alghere (1), Aethelweard (1), Brother (1), _red (1), Eanred (2), Fordred (1), Leofthegn (1), Monne (2), Wulfred (2) Coenred (2) Coenred (2), Hunlaf (1)</i>	23.6
4	13	c.854 – c.859	Aethelred II (13)	<i>Eardwulf (13)</i>	18.0
5	39	c.859 – c.867	Osberht (7)  Wulfhere (1) Derivatives (31)	<i>Monne (2) Uncertain (5) Wulfred (1) Group Dii (7) Uncertain (24)</i>	54.2
0	34	c.818 – c.867	Illegible (34)		-
Total	106				

Table 5.17: Proportion of coins by period at Aldwark

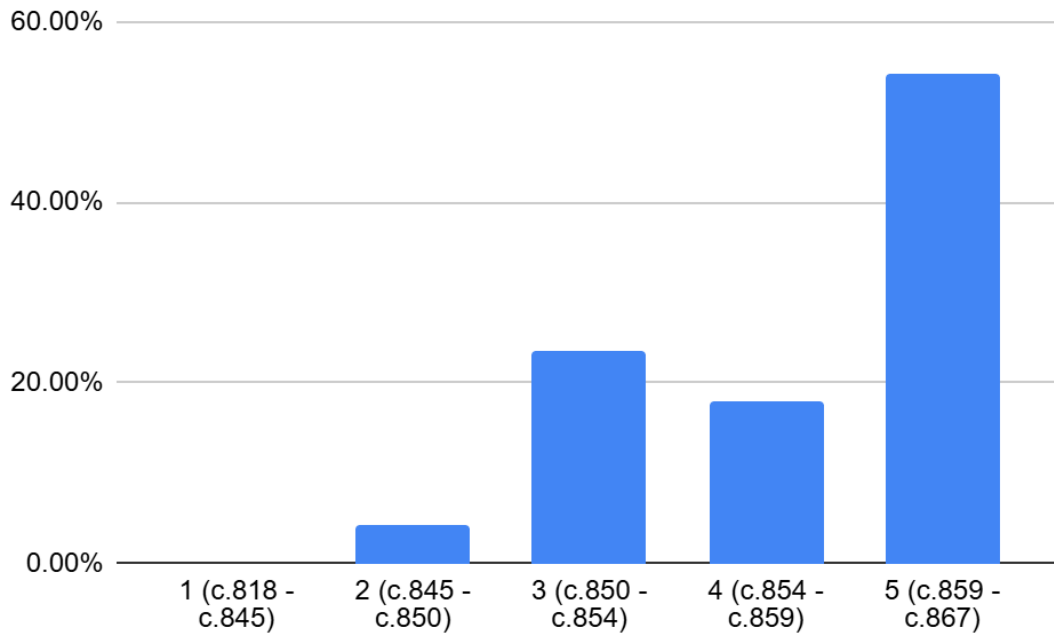


Figure 5.18: Graph representing periods of Northumbrian coinage at Aldwark

### 5.3.4. Derivatives at Aldwark

Unlike at Torksey, the derivative issues at Aldwark are not as well documented, so examination of what proportions of Groups Di and Dii is not possible. If images were available, this would be a different matter. From what can be observed, there is one coin that connects to the early derivative types of Group A (sf 1749) as it shares an obverse with the group (see figure 5.19). In addition, 7 of the 31 derivative coins can be attributed to Group Dii, and none from Di. Unlike at Torksey it is not possible to say whether the remaining 24 are dies that are not yet described, or whether they are known examples. If we proceed with the assumption that they are dies not yet described, then the proportions of these groups can be compared (see figure 5.20).



Figure 5.19: Sf 1749 from Aldwark, compare right-hand image of obverse to CKN 461; the reverse has runic letters used in the inscription (Richards, Hadley and Randerson 2024a)

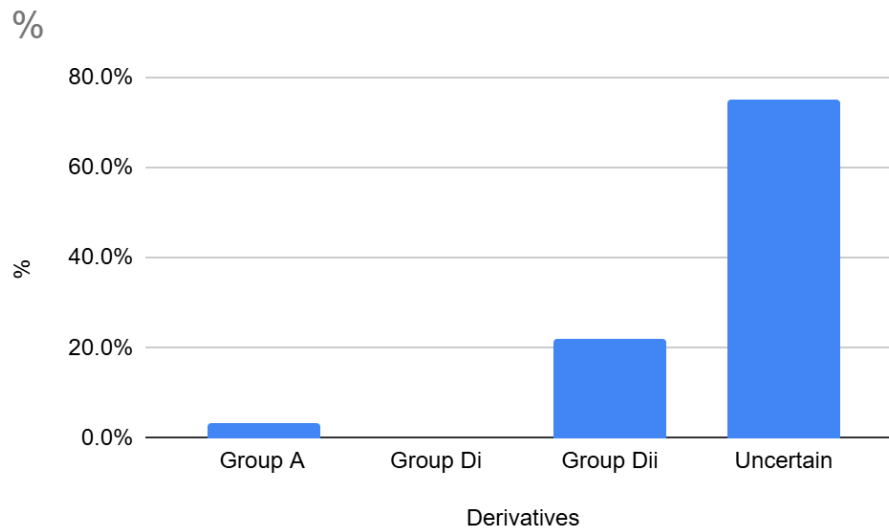


Figure 5.20: Graph representing proportions of groups of derivative issues at Aldwark

## 5.6. Discussion

Torksey and Aldwark are both sites associated with the activities of the Viking Great Army. Both have significant assemblages of Northumbrian pennies, with Torksey unusual in its size and location outside the kingdom of Northumbria. The occupation of Torksey is dated to the winter of 872-873, and whilst the occupation of Aldwark is less definite it could be attributed to either 866-867, the winter of 874-875, or slightly later in the 870s. If relative proportions of coins from each period of production are indicative of the dating of a site, then Aldwark certainly post-dates Torksey (see figure 5.21). Aldwark has higher proportions of material from both period 5 and period 4, and lower proportions of material from the earlier periods. Both sites show a clear pattern, whereby Viking temporary settlements have high proportions of Northumbrian pennies struck in period 5 present. Whilst there is a larger margin of error in the Aldwark data, due to its lower data quality, than that of Torksey, this remains a significant finding. It demonstrates that there is potential for the profile of Northumbrian copper-alloy coinage at a site to be used to indicate its relative dating. Furthermore, in combination with other material culture, whether the site relates to the activities of the Viking Great Army.

## Comparison of proportions of Northumbrian pennies at Viking winter camps

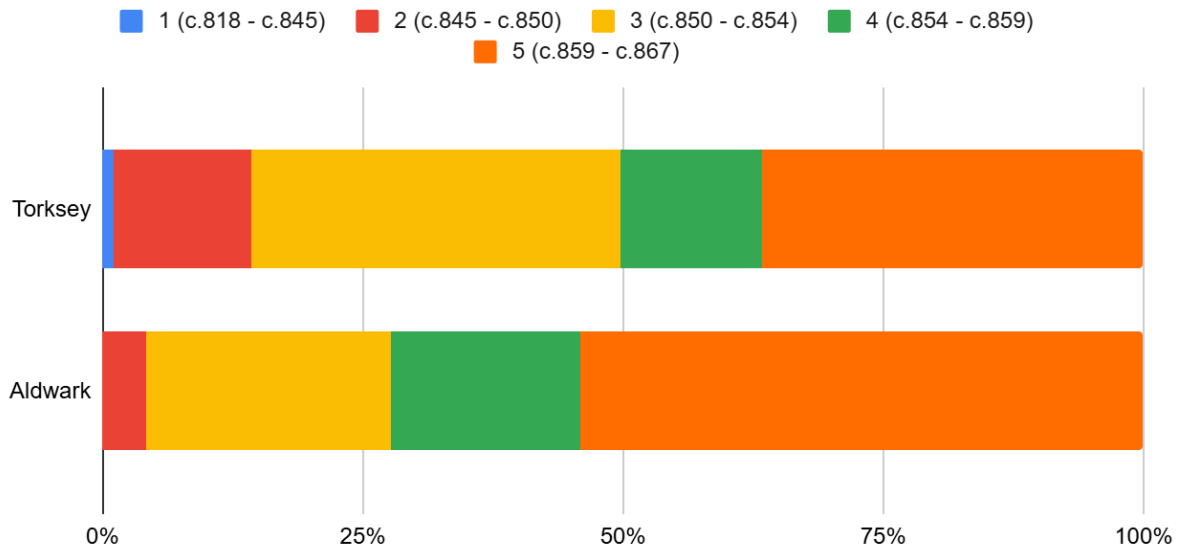


Figure 5.21: Chart comparing proportions of periodised Northumbrian pennies at Torksey (872-873) and Aldwark (874-875)

Analysis of both assemblages shows that derivative types make up the highest proportions of period 5 issues, and that small numbers of earlier Group A derivatives are also present (see figure 5.22). For Group D, issues from Di are low and those from Dii are much higher, however Dii is the larger series of die-linked groups. For Torksey, and possibly for Aldwark, the largest group of derivative types of those whose dies were not described in *Coins of the Kingdom of Northumbria*. These may either represent dies known in other collections outside Yorkshire (which were not published in CKN) or may represent dies new to the coinage. If the latter, and if faith is placed in the Aldwark catalogue, then we might be viewing an increase in derivative dies as the 870s progress. If this is indeed a trend, then it could also be posited then within the 870s, derivative production within the kingdom of Northumbria certainly continued.

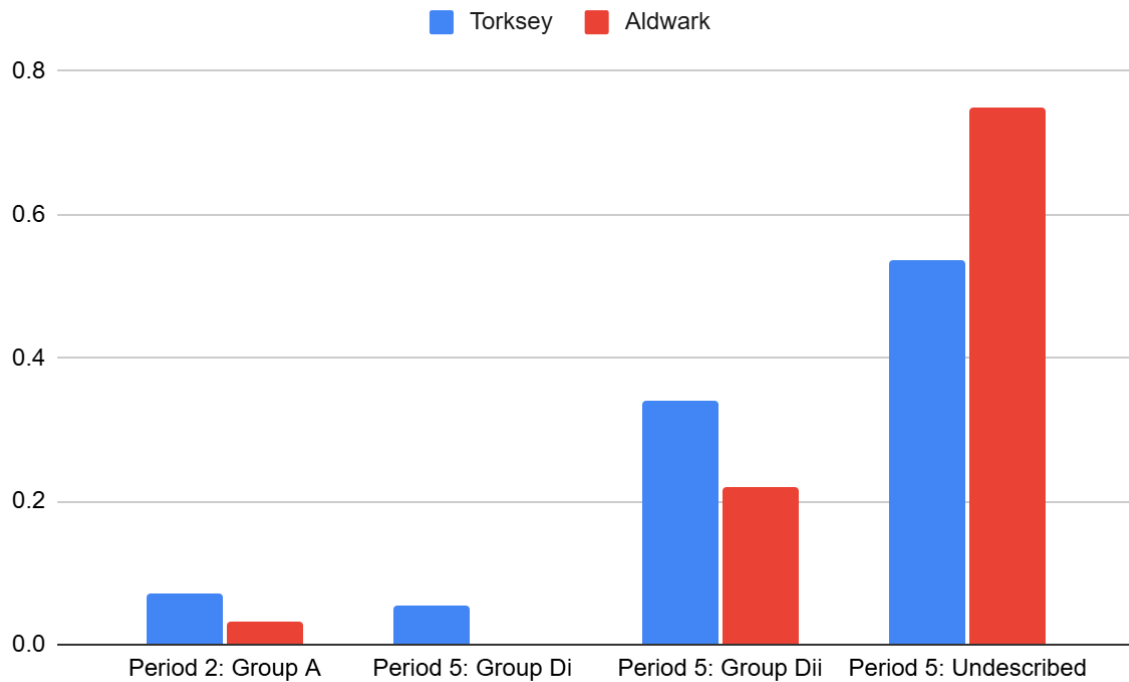


Figure 5.22: Graph representing proportions of groups of derivative issues at Aldwark

## 5.7. Conclusion

Key insights from this chapter are that both Torksey and Aldwark show that coins from period 5 are represented the most in their assemblages. If Aldwark does date to 874-875 or slightly later, which the higher proportion of period 5 issues indicates, this leads to the wider question of whether the profiles of Northumbrian coinage are like those in other assemblages. This is explored in chapters 7 and 8, using excavated and hoard data. Both are compared in light of the profiles of the Northumbrian coin assemblages from Aldwark and Torksey. Whilst derivative profiles between Torksey and Aldwark shows similarity, and the question of whether that reflects realities of production or is a Viking specific pattern will be also addressed. Data quality can also limit analysis, the lack of spatial data recorded at Aldwark means it is not possible to compare spatial distribution of Northumbrian coins there to Torksey. The lack of photographs in the Aldwark dataset also hinders closer identification of coin types. Chapter six carries forward questions of spatial analysis at both a national and a site-specific level, using metal detected finds. Spatial analysis at Torksey shows that coins of all periods were circulating concurrently at the site. There is no clustering of specific periods that might

indicate chronological change, and the same is true for derivative issues there. The data and results from this chapter directly address the concept of *belonging* outlined by Kemmers and Myrberg (2011). The use of Northumbrian coins at both sites can be read in multiple ways: as a pragmatic extension of Viking monetary practice; as an appropriation of currency and culture; as an early indicator for societal assimilation. Indeed, it is not an either/or situation, and multiple interpretations could have been true for different coin users at these sites.

The following chapters continue to test the periodisation of Northumbrian pennies, considering the assemblage profiles of Torksey and Aldwark. These focus on different methods of recovery: chapter 6 on metal detection, chapter 7 on excavation and chapter 8 on hoarded material.

## 6. Metal detected finds

### 6.1. Introduction

Metal detected finds play a significant role in expanding understanding of the distribution of Northumbrian pennies. As discussed in chapter 2, the reporting of metal detected finds, especially due to recreational activity, has increased the numbers of single finds of Northumbrian pennies. This chapter aggregates a national dataset of metal-detected Northumbrian pennies for the first time using three sources: the book *Thrymsas, Sceattas and Stycas* by Elizabeth Pirie, the Corpus of Early Medieval Coin Finds (EMC) and the Portable Antiquities Scheme (PAS) databases. In combination they demonstrate the importance of integrating material that pre-dates the establishment of the PAS, alongside data reported to the scheme (discussed in chapter 2). These sources complement one another and expand the recognised corpus of metal detected finds of Northumbrian coinage. This provides new insight into distribution patterns both within and without the boundaries of the former kingdom of Northumbria.

Analysis in §6.2 describes the data sources, then examines distributions of coin finds across Britain, using the periodisation outlined in §4.3.5. In §6.3 I also examine patterns of periodisation between the kingdoms of Northumbria, Mercia, East Anglia, Wessex and Kent. In §6.4 finds of Northumbrian pennies are recontextualised at a parish level, using the Viking Great Army finds signature as described in Hadley and Richards (2016). This ‘wide angle’ approach looks to identify if it is possible to discern a coin profile between parishes that may also contain finds that relate to Great Army activity and those that don’t. In §6.4.1 I examine parishes with ten or more finds, using the periodisation, and where possible to examine distributions at a local level. In section 6.5 I compare this analysis with the profile of the Northumbrian penny assemblage at Torksey and Aldwark.

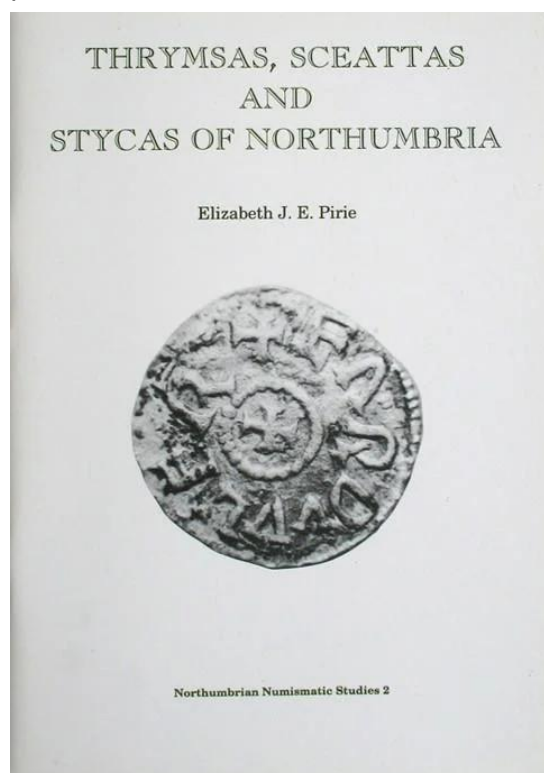
## 6.2. Data

There are three sources that are used to create the dataset for this thesis. This section outlines each source in turn and describes how the data is combined to enable analysis.

### 6.2.1. Thrymsas, Sceattas & Stycas (TSS)

#### 6.2.1.1. Description

As discussed in §3.5, much of the metal detected material draws on Pirie’s network of contacts within the detecting community, and in some instances is the only public record made of their discovery. The TSS inventory is divided into two sections: thrymsas and sceattas; ‘stycas’. Only the latter, the Northumbrian pennies, are relevant to this study. Each section is split into geographical regions. In some cases, the region is further subdivided (see figure 6.4). Each sub-division, or if there are none, each region, is further divided into two further categories: hoards, and “excavation finds, and strays without site-context” (Pirie 2000b, 36). Within the second category, further distinctions are made, with metal detected finds distinguished by the notation of “M-d.f.” and publication details listed, if available. Each occasion that a find, or assemblage of finds,



was discovered is numbered. TSS contains 298 entries, some of which include discoveries at the same site, but at distinct intervals. It also includes lists of finds where an imprecise location, for example only “north of England” is known, but has no further details (Pirie 2000b, 69). My impression from reviewing these vague descriptions of sites is that they are used when Pirie herself had little further information from the finders. Each numbered entry then lists the coins from that find, according to the typology set out in Coins of the Kingdom of Northumbria (Pirie 1996).

Figure 6.1 - Cover of *Thrymsas, Sceattas and Stycas of Northumbria* (Pirie 2000), courtesy of Galata Press.

Pirie area	Region	Sub-divisions
Area A	Humber - Tees	York – city and suburbs; South and West of the River Derwent; East Riding; North Yorkshire – east; North Yorkshire – central and north-west;
Area B	Tees - Forth	n/a
Area C	West and north	Mersey to Clyde; offshore islands
Area D	South of Humber-Mersey	Eastern sector; London and the south; Midland; West
Area E	Overseas	n/a

Figure 6.2: Reproduction of the geographic areas used for spatial analysis by Pirie (2000, 36)

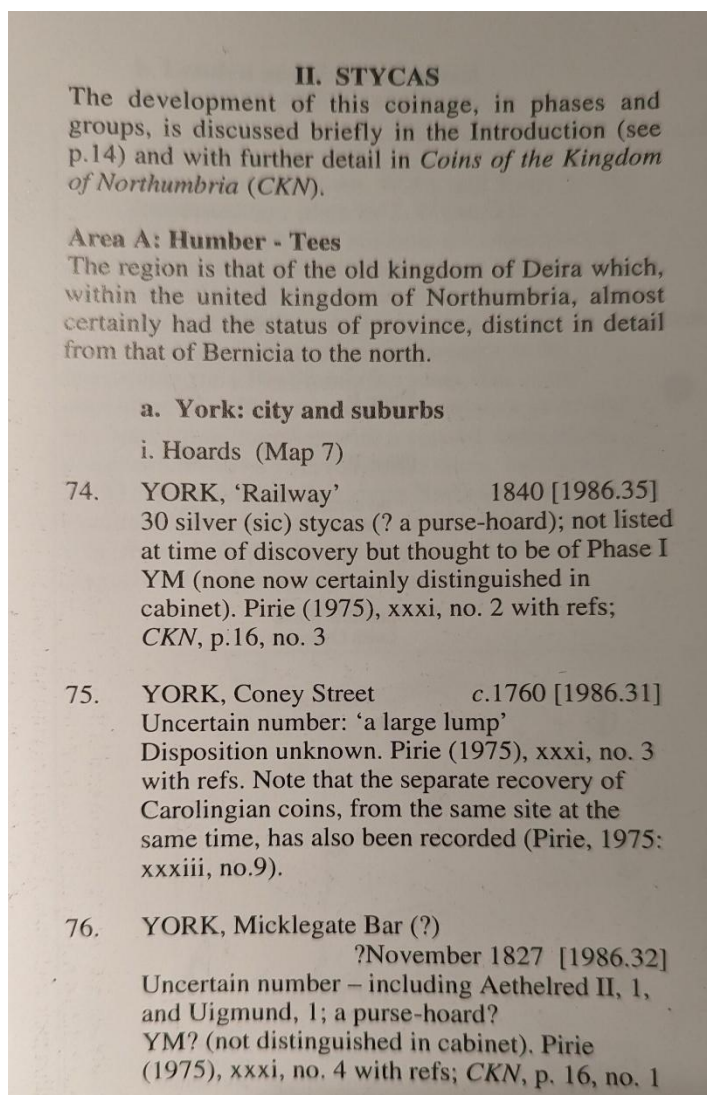


Figure 6.3: the first three listings of Northumbrian pennies from *Thrymsas*, *Sceattas* and *Stycas* of Northumbria (Pirie 2000, 52)

### 6.2.1.2. *Extraction and data quality*

To extract the metal detected finds from TSS, I methodically worked my way through the listings, using a spreadsheet to record relevant data from the listing. This included: inventory number, location, authority, moneyer, *Coins of the Kingdom of Northumbria* (CKN) reference (if published), derivative group (if ascertained), and any further comments. This work produced a list of 316 Northumbrian pennies that are metal-detected finds, from sixty-one inventory listings. Excluded from the list were finds from Torksey and Cottam B, which were discussed in chapter five, and integrated already into that subset of data. Pirie did not publish finds relating to Aldwark, although the finders of that site apparently said they had shared their styca finds with Pirie (Kelleher and Williams 2020, 36). The whereabouts of these records, if made, are unknown. The quality of this data, in terms of identification of coins, is high, since the inventory was compiled by Pirie herself, and most often, but not always, she had access to the coins in person. Only a small number of coins are illustrated with photographs, but images of some others can be found through cross-referencing against CKN. However, the location data is limited, since no grid references are given, and usually it is just the parish that is recorded (these limitations of this were discussed §4.2). The impact on spatial analysis is that the grid references used are for parishes, so are much less specific than the spatial data detectorists typically share with the PAS (see §6.2.3.2).

## 6.2.2. Corpus of Early Medieval Coin Finds (EMC)

### 6.2.2.1. *Description*

The Corpus of Early Medieval Coin Finds is an online database, hosted by the Fitzwilliam Museum in Cambridge (Anon 2025). As discussed in §6.1, it records single finds of medieval coins from metal detected and other contexts. It also provides a platform for data from the relevant Sylloges of Coins of the British Isles (SCBI), which are discussed in §3.6. The database is searchable through a basic and an advanced interface. The basic search function interrogates both the EMC database, and the parallel dataset of published material from the SCBI. Once a key-word search is entered, the user can then differentiate between the datasets, toggle between them or use a combined search (see figure 6.4). The advanced search option enables

researchers to create more detailed queries, based on variables such as ruler, kingdom, type, mint, moneyer, findspot, catalogue number or condition (see figure 6.5).

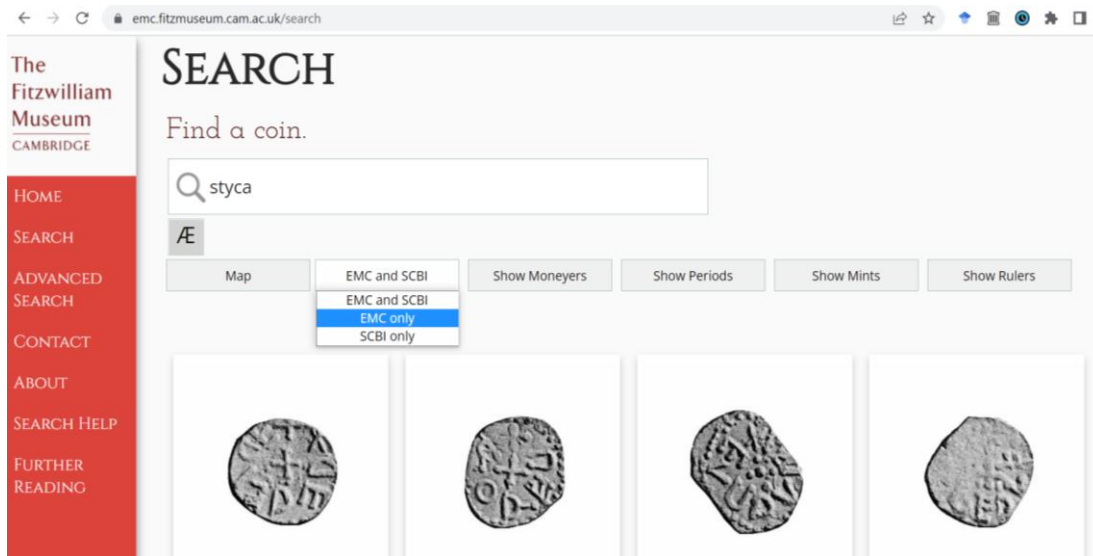


Figure 6.4 - Basic search function on EMC with thumbnail results ©Fitzwilliam Museum

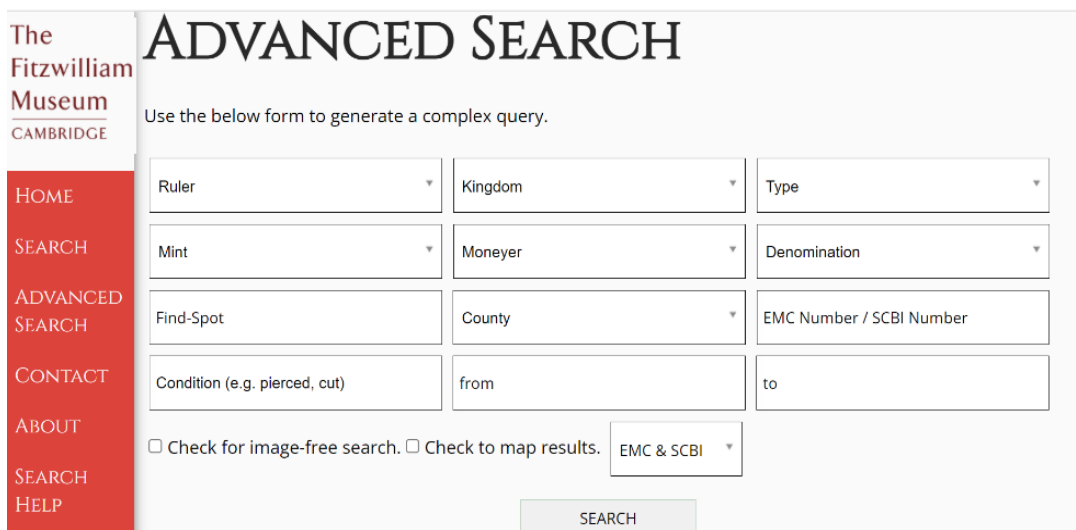


Figure 6.5 - Advanced search function on EMC, showing categories for querying ©Fitzwilliam Museum

### 6.2.2.2. Extraction and data quality

Staffing changes at the Fitzwilliam Museum in Cambridge have meant that there are increased challenges in accessing data from the EMC. Initial attempts to extract data for metal-detected finds returned only five finds. These were from Riby (1), Binbrook (1),

Stapleford (1) and Belton (2). Consultation with the museum made me aware that it was no longer possible for the team there to extract the data, either manually or automatically to a .csv file or similar (Allen pers. comm). After discussion with my supervisor, Andrew Woods, he found an archived set of data up to 2010, which I have been able to incorporate into this dataset. This has contributed a further 203 Northumbrian pennies. This means, however, that there is a serious gap in the EMC dataset, as I was unable to access any records from between 2011 and 2025. Whilst reporting to the EMC is ongoing, the numbers of those detectorists who do so are unpublished. It has also been suggested that, in part perhaps due to the prominence of the PAS, those who report to them are more likely to live and detect in the vicinity of Cambridge, rather than further north (Woods pers. comm).

For the data I was able to re-use or extract, I needed to ensure that the finds did not relate to Viking Great Army sites (discussed in chapter 5), excavated sites (considered in chapter 7) or hoarded material (described in chapter 9). The data also required cross-referencing with the PAS, as some detectorists report finds to both. It was also necessary to cross-reference the remaining EMC data with finds listed in TSS. The lack of bibliographic data on the EMC makes definite identifications with coins listed in TSS difficult but is possible if county is recorded and there is only one place with that name in it. Additionally, there are differences in the quality of the data recorded: not all entries have a photograph to support identification. Like the TSS data, EMC finds do not have grid references, but parish-level data. Additionally, some pennies can now be said to have been misidentified, based on work undertaken in the compilation of this dataset. For example, EMC 1999.0019 (figures 6.6 and 6.7) is attributed to Aethelred II, but has been reattributed by myself and Ron Bude as a coin of Aethelwold Moll and Archbishop Ecgberht, which was sold at auction in 2017 (Noonan's 2017). However, the ongoing staffing issues at the Fitzwilliam mean that this information, although reported to the institution, has not been updated in the online catalogue.

**The Fitzwilliam Museum**  
CAMBRIDGE

- HOME
- SEARCH
- ADVANCED SEARCH
- CONTACT
- ABOUT
- SEARCH HELP
- FURTHER READING

# FULL RECORD OF 1999.0019

EMC number : 1999.0019

State: Northumbria (600-867)

Ruler: Æthelred II

Type: Ælfwald and Æthelred I of Northumbria obverse mule, N 185/9

Mint: York

Mint name on coin:

Moneyer: uncertain

Moneyer name on coin:

Weight: 1.08g


Preservation:

Findspot: Beverley, near

Found: October 1998

Comment: No identifiable moneyer's name

Obverse



Reverse





Figure 6.6 - Screenshot of EMC 1999.0019 (EMC 1999)



PREVIOUS LOT      NEXT LOT

LOT  
**No 568**

13 DECEMBER 2017  
HAMMER PRICE:  
£13,000

SAVE TO CABINET

SAVE TO YOUR LISTS

**DESCRIPTION**

Kings of Northumbria and Archbishops of York, **Æthelwald Moll**, with Abp Egberht (759-65), Sceatta, EDILPALD around cross, ECGBERHT AR around cross, 1.07g/6h (EMC 1999.0019; N 193; S 853). *Very fine and extremely rare* £1,500-2,000

**SPECIAL COLLECTION**

This lot was sold as part of a special collection, British Coins from the Collection of Arthur M. Fitts III.

VIEW COLLECTION

**FOOTNOTE**

*Provenance:* Chris Rudd FPL 42, April 1999 (39); 'Beowulf' Collection, CNG Mailbid Sale 75, 23 May 2007 (1446)

Figure 6.7 – archived sale of EMC 1999.0019 (Noonan's 2017)

## 6.2.3. Portable Antiquities Scheme (PAS)

### 6.2.3.1. Description

The Portable Antiquities Scheme (PAS), like the Corpus of Early Medieval Coin Finds, is an online database which records finds made by metal detectorists who voluntarily submit them for recording. As discussed in §2.4 discoveries made by detectorists over the past twenty years have revolutionised understanding of the impact that single finds can have on archaeological research. The fact that the scheme's operation is based on detectorists volunteering to report their finds to Find Liaison Officers (FLOs) means that there are biases in where, how, and in what number finds are recorded. These are dependent on a variety of human and geographical factors. Since several different FLOs, and now detectorists, record finds for the PAS, this can lead to discrepancies and inaccuracies in the record, as well as variation in the level of detail published. All these variations are pertinent for the Northumbrian pennies on the PAS. Where entries have an image, there is also variation in resolution of images of finds, with records made earlier in the database's history often of lower resolution.

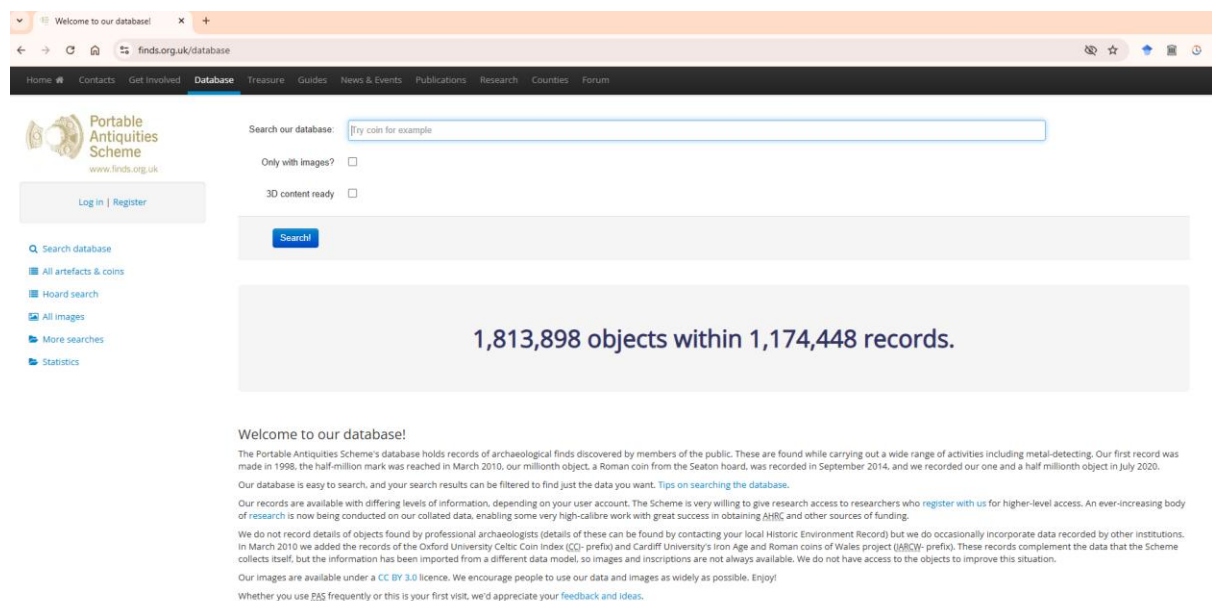


Figure 6.8 - Search function (PAS), 8 June 2025

### 6.2.3.2. Extraction and data quality

To aggregate a set of metal detected Northumbrian pennies from the PAS, it is necessary to filter the dataset to exclude coins misidentified as copper-alloy pennies, and those that are separately considered in other chapters, for example hoards (see chapter 8), and the sites of Torksey and Aldwark (see chapter 5), and Cottam B. Other challenges to working with PAS data included a lack of standardised terminology, since different FLOs use different sources for analysis. The majority use North (1991), whereas fewer refer to Pirie (1996). This may reflect the complexity of Pirie’s catalogue, or preferences of individual FLOs, and the two are not mutually exclusive. As of 2025, records produced by SWYOR FLO are the ones that refer most often to Pirie’s work, usually with reference to Pirie’s motif categorisation, for example SWYOR-20F083 refers to the latter; however, the base reference is still to North.

#### COIN

Unique ID: SWYOR-20F083

Object type certainty:

Certain

Workflow status: Awaiting validation

An Early Medieval copper alloy coin; a styca of Aethelred II (spelled Edilred on the coin), first or second reign (AD 840 - 844, and AD 844 - 848), group C, uncertain moneyer. Pirie motif 1 on the obverse and motif 5 on the reverse. Measurements are; diameter 13.1mm, thickness 1.3mm and weight 0.94g.



Rights Holder: West Yorkshire Archaeology Advisory Service

CC License:

Figure 6.9: Screenshot of PAS entry for SWYOR-20F083 with Pirie reference highlighted in blue (Scriven 2024)

The first step was to download a spreadsheet of all entries under a broad keyword search of “styca” from the Portable Antiquities Scheme. This generated a set of 797 records. The next step was to work through the list, removing into separate spreadsheets hoards and weights inlaid with Northumbrian pennies. The next stage

was to search for those that might have been misidentified, or where the record is unclear on the identification. I used a keyword search within the spreadsheet to look for “sceat” both in the denomination column and as a general search term. This led to the identification of 91 potential coins to be removed from the dataset. However, these coins needed to be checked in turn to ensure that they hadn’t been misinterpreted by FLOs. This led to four coins returning to the main dataset. Another check was to look for coins described as ‘silver’ and to check whether they should be excluded from the dataset. The combination of these checks led to the removal of 92 Northumbrian, eighth-century sceattas from the data downloaded from the PAS database.

The next step was to remove finds from Torksey and Aldwark that were considered separately in chapter 5. For Torksey this involved cross-referencing the PAS download with the Torksey dataset supplied by Julian Richards in January 2021. This extracted 115 coins from the PAS dataset. For Aldwark, two are recorded with the PAS, and both were removed from the dataset, based on information also kindly supplied by Julian Richards. After this process of elimination there were 539 recorded by the PAS relevant for the work of this chapter. In December 2024 I returned to the dataset, adding more recent finds, using the same methodology. All these coins have six figure grid-references, in contrast to the data from TSS and EMC, where locations are usually at a parish level.

#### 6.2.4. Data summary

By aggregating material relating to Northumbrian copper-alloy pennies from these three datasets for the first time, a more complete analysis of the distribution of single finds can be made. This combined dataset of 1113 Northumbrian pennies excludes those from excavated sites (see chapter 7), hoards (see chapter 8), and sites associated with Viking temporary settlement (see chapter 5). Finds reported to the EMC between 2011 and 2024 are a significant gap in coverage in the data and I hope that issues affecting the Fitzwilliam Museum may resolve in the future. However, since 2011 to 2024 corresponds with increases in reporting to PAS, there is some likelihood that EMC would not be the only location of these finds. However, this absence, and the particular

significance this may have for finds from eastern England is a bias in this dataset. The spatial data available varies between parish level and six figure grid references, these are combined here as the chapter examines broad regional trends. The number of coins from each source is summarised in figure 6.10 and demonstrates how through aggregation from a range of sources a dataset of 1133 Northumbrian copper-alloy pennies can be assembled. This is the largest assemblage of the Northumbrian copper-alloy coinage thus far to be analysed.

<b>Data source</b>	<b>Number of coins</b>
Thrymsas, Sceattas and Stycas (TSS)	316
Early Medieval Corpus of Coin Finds (EMC)	130
Portable Antiquities Scheme (PAS)	687
Total	1133

*Figure 6.10: summary of sources of Northumbrian coin data used in this chapter*

### 6.3. Spatial analysis

Building on the work of Pirie (1996, 2000), Naylor (2004) and Abramson (2018), this section analyses my combined dataset for metal-detected Northumbrian coinage from across Britain. It examines the overall distribution of Northumbrian pennies, then uses the periodisation outlined in chapter 4 to consider spatial patterns across chronologies of production, before examining regional differences using approximate borders of kingdoms in the ninth century. This is then followed by analysis and discussion of the relationships between periodisation and coin distribution. Spatial analysis of derivative issues is also considered.

Commonly held interpretations of the coinage relate that during the ninth century Northumbria enforced an economic exclusion zone, whereby only its issues could be used within the kingdom. There is also an assumption that this kind of exclusionary tactic would be reciprocal (Metcalfe, 1998) and this assumption is based on finds distributions rather than written evidence. From the late eighth century through the ninth, most coins are found within the kingdom where they were issued. This is a significant contrast to the ‘sceatta’ coinage produced in the early eighth century, where

this is not the case (Richards, Naylor and Holas-Clark 2009, 3.4.1). This change is assumed to have come about due to more active policing by royal issuing authorities, which is also shown in iconographic changes to the coinage, where royal imagery becomes more overt. Northumbria can be argued to have led the way in this (Naismith 2023, 313). As such, by combining periodisation with analysis of finds distributions, changing patterns in coin loss over time can be examined.

Previous studies have recognised that there is a concentration of coin finds in the south-east of the kingdom of Northumbria (Naylor 2007; Abramson 2018). Whilst this study confirms this, it also expands the areas where Northumbrian pennies have been found, showing a hotspot based on the likelihood of recovery both north and south of the Humber. This thesis also reveals a greater range of findspots (including both single finds and clusters) outside this area, than has previously been recognised. Pirie (1986a, 73) knew of some of these and dismissed “the old adage” that coins weren’t found outside the kingdom as a result. She suggested that some could be connected to minster sites (1986a, 69). To investigate this, geospatial techniques, including heat-mapping, kernel density analysis and optimised hotspot analysis are used to understand the significance of these distributions. Whilst heat mapping demonstrates finds concentration, kernel density estimation takes point data and creates “smoother and more interpretable results” (Baxter, Beardah and Wright 2017). For symbology I used Natural Breaks (Jenks) with ten classes.

To better understand the significance of the densities shown, optimised hotspot analysis (OHA) is used to examine the likelihood of finds from areas neighbouring each other being statistically significant; this is shown as hot and cold spots within hexagonal nets on maps. Optimised hotspot analysis is a tool within ArcGIS Pro, which calculates the Getis-Ord  $G_i^*$  statistic for features in a dataset (ArcGIS Pro 3.5 2025). These features have z-scores, where clustering of high or low values together may indicate statistical significance. For symbology, I used Natural Break (Jenks) for analysis, with 3 classes. A high value (hotspot) alone may not be significant, but when neighbouring other hotspots, it does. The technique is widely used for demographic studies and has been previously used in archaeology, for example prehistorians have used optimised hotspot analysis in studies on stone tool debris (de la Torre et al. 2019)

and lithic material distribution (Sánchez-Romero et al. 2022). Early medievalists have also used the technique to examine malaria epidemiology in Britain (Gowland and Western 2012). For coin data, clustered hotspots indicate statistically significant areas, which could be linked to circulation. The next section gives an overview of findspots.

### 6.3.1 Overview of metal-detected findspots

Due to differences in metal-detecting legislation and reporting between England and Scotland, as outlined in §2.4, finds are primarily reported from England. However, two metal detected sites from Scotland are recorded here: a group detected at Aberlady, East Lothian, and a single find from Elgin, Morayshire (Pirie 2000b, 72, 79). The latter is the most northerly metal detected find in the assemblage. The most southerly find is from St Anthony-in-Meneage, Cornwall, which is also the most westerly find (Fullbrook 2023). Other western finds are from Eytton in Herefordshire (Reavill 2009), Formby in Merseyside (Beeton 2022) and Eskdale in Cumbria (Prosser 2018). The finds from the furthest east include pennies from Lowestoft and Blythburgh in Suffolk (Pirie 2000b, 83; EMC 2009), and Sandwich in Kent (Pirie 2000b, 83).

Previous spatial analysis that has included Northumbrian pennies has either concentrated on specific sources of data, such as Portable Antiquities Scheme data (Naylor 2004) or has limited itself to the former kingdom of Northumbria (Abramson 2018). This analysis not only aggregates datasets but also looks at finds from across Britain (figure 6.11a-d), reviewed with four maps. These include: an overview of findspots of 1133 coins in the dataset; a heat map to show density of findspots; a kernel density analysis of coin finds; optimised hotspot analysis of statistically significant areas of coin loss. They show that whilst individual findspots may be widespread, they are most concentrated in Yorkshire and north Lincolnshire. Kernel density shows that there are significant clusters in Yorkshire in particular (these are further explored in §6.34). Finds from Yorkshire and north Lincolnshire are also shown as a statistically significant hotspot, whereas finds from the rest of Britain hold less statistical significance (see 6.11d).

To interpret the results of the optimised hotspot analysis, we can understand hotspots as showing areas where coin finds are statistically likely and significant. This then determines that coin finds from within the hotspot areas south of the Humber are just as likely to be found there as the previously recognised core area of Northumbrian coinage in Yorkshire. This immediately suggests that there was use of the coinage outside the assumed borders of Northumbria.

Such a result raises two further questions: does this area of significance present losses from each period of production, and to what extent do finds related to the activities of Great Army in north Lincolnshire affect these distribution patterns. Section 6.3.2. looks at periodised distribution patterns to answer the former, while the latter is addressed in §6.4 where Northumbrian pennies are recontextualised alongside other archaeological and historical evidence from the parishes they are found in, to discern further traces of the Viking Great Army.

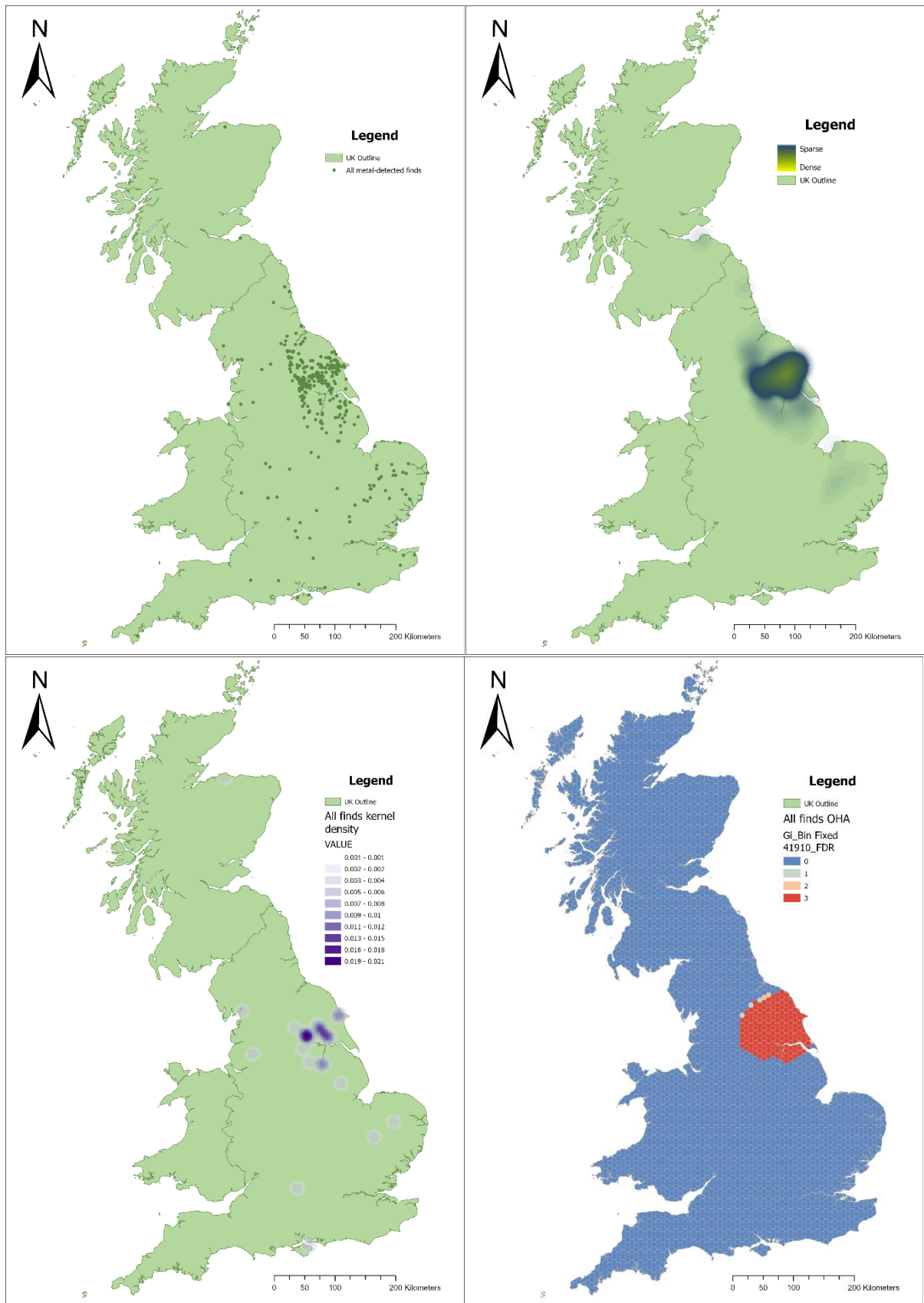


Figure 6.11, a, b, c, d: metal detected finds; heatmap of finds concentrations, kernel density map showing clusters; optimised hotspot analysis showing statistically significant distributions.

### 6.3.2. Periodisation and spatial analysis

Periodisation, as outlined in chapter 4, is used to understand changes in production across the coinage. In this section, it is combined with spatial analysis to question whether there are changes in distribution of coin losses according to period. This section begins with an overview of findspots associated with periodised finds, then uses kernel density estimation and optimised hotspot analysis in turn to assess whether changes in production influences spatial distribution.

Before analysing the distributions of Northumbrian pennies on a period-by-period basis, the section provides an overview of periodised and unperiodised findspots (see figures 6.12 and 6.13). This helps to contextualise the differences in distribution between periods. I include both diagrams here to emphasise that in addition to the 998 periodised coins, there are 135 that are Northumbrian pennies that cannot be attributed to chronologies of production. They are also widespread, from the north-east to the south-west, but similarly concentrated in Yorkshire and north Lincolnshire.



Figure 6.12: Findspots of periodised Northumbrian pennies

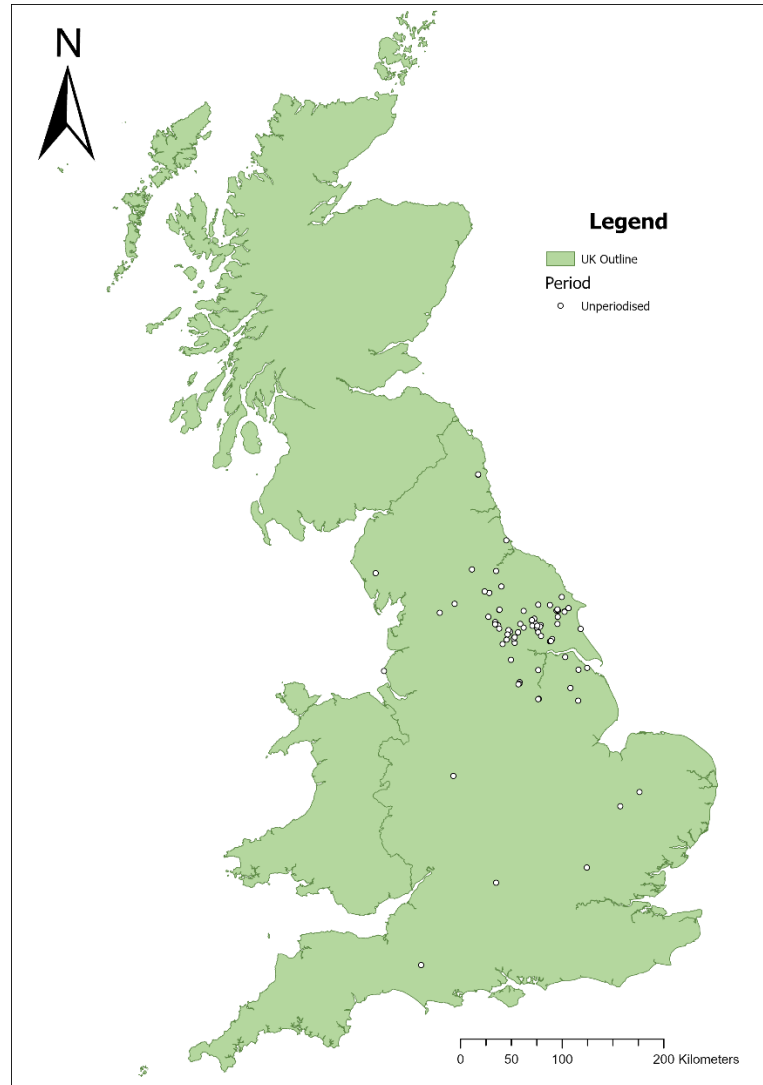


Figure 6.13: Findspots of unperiodised Northumbrian pennies

### 6.3.2.1. Inter-period change

Numbers of coin finds for each period are shown in figure 6.14. The period with the highest proportion of finds is period 3, followed by 5, then period 2, period 4, with period 1 with the lowest number of finds. The proportion of these 998 finds in relation to each other is shown in figure 6.15.

	<b>Period 1</b> <b>c.818 –</b> <b>c.845</b>	<b>Period 2</b> <b>c.845 –</b> <b>c.850</b>	<b>Period 3</b> <b>c.850 –</b> <b>c.854</b>	<b>Period 4</b> <b>c.854 –</b> <b>c.858</b>	<b>Period 5</b> <b>c.858 –</b> <b>c.866</b>
Number of coins	53	219	349	123	254
% of coins	5%	22%	35%	12%	25%

Figure 6.14: Numbers of periodised metal-detected coins

### Percentage of periodised single finds of Northumbrian pennies in Britain

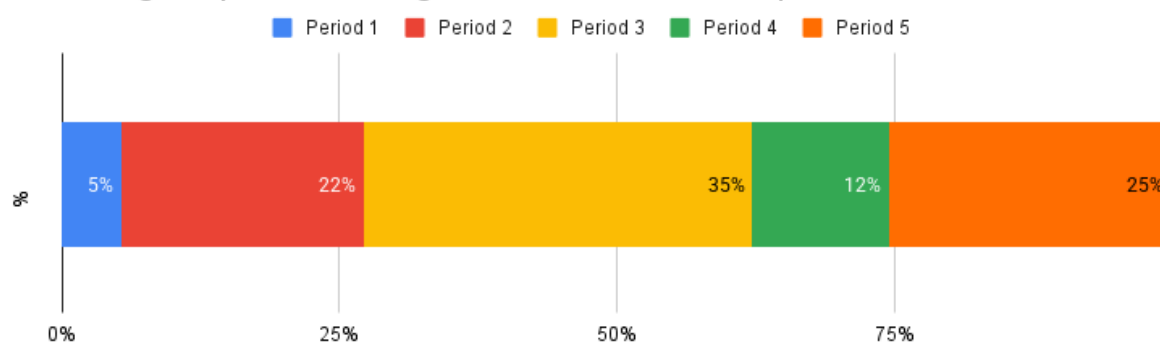


Figure 6.15: Proportions of periodised coins recovered through metal detection

Whilst there are some differences between the distribution of single finds that were produced in different periods, there are broad trends that are common across them. Firstly, there are always concentrations of finds from Yorkshire, which is shown in both kernel density and hotspot analysis. This is seen across figures 6.16 to 6.20 which show changes between periods 1 and 5. There is also always a hotspot area around north Lincolnshire, although extents vary. This indicates that coins found in those areas are as statistically likely to be found there as those in the Yorkshire part of the hotspot. Finds outside the Yorkshire/north Lincolnshire region, highlighted in blue, are not seen as statistically significant in relation to neighbouring finds. This does not mean that individual finds from these areas are not important to understanding the coinage, but that they require further contextualisation (see §6.4 below).

When examining distributions based on period of production, it is important to remember that we know from Torksey that period 1 pennies minted c.818 – c.845 are part of the assemblage, which were perhaps in circulation for 30-50 years (Hadley and Richards 2016). These periods reflect when coins were produced, so the spatial analysis shows the extent to which they travelled subsequently to production. For the 53 finds from period 1 issued by Eanred and Archbishop Eanbald II, findspots focus on Yorkshire and north Lincolnshire, but with outliers at Aberlady in Scotland and London.

Period 2 is marked by the shift from base silver to copper-alloy under Eanred and marks an expansion in production. This is shown in figure 6.17 by a wider distribution of coin losses. Period 3 is the largest period of production is characterised by issues by Aethelred II, Redwulf and Archbishop Wigmund. Coins from this phase of production are lost across an even wider area, expanding particularly with westward and eastward finds (figure 6.18). Coins that were produced in period 4 have been found in lower numbers and across fewer locations, but losses are still spread more widely than those of period 1 (see figure 6.19). Coins that were produced in period 5 spent the least amount of time in circulation before loss, so the fact that findspots are widely distributed is significant and shows that these coins were being moved at a relatively high velocity, further west and south than previously appreciated (figure 6.20).

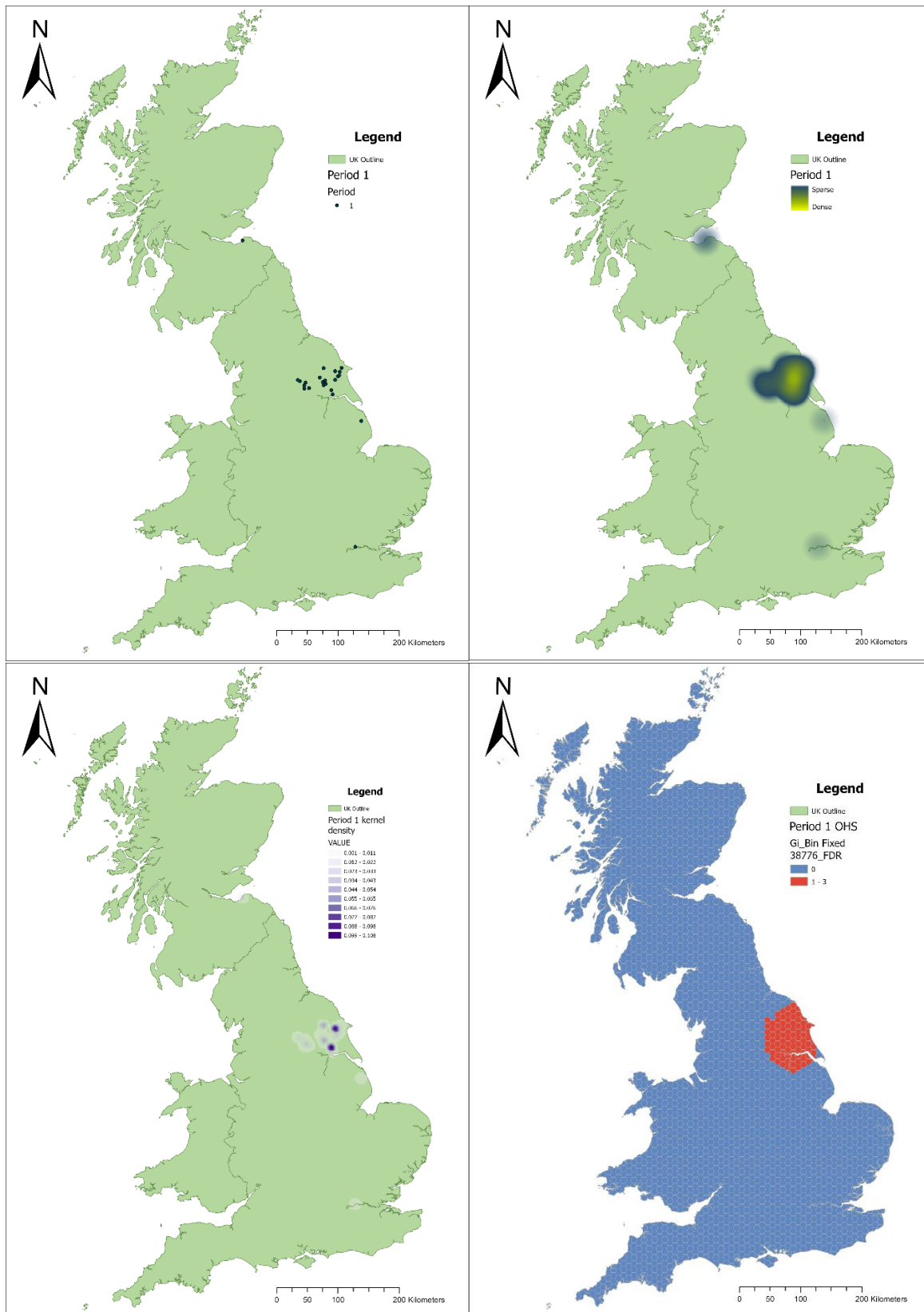


Figure 6.16 a, b, c, d, – Period 1 - coin finds, represented through a) findspots b) heat map c) kernel density and d) optimised hotspot analysis

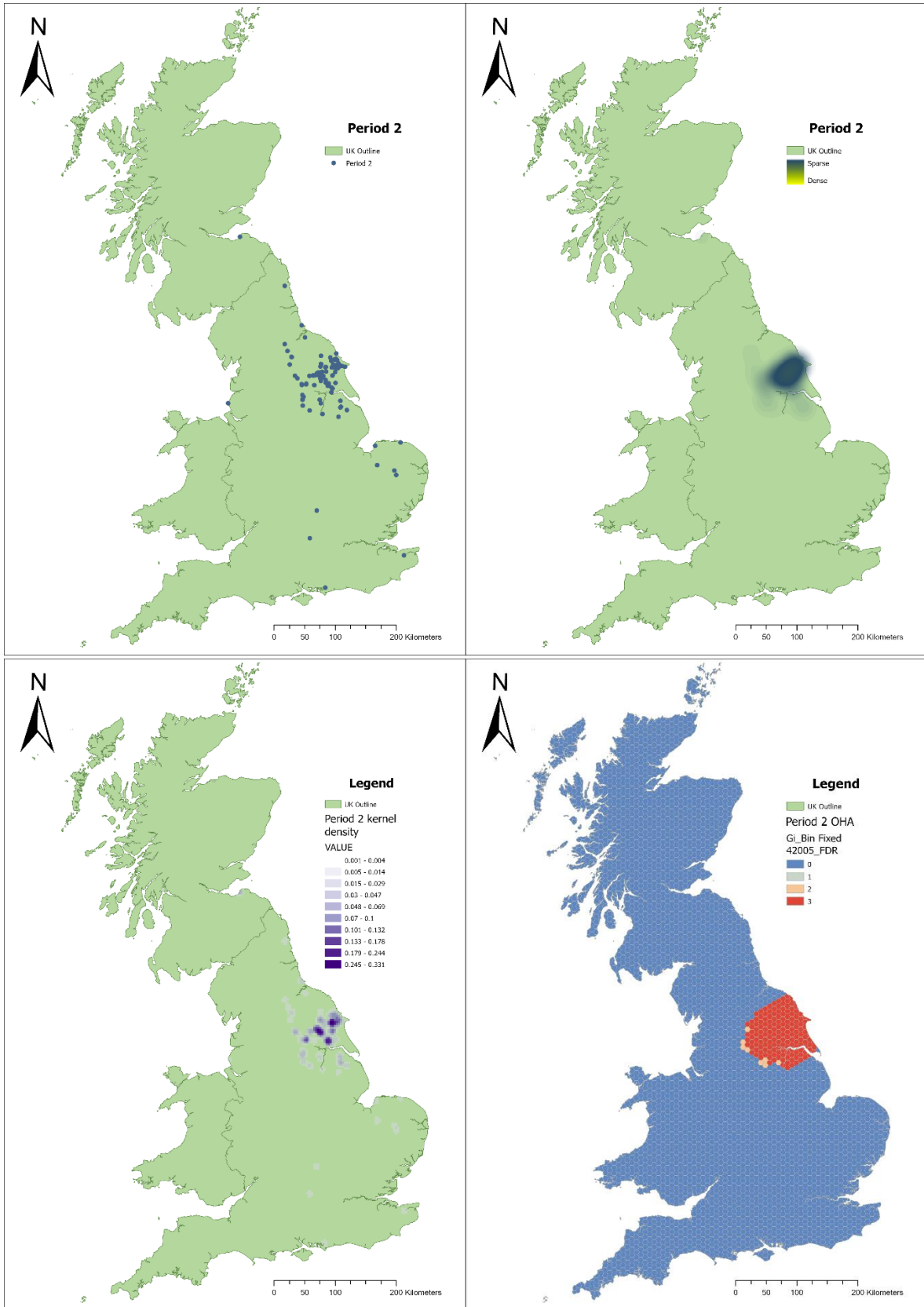


Figure 6.17 a, b, c, d – Period 2 coin finds – represented through a) findspots b) heat map c) kernel density and d) optimised hotspot analysis

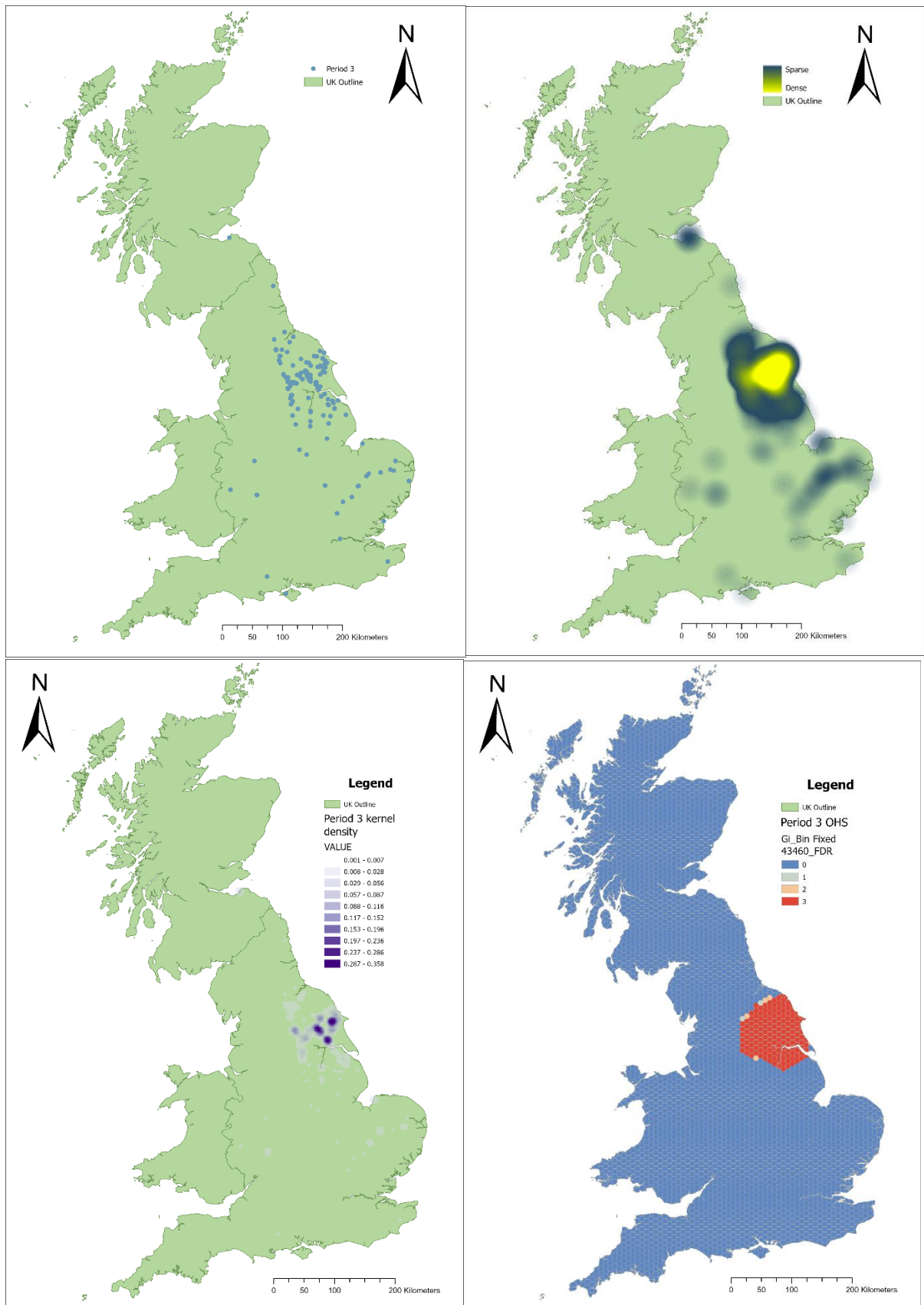


Figure 6.18 a, b, c, d – Period 3 – coin finds, represented through a) findspots b) heat map c) kernel density and d) optimised hotspot analysis

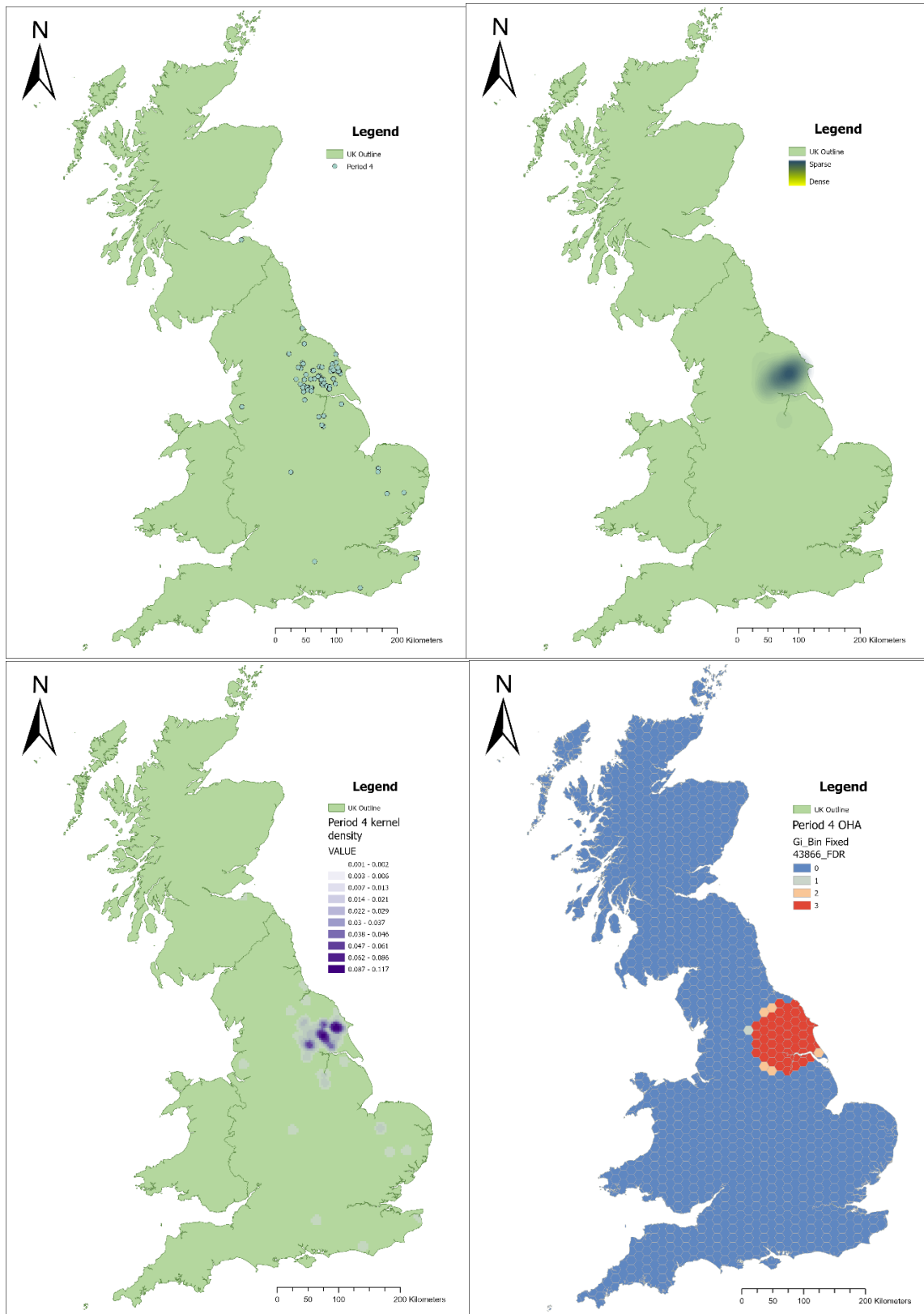


Figure 6.19 a, b, c, d – Period 4 – coin finds, represented by a) findspots b) heat map c) kernel density and d) optimised hotspot analysis

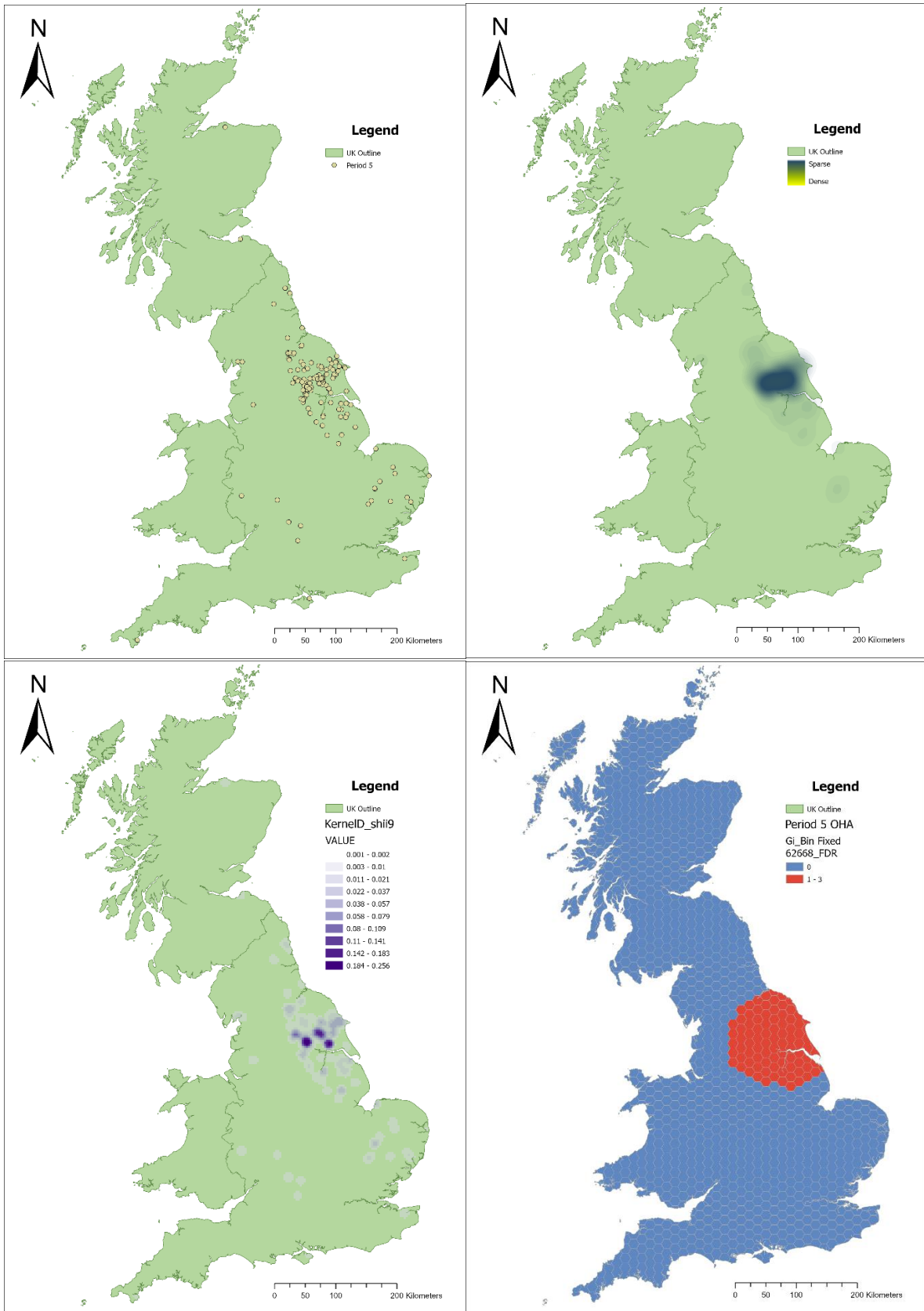


Figure 6.20 a, b, c, d – Period 5 finds, represented by a) findspots b) heat map c) kernel density and d) optimised hotspot analysis

### 6.3.3. Derivative analysis

The role and function of derivative issues in the economic networks of Northumbria are the least well understood aspects of the coinage (see §4.3.6). Pirie was able to discern potential groupings of derivative dies, as outlined in §3.5, but undertook no further analysis. The dataset presented here is the first time the issues have been considered from a spatial perspective; numbers of finds are shown in figure 6.21. Pirie grouped them into three broad categories: A, Di and Dii, which are examined in figure 6.22. Spatial analysis of all metal detected derivative issues shows (figure 6.23) that they have a broad distribution, with concentrations in Yorkshire, Nottinghamshire and Lincolnshire. The northernmost find is from Aberlady, the southernmost from the Isle of Wight, the easternmost from Rocklands in Norfolk and the westernmost from Beetham in Cumbria. Figures 6.23 to 6.25 examine distributions of each of Pirie’s groups in turn.

	Group A	Group Di	Group Dii	Total
Number of coins	14	33	75	122

Figure 6.21: Numbers of derivative issues recovered through metal-detection

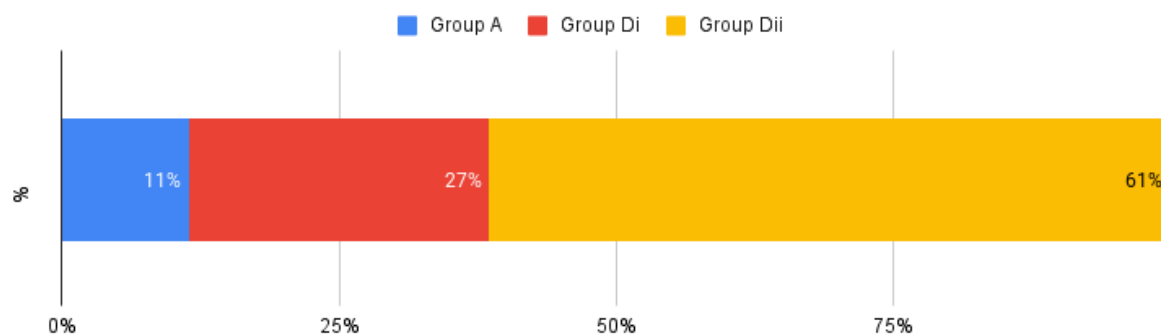


Figure 6.22: Proportions of derivative issues recovered by metal detection

Group A, shown in figure 6.21, derives from issues minted for Eanred c.845-c.850, has a distribution which is focussed on Yorkshire and north Lincolnshire. Its directional distribution indicates that it also has an easterly bias. The 14 Group A coins form part of my periodisation for period 2, and its distribution is similar. Groups Di and Dii form part of period 5, c.859 – c.866. Figures 6.42 and 6.43 show differences between the

distributions of loess, although there is overlap. Derivative issues of Group Di concentrate in Yorkshire, but have the widest distribution, and are also found in Cumbria, Lincolnshire, Cambridgeshire and the Isle of Wight. Derivative issues of Dii are all concentrated from north Lincolnshire into Yorkshire, apart from one find from Milton-under-Wychwood in Oxfordshire. The directional distributions show that whilst Group Di has a broader area where finds have been located, group Dii has a narrower area, more closely associated with higher densities of finds. Pirie demonstrated that Group Dii was one long extensive die-chain, whereas Di comprises shorter unconnected chains that are unrelated to Group Dii. The spatial analysis then shows that the Dii losses are concentrated within one region, where Di coins which are not so closely die-linked have a wider distribution. For Dii, this may perhaps indicate that these are some of the later derivative issues to be minted, since their distribution is relatively more condensed.

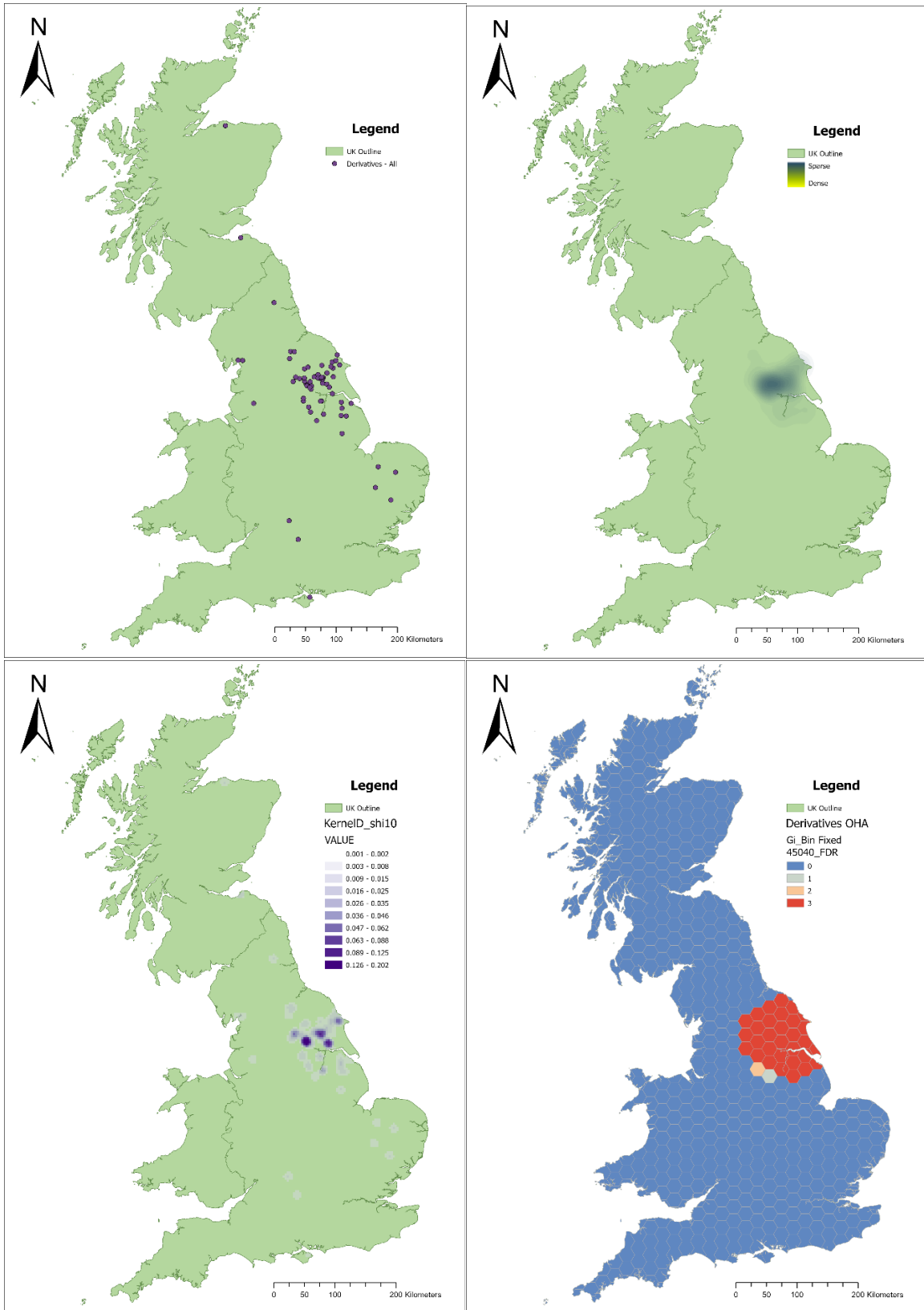


Figure 6.23 a, b, c, d – total metal detected derivative issues in Britain, groups A, Di and Dii.

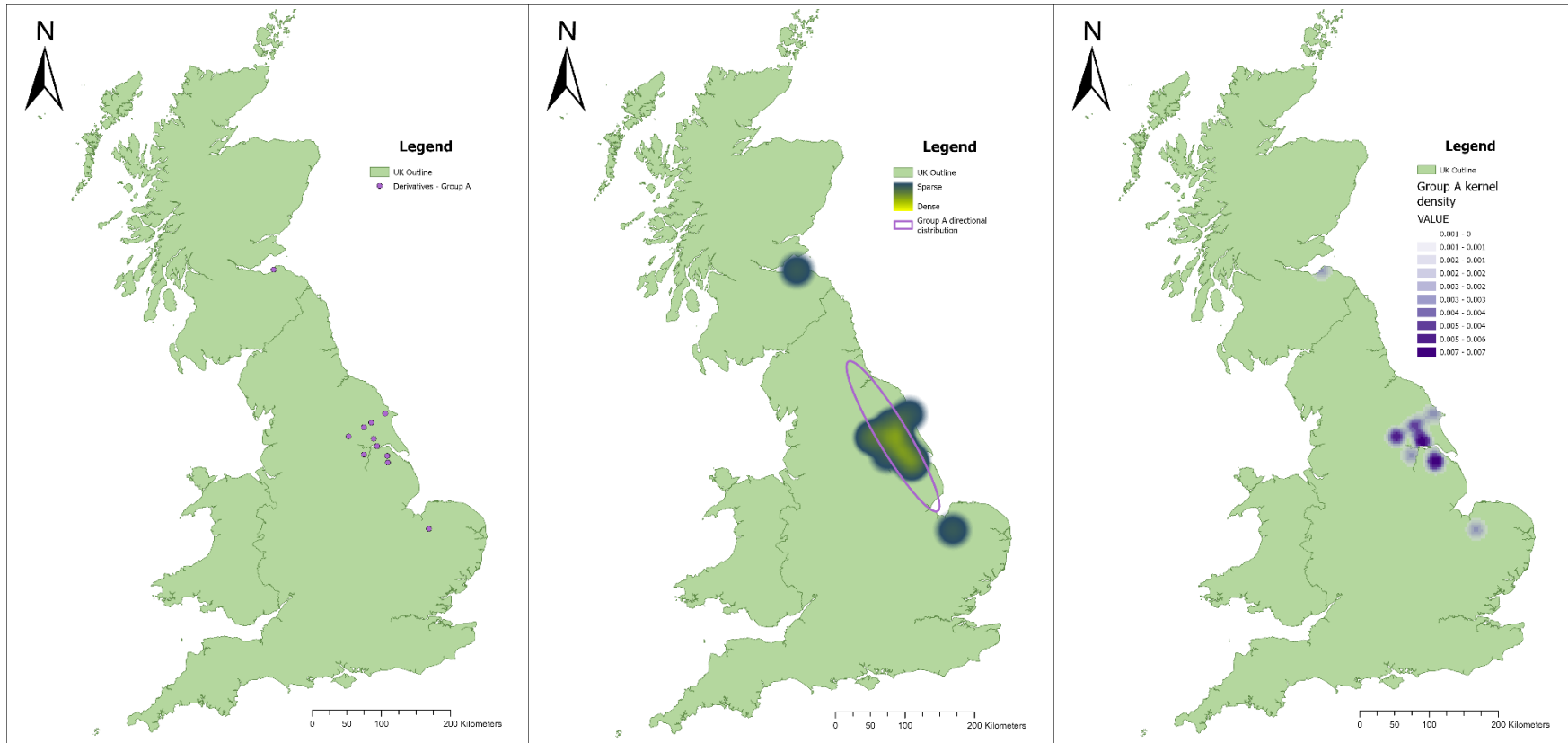


Figure 6.24 a , b , c – Group A derivative issues- heat map and kernel density (not enough data for optimised hotspot analysis)

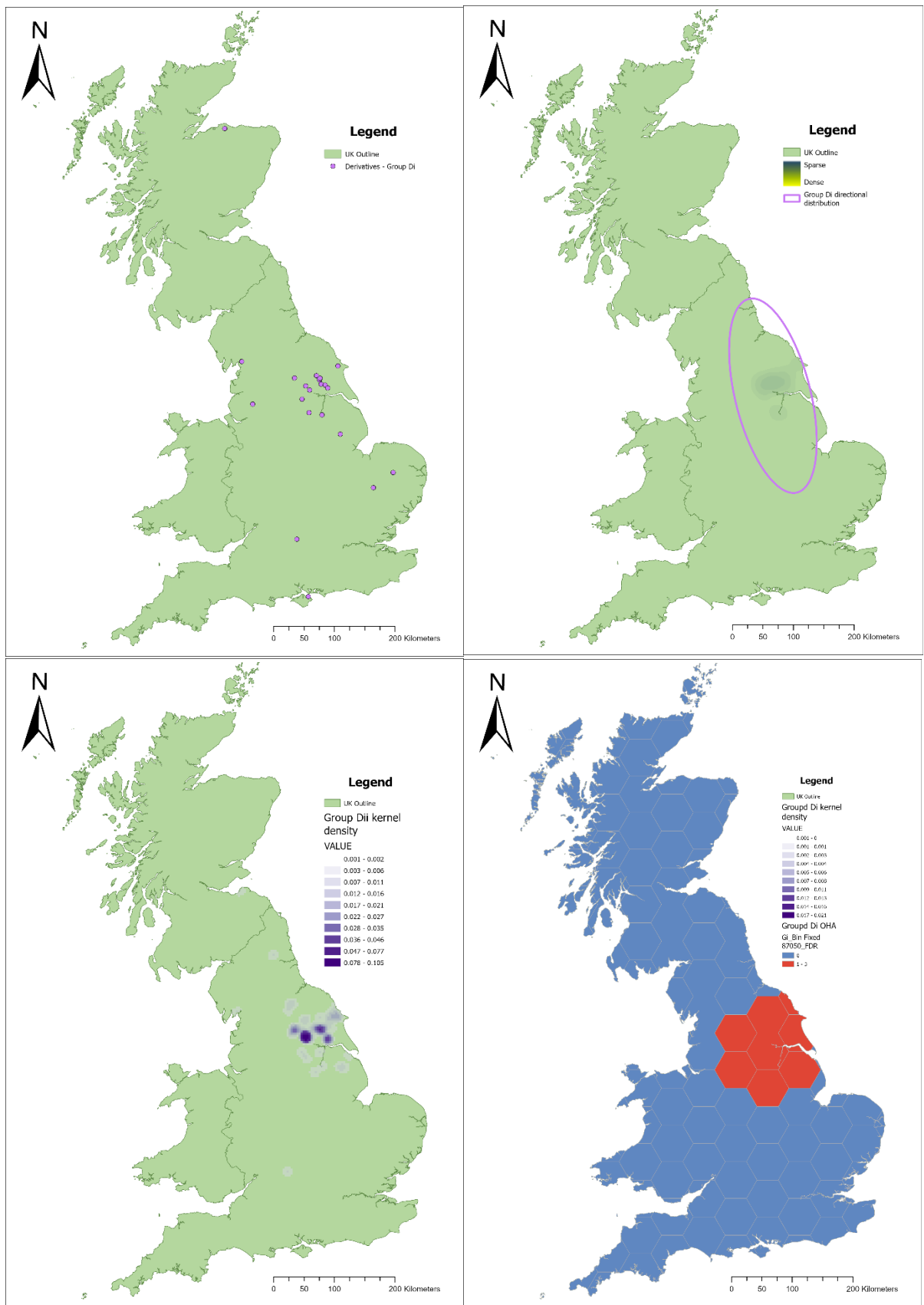


Figure 6.25 a, b, c, d – Group Di derivative issues - heat map, kernel density and optimised hotspot analysis

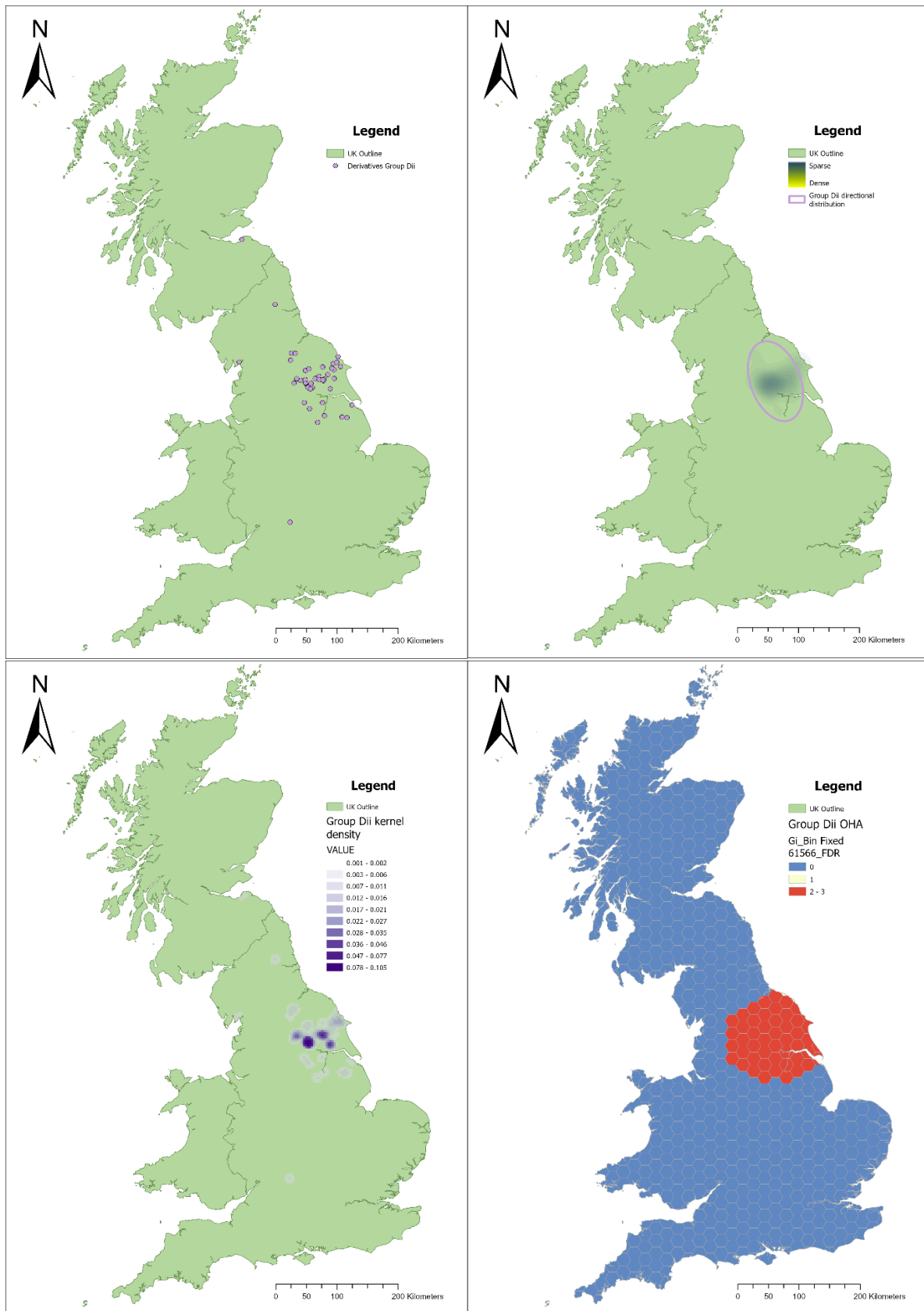


Figure 6.26 a, b, c, d – Group Dii derivative issues – heat map, kernel density and optimised hotspot analysis

### 6.3.4. Regional analysis

This section examines the density of finds on a regional basis within approximate borders of early medieval kingdoms of Northumbria, Wessex, Mercia, East Anglia and Kent. To approximate the borders of early medieval kingdoms, an underlying structure based on modern county boundaries was used to create the outlines. These are based on the discussions of borders in a variety of sources (Brown 2001; Rollason 2003; Leahy 2007). These lines (see figure 6.27) were necessary since ArcGIS Pro requires specific boundaries for calculation. It is important to recognise that for those living in the ninth century, these boundaries were likely much more fluid than the statistical analyses

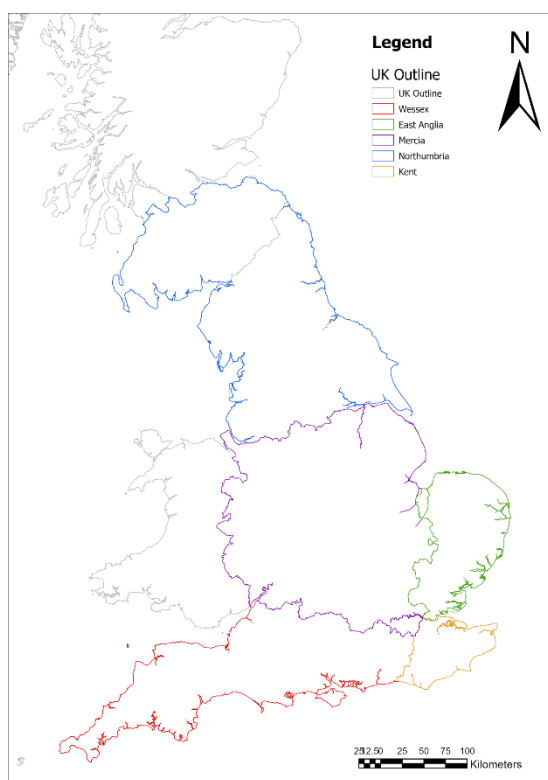


Figure 6.27 – estimated borders of early medieval kingdoms c.850

shown on the following maps. It is also important to note that by analysing finds from each of the kingdoms, the calculations drawn are made on that sample size. This means that areas with far fewer issues may appear just as heavily concentrated as those with many more. This is especially true for Wessex and Kent where a handful of finds looks much more significant in concentration than the much larger Northumbrian assemblage. Within the context of these kingdoms however, they are high in concentration.

A comparison of periodised coins from each region is listed in figures 6.28. Kent has the smallest assemblage with five metal-detected and periodised finds from the area, and Northumbria the largest with 787. The proportions of periodised coins for Northumbria, Mercia and East Anglia are compared in figure 6.29; finds from Wessex and Kent are too low for meaningful comparison. Finds of period 1 are concentrated in Northumbria, with only two metal-detected finds from outside the region in Aberlady and London. Secondly, there is the relative stability in the proportions of finds from period 3 across

all three regions. Thirdly, there is a relative increase for finds from period 5, which includes derivative issues, in both Mercia and East Anglia.

	Period 1	Period 2	Period 3	Period 4	Period 5	Total/kingdom
Northumbria	52	193	293	110	202	850
Mercia	1	19	39	6	35	100
East Anglia	-	5	14	4	14	37
Wessex	-	1	2	1	2	6
Kent	-	1	1	2	1	5
Totals/period	53	219	349	123	254	Overall: 998

Figure 6.28 – Numbers of coins periodised according to kingdom

### Percentage of periodised coins by kingdom

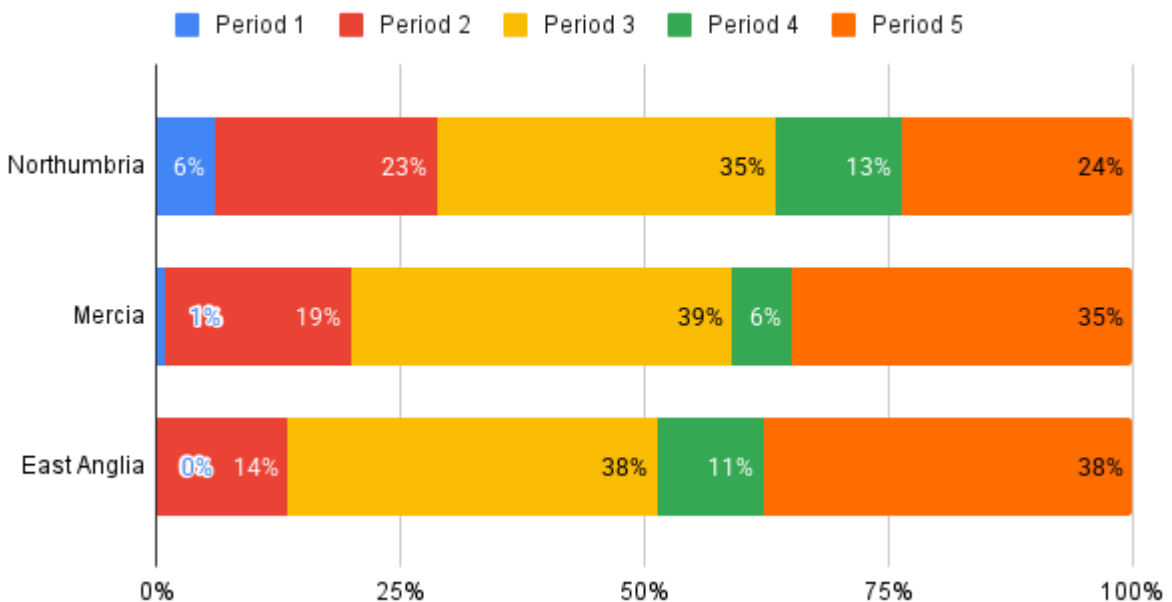


Figure 6.29 – Proportions of periodised finds by kingdom

In terms of spatial distribution of Northumbrian pennies within kingdoms, figures 6.30 and 6.31 illustrate the kernel densities and hotspots of data from within kingdoms. Whilst §6.3.2 examined these for all finds, this section reviews distribution on a kingdom-by-kingdom basis. For Northumbria, both analyses emphasise concentration and significance of finds in the south-east of the kingdom (see figure 6.30). Notable sites in the region include Ryther, Cottam A and B, Malton and York, which have previously been highlighted as high-density areas. Clusters are also at Aberlady in Scotland, which features as a concentration on the heat map due to the cluster of eleven coins from the ecclesiastical site there (Pirie 2000, 72). To the west there are finds from several locations in Cumbria, as well as Formby in Merseyside. There are two finds from the Yorkshire Dales and further ones formally recorded from north of the Tees.

Finds from Mercia are concentrated in the north-east of the region, in present-day north Lincolnshire and south Yorkshire, continuing to compliment earlier analysis. There is a notable cluster of finds focussed on the River Trent: this is particularly significant since the metal-detected finds from Torksey have been removed from this dataset, as they were considered separately in chapter 5. There is also a concentration of finds between Caistor and the mouth of the Humber, as well as a cluster focussed to the west and south of Doncaster. Beyond these clusters, other locations are spread widely, including a western find at Eyton in Herefordshire, along with several finds to the south in the upper Thames Valley and finds to the east of Cambridge (figure 6.30).

The highest concentrations of finds in East Anglia (figure 6.30) are from areas in the west, with a specific group at Heacham, providing the highest concentration of finds. Further concentrations are found around Newmarket, to the east and west of Thetford, and to the east of Downham Market. However, it is these latter finds from the west of the region that are statistically significant, rather than the Heacham group (which has alternatively been suggested to be a hoard). Finds also extend to the east coast, with locations including Lowestoft and Blythburgh. There are also several findspots in present-day Suffolk, although there are no metal detected finds of Northumbrian pennies from Essex.

Both Kent and Wessex have very small assemblages; optimised hotspot analysis requires 30 data points to run, so was not possible for these regions. Five finds from Kent (figure 6.35) include one penny of Eanred, two pennies of Aethelred II, one penny of Wigmund and one of Osberht. Heat mapping shows where the finds are located. There are no derivative issues found in Kent. Canterbury appears as the location with the highest density of finds, with two reported from the area. Six Northumbrian pennies are recorded from Wessex (figure 6.36). They include one of Eanred, one of Redwulf, three of Aethelred II and one derivative. Heat mapping for Wessex shows concentrations within the region. The concentration of finds is from the Isle of Wight, with two findspots at Shalfleet and Ryde. The westernmost find is from Damerham. Central London features due to a find that was detected from the Thames foreshore at Lambeth.

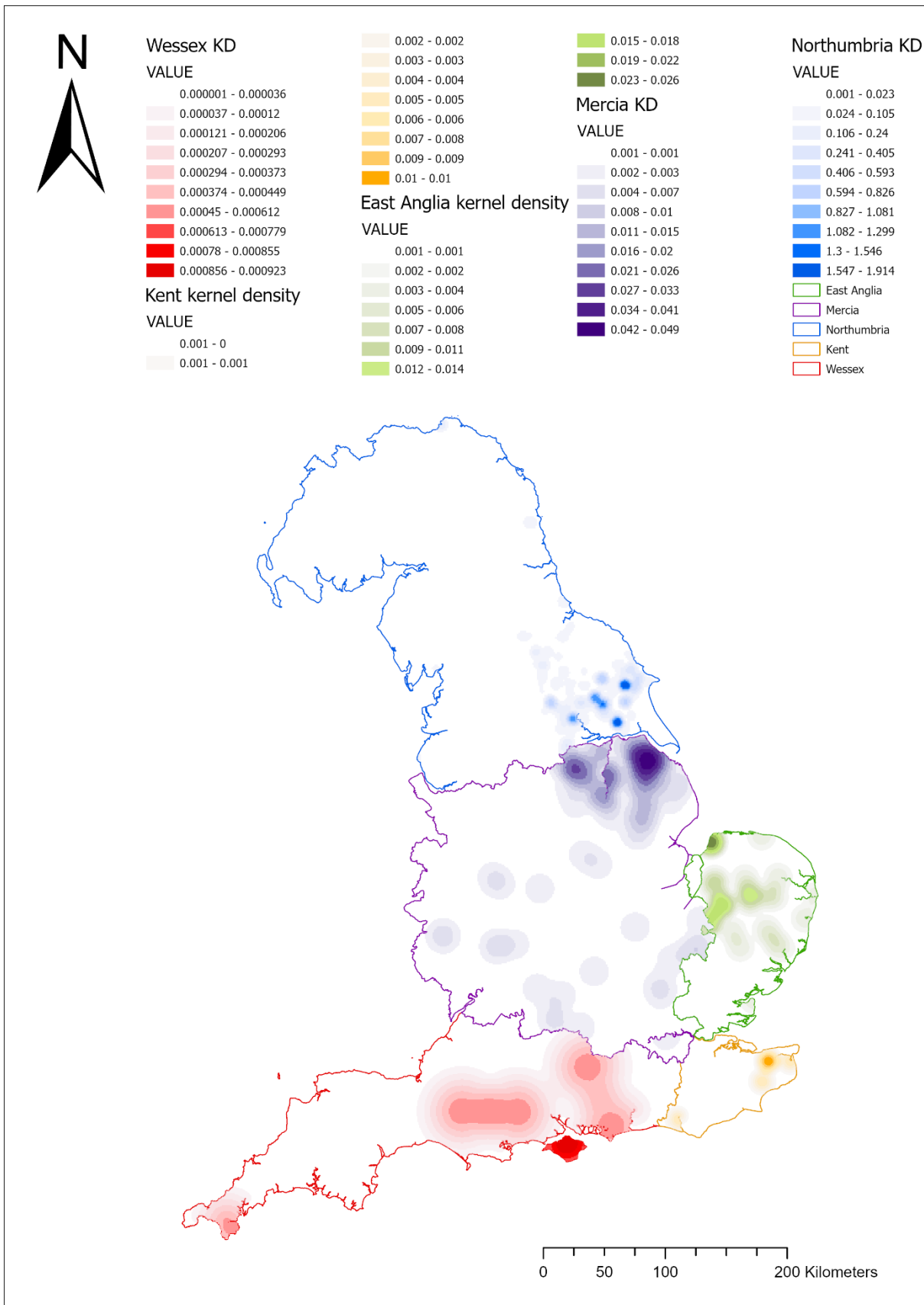


Figure 6.30: Map comparing spatial distribution of Northumbrian pennies within kingdoms. As mentioned above each kingdom has vastly differing sample sizes – the map is used to illustrate where finds are concentrated but to suggest areas between kingdoms are as concentrated as each other.

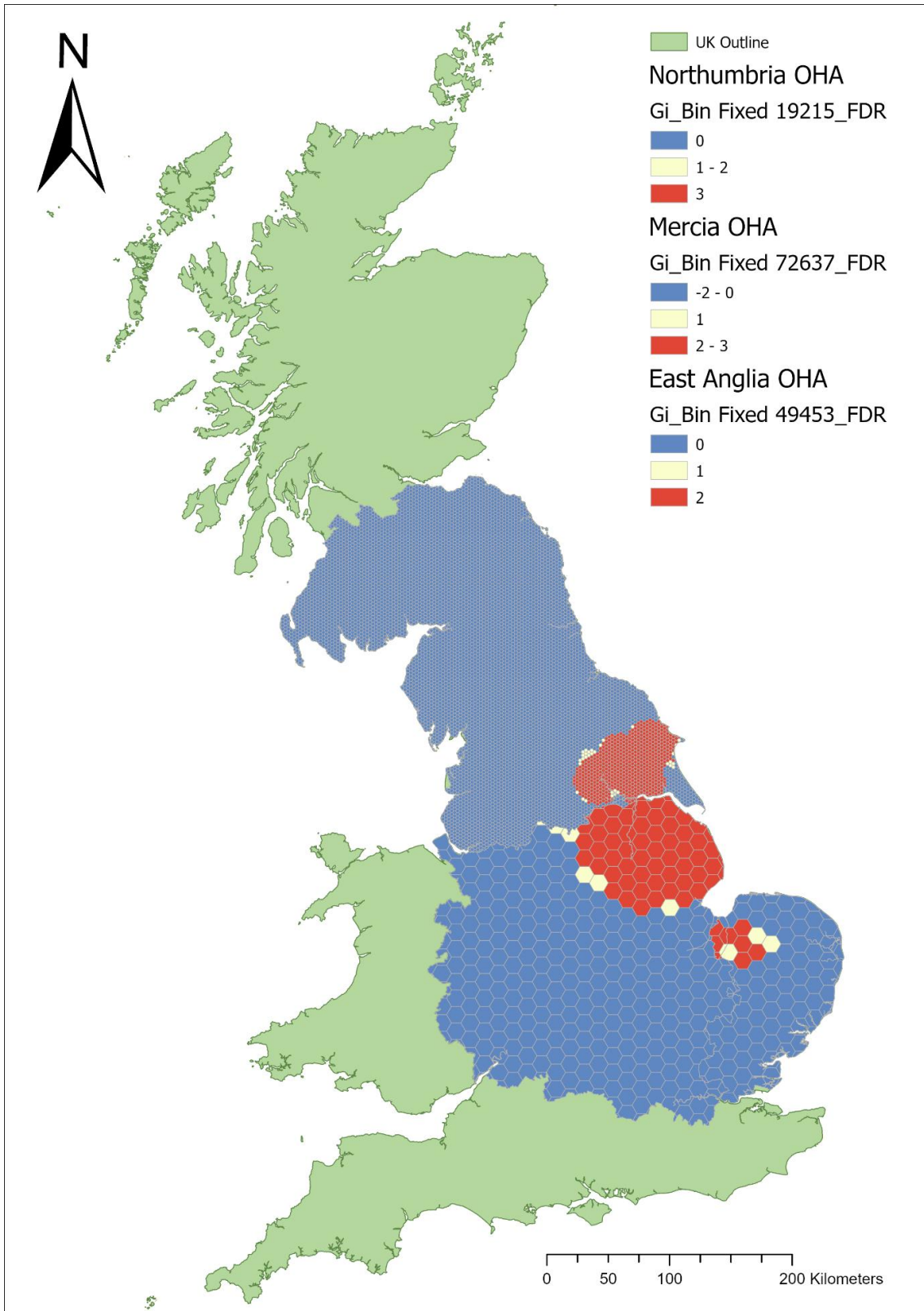


Figure 6.31: This map places the result of each kingdom's optimised hotspot analysis on the same map, to show where hotspots are when measure within the approximate boundaries of a kingdom.

### 6.3.5. Summary of spatial analysis

Spatial statistical techniques have been used in §6.3 to examine coin distributions. This has shown that for southeast Northumbria and northeast Mercia, finds of Northumbrian pennies are equally statistically significant. This has been tested using a national dataset, as well as regionalised ones. We can use this analysis to suggest that the area identified by optimised hotspot analysis may reflect what can be interpreted as ‘usual’ distribution of the coinage. This implies that Northumbrian economic influence and use of its coinage was significant for neighbouring areas of Mercia. Bearing in mind the connections between this region and the activities of the Viking Great Army, initially identified at Torksey (Hadley and Richards 2016), and subsequently expanded (Hadley and Richards 2018), it is vital to understand whether the distribution patterns are caused by activities related to the economy of Northumbria, or that of the Viking Great Army.

In §6.4. finds from within and without the hotspot will be considered alongside other metal detected finds and wider contextual information to assess what impact Viking exchange may have had on the distribution of Northumbrian pennies in the landscape, or whether the losses pre-date the Scandinavian impact felt in the 860s and 870s. This will have two aims: to indicate where else Viking impact might be identified through the stray finds of Northumbrian pennies when contextualised alongside other evidence. These finds can then be removed from the dataset, to see what impact there is on distribution patterns for both Northumbrian and ‘Viking’ losses of copper-alloy pennies. For larger assemblages, characterised by 10 or more finds from the same parish, §6.5 examines each in turn to establish the profile of Northumbrian coinage at the site alongside context established in §6.4.

## 6.4. Contextualisation of Northumbrian pennies

The preceding sections have established that whilst Northumbrian pennies have been metal detected from a range of locations, as far apart as Scotland and Cornwall, those that are statistically significant concentrate in south-east Northumbria and an area of Mercia to the south of it. This is important as this pattern of statistically significant coin losses could indicate an extension of Northumbrian economic influence beyond the borders of the kingdom. Whilst the Humber has traditionally been viewed as the southern limit of the kingdom of Northumbria in the ninth century (Rollason 2003), the relationship between it, the kingdom of Lindsey and the kingdom of Mercia is perhaps more nuanced than the idea of a riverine border might suggest.

Optimised hotspot analysis has shown that the finds from north Lincolnshire have as high a statistical significance as those from Yorkshire, not just for the coinage, but also for coins from each period. This can be interpreted in two ways. The first, that it is just as usual to find concentrations of Northumbrian coinage there, as it was to find the coinage in the York region; this would then suggest that its use by the Viking Great Army was caused by them adapting to the fact that it was already in circulation in the area where they were over-wintering. This enables the discovery of the rich assemblage at Torksey to be placed in a wider context of monetary circulation in the region around the winter camp. An alternative interpretation is that the Viking Great Army potentially brought an injection of Northumbrian coinage into north Lincolnshire and the locations that we see them lost at reflect their activities. The Anglo-Saxon Chronicle describes how after the army left London in 872 they “went into Northumbria, and it took up winter quarters at Torksey in Lindsey; and then the Mercians made peace with the army” (Whitelock 1961, 47). This could then suggest that the losses of Northumbrian coinage in north Lincolnshire might be a result of the army’s return from the kingdom.

What this spatial and statistical analysis suggests is a revised distribution, one that does not reflect the historical and archaeological contexts within which these coins may have been lost (and found). Interrogating this further is an extension of the work that has begun to track occurrences of the Viking Great Army finds signature in the region (Hadley and Richards 2018). Finds from within and without the hotspot require

further contextualisation to see if connections can be made to Northumbrian monetary activities or to those of the Viking Great Army.

In this section I re-contextualise finds of Northumbrian pennies with other finds from the Viking Great Army finds signature, prioritising the significance of finds of dirhams, gaming pieces, ingots and Viking Age weights as indicators of Great Army presence at a parish level (Hadley and Richards 2018; Williams 2020; Kershaw et al. 2023). Analysis needs to be done at a parish level for two reasons since both TSS and the EMC give locations at a parish level, and localities are organised by parish on the PAS. The full parish by parish dataset, with a somewhat maximalist approach, can be found in Appendix 3. Firstly, finds of Northumbrian pennies that are also from parishes with a potentially Viking Great Army find, and those that are not can be used to split the overall dataset to see if there is a difference in profiles of periodisation between the two – this is addressed in §6.4.1. This is also relevant for §6.4 which re-contextualises some of the parishes with over ten finds to see if size of assemblage brings a correlation.

#### 6.4.1. Parish-level analysis of co-occurring finds of Northumbrian pennies and objects from the Viking Great Army signature

What this section of analysis sets out to do is see if it is possible to identify if the Viking Great Army had an impact of the single finds discovered both within and without the distribution hotspot. To do this each parish where a Northumbrian coin was found was listed according to whether it was within the hotspot, or if outside, according to kingdom (for ease of analysis), see figure 6.32. Each parish was then cross-referenced with the PAS database, searching for ninth century finds and, where present, these were then divided between ‘Viking Great Army signature’ and ‘non-Viking Great Army signature’. Key objects for this assessment included at least one of the following: a gaming piece, a dirham, an ingot, a Viking Age weight, a silver penny or hack-metal. What this answers is whether there is discernible impact on Northumbrian coin loss either within or without the hotspot.

	<b>Within the hotspot</b>	<b>Outside the hotspot</b>
Northumbria	Allerthorpe, Bagby, Bainton, Barmby Moor, Borrowby, Boynton, Brantingham, Cottam B (northern area), Driffield, Fangfoss, Folkton, Hunmanby, Kilham, Langtoft, Malton, Millington, North Stainley with Sleningford, Pocklington, Preston, Riccall, Rowley, Rudston, Ryther-cum-Ossendyke, Sheriff Hutton, Silpho, Skirpenbeck, Snainton, South Milford, South Newbald, Spofforth with Stockeld, Stillington, Studley Roger, Welton, Wharram-le-Street, Wilberfoss	Snape with Thorp, Thirston
Mercia	Barton-upon-Humber, Brodsworth, Crowle and Ealand, Darrington, Scawby	Bardney, Binbrook, Caistor, Dunham on Trent, Hatton, Market Rasen, Nettleton, Norton Disney, Sleaford, Swinhope, West Wrating
East Anglia	n/a	Long Stratton, Rocklands, Rougham and Larling, Tacolnестon
Kent	n/a	Sandwich
Wessex	n/a	St Anthony's in Meanage

Figure 6.32: List of parishes with finds of one of more Northumbrian pennies and a find from the Viking Great Army signature

#### 6.4.1.1. Finds within and without the hotspot

Figure 6.33 shows a map of the hotspot area with most parishes labelled (see Appendix 3 for the expanded list). Of these 40 parishes also contained finds that could potentially be associated with the Viking Great Army finds signature. This does not mean that the Northumbrian pennies in each of these parishes was associated with the Great Army. What it does do is divide the data between parishes where there is no evidence of Viking Great Army activity and those that *might* have potential. The purpose of this is to try to draw the curtain on what distribution of Northumbrian pennies may have been prior to any impact of Viking Great Army activities. Figures 6.34 to 6.37 show the coldspot areas

for each of the former kingdoms, albeit that all East Anglia, Kent and Wessex are ‘cold’ at a national level.

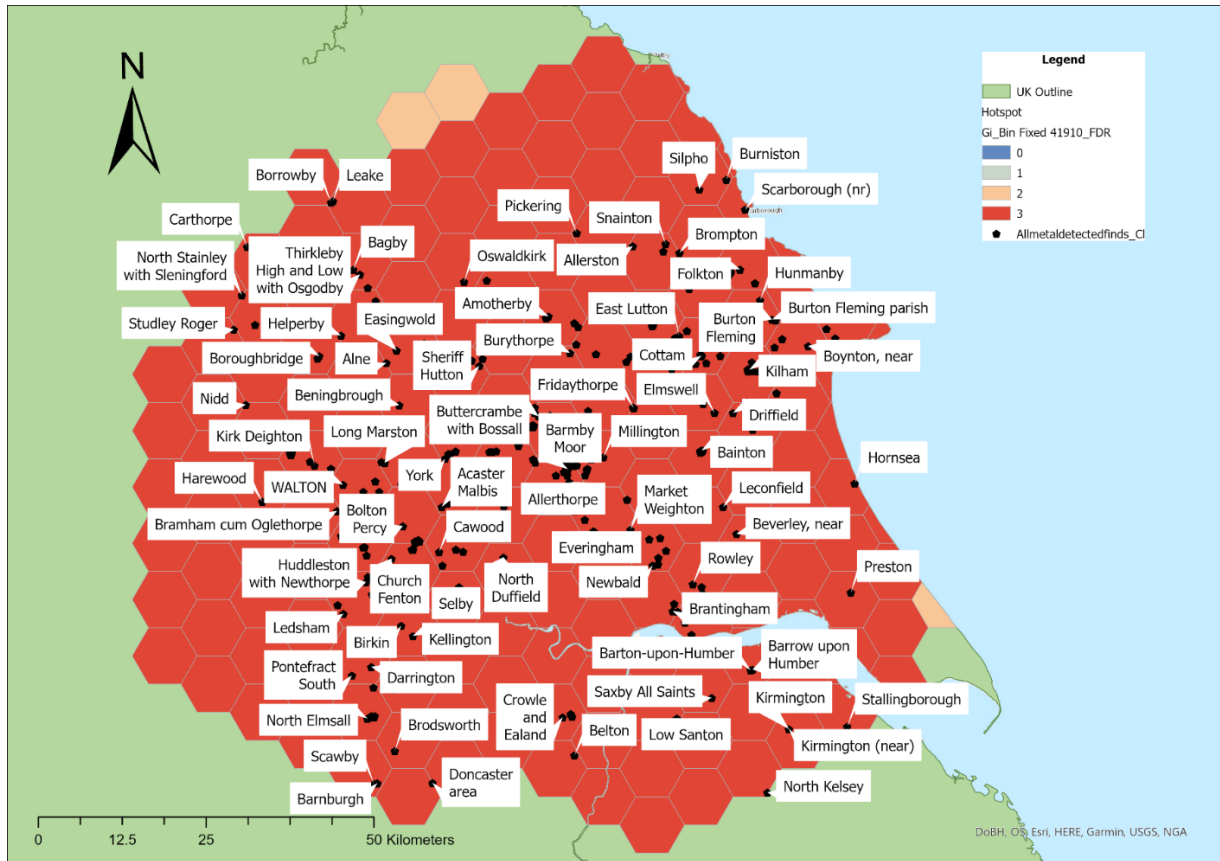


Figure 6.33: Map identifying parishes within the hotspot for Northumbrian coinage

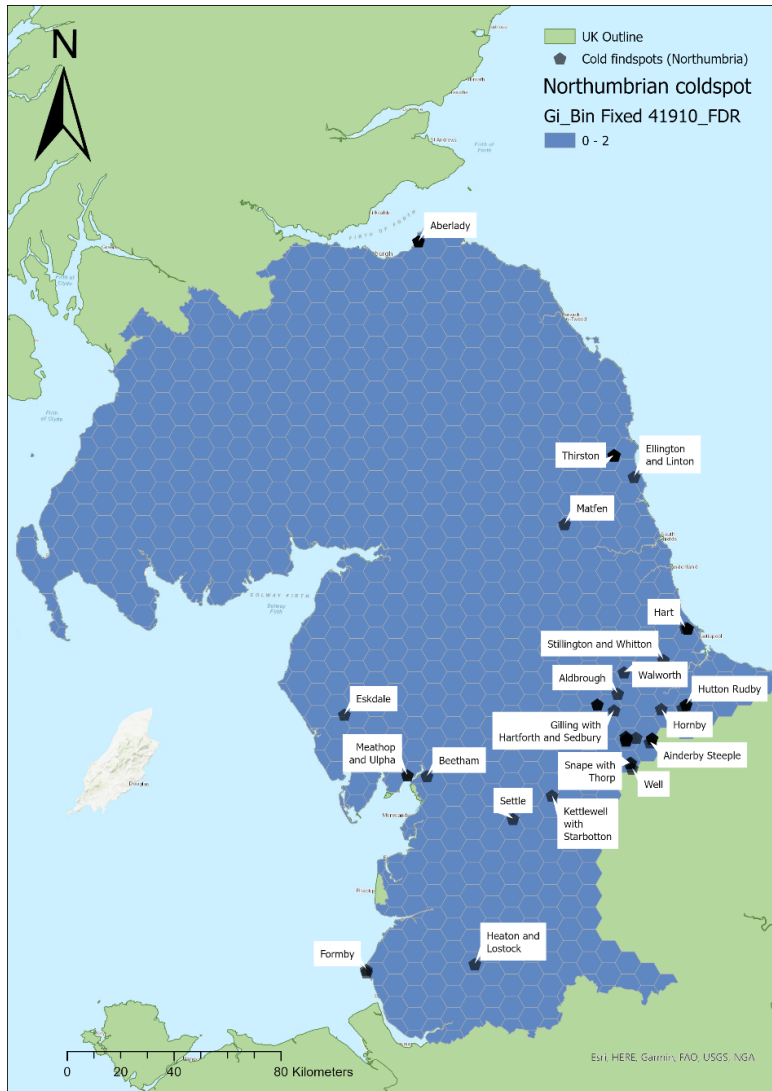


Figure 6.34: Parishes in Northumbrian coldspot



Figure 6.35: Parishes in East Anglia

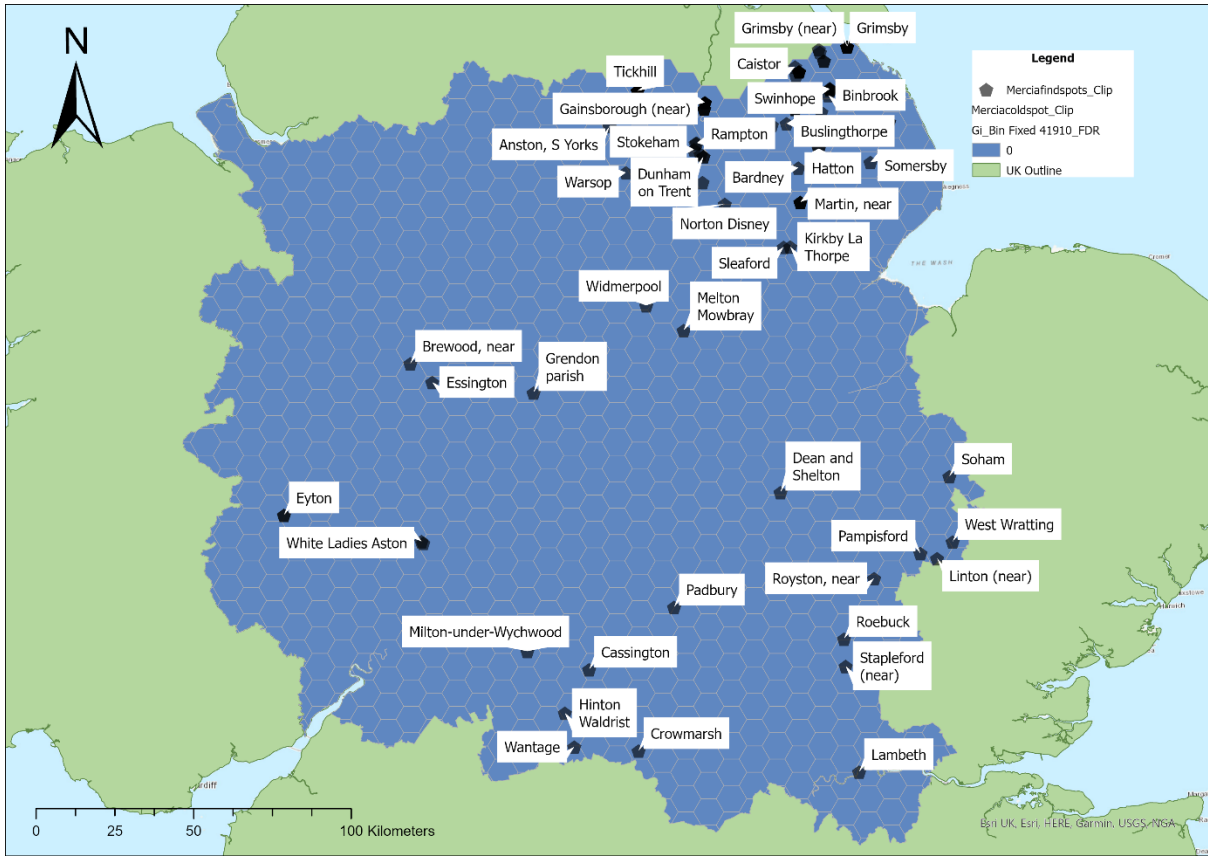


Figure 6.36: Names of parishes where Northumbrian coins are found in the Mercian coldspot

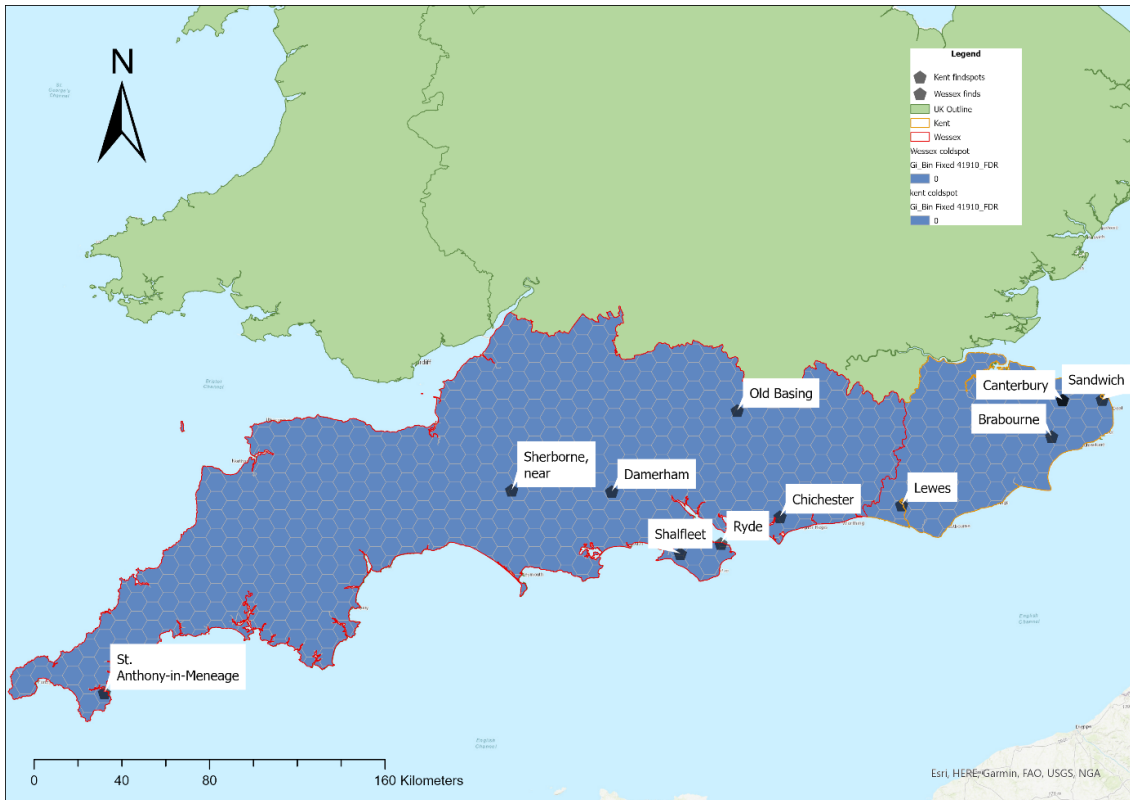


Figure 6.37: Locations of finds of Northumbrian pennies in Kent and Wessex; background is the hexgrid from the national coldspot

6.4.1.3. Comparison between parishes that have Northumbrian pennies as single finds, and those that have Northumbrian pennies alongside Viking Great Army indicators

Figures 6.39 and 6.40 are heat maps that compare the concentrations of finds from parishes where a Northumbrian penny has been metal detected, but with no Viking Great Army indicators, and those where there is a Northumbrian penny as well as potential objects from the Viking Great Army finds signature. Figure 6.39 shows a heat map of parishes with Northumbrian pennies, which are spread across a wider area than those in 6.40, which have co-occurring Viking finds in the parish. The heat map in figure 6.40 is orientated to the east of the country and concentrated on Yorkshire. These areas can be compared according to period, see figure 6.38, both of which show very similar profiles. It is also very similar to the profile for all finds in figure 6.15.

What this similarity in profile suggests is that if there is a regional influence of Viking Age use of Northumbrian pennies, any patterns within that are hidden by prior coin loss in these areas. Whilst the finds from parishes with both a Northumbrian penny and a Viking object look more concentrated in Yorkshire, examination of the data in Appendix 3 shows that many of these parishes each have higher numbers of finds, which is then amplified in the heat maps. Section 6.4 compares the profile of sites with ten or more coins and expand on the contextualisation of these sites further, with the assemblage profile of Torksey in mind.

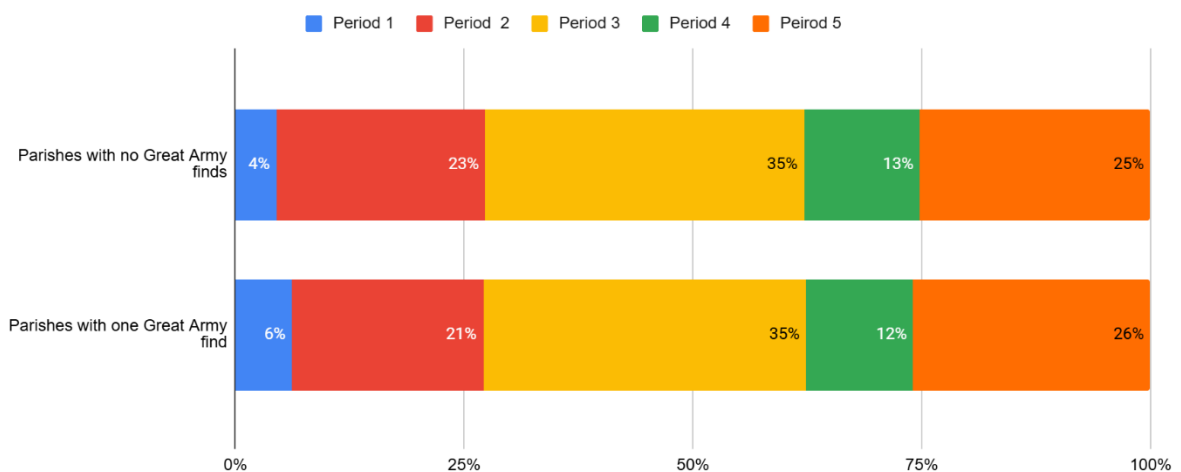


Figure 6.38: Comparison of the profile of coins per period in areas with and without aspects of the Viking Great Army finds signature.

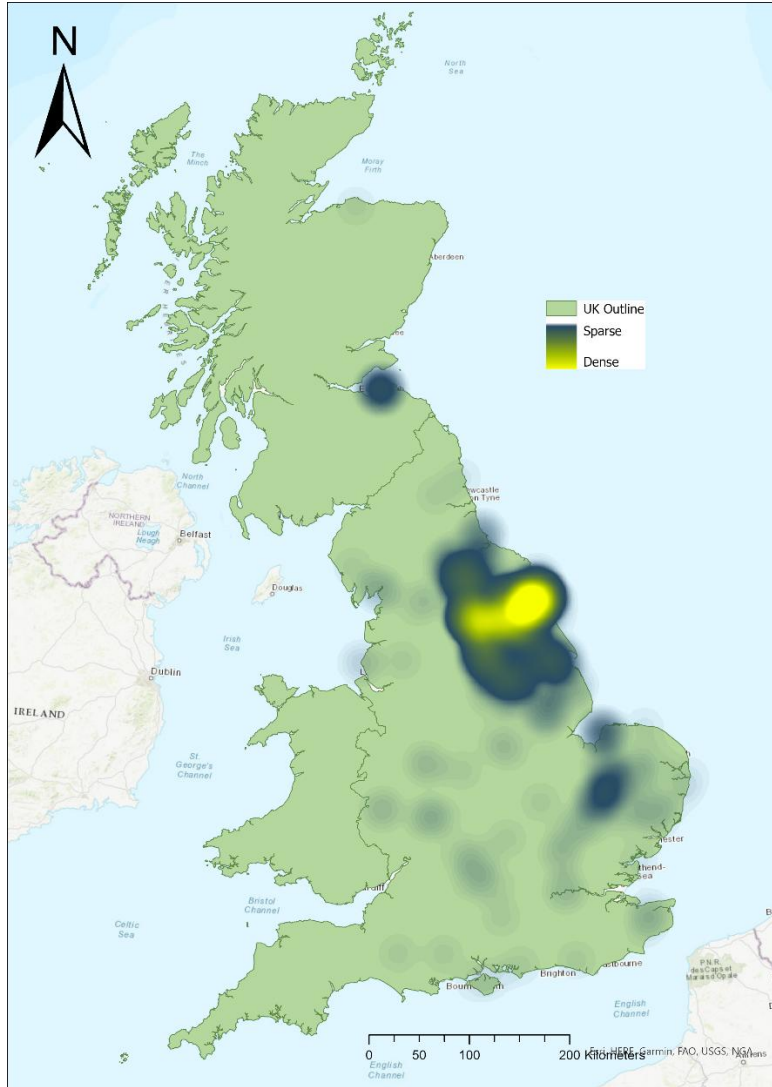


Figure 6.39: Parishes without any Viking Great Army finds signature

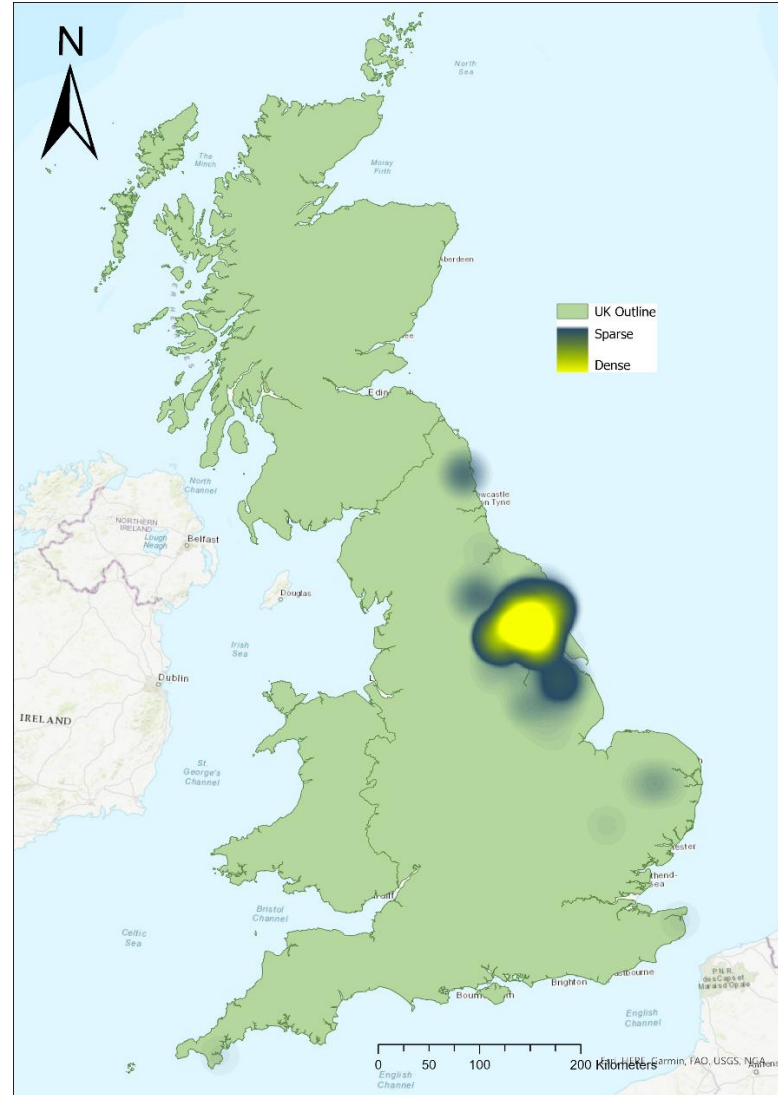


Figure 6.40: Parishes with an aspect of Great Army signature

## 6.4. Assemblages of ten or more finds of Northumbrian pennies

There are sixteen parishes where the metal-detected coins are over ten in number. All in North Yorkshire, these are Bainton, Barmby Moor, Burton Fleming, Cottam (including Cottam B), Kilham, Malton, Millington, Newbald, Pocklington, Ryther, Skirpenbeck, Spofforth with Stockeld, Willerby with Staxton, West Heslerton, Yapham and York. As discussed in chapter four, there are differences in findspot data between the three sources: TSS and EMC reported locations largely at a parish level, whereas PAS largely reports with six figure grid references. Comparisons are made in this section at a parish level, but where possible further scrutiny is made. The chapter ends with a case study examining Cottam B, part of which has been mooted as a potential Viking camp.

There have also been updates to some of the locations listed by Pirie in TSS. According to Abramson (2018), the site of Malton II is agreed to refer to finds from West Heslerton and that name is used here. Malton I as published by Pirie (2000) does refer to the Malton area. Pirie also recorded 'near York' finds, this data is referred to by Abramson as 'outer York', which is used by this author. Data has also been aggregated under the locations of Newbald, South Newbald and North Newbald - in this study they are classified under Newbald parish which includes both villages. The York group includes the 'outer York' assemblage recorded by Pirie and five further finds. The largest assemblage of Northumbrian pennies is from the parish of Newbald, which includes the intensely detected site of South Newbald, with 117 coins; the next largest is the assemblage from the parish of Cottam with 100 coins and includes the site of Cottam B (see §6.4.1). The smallest groups are Aberlady and Gainsborough with 11 and 10 finds respectively; figure 6.41 shows the assemblage size for all parishes. Figures 6.42 and 6.43 represent the proportions of coins from each period by site, first organised by proportion of period 1 material, then by period 5. Apart from Aberlady and Gainsborough, all the locations are within the hotspot of Northumbrian coin finds.

Parish	Period 1		Period 2		Period 3		Period 4		Period 5		Periodised total	Unidentified	Total/site
	Number	%	Number	%	Number	%	Number	%	Number	%			
Aberlady	2	18	3	27	4	26	1	9	1	9	11	0	11
Bainton	0	0	1	7	8	53	3	20	3	20	15	1	16
Barmby Moor	2	8	5	20	12	48	3	12	3	12	25	3	28
Burton Fleming	1	5	7	33	6	29	0	0	7	33	21	0	21
Cottam (parish)	11	11	27	28	41	42	14	14	5	5	98	12	110
Kilham	1	4	7	29	9	38	6	25	1	4	24	6	30
Gainsborough	0	0	1	10	3	30	1	10	5	50	10	0	10
Malton	3	23	0	0	7	54	2	15	1	8	13	8	21
Millington	1	4	3	12	5	20	7	28	9	36	25	3	28
Newbald (inc. South Newbald)	12	12	17	17	37	37	6	6	27	27	99	8	117
Pocklington	0	0	4	36	6	55	0	0	1	9	11	2	13
Ryther	2	3	11	18	10	16	7	11	31	51	61	12	73

Skirpenbeck	1	1	19	28	26	38	9	13	13	19	68	8	76
Spofforth with Stockeld	1	3	4	13	14	45	1	3	11	35	31	7	38
Willerby (with Staxton)	0	0	5	29	10	59	1	6	1	6	17	1	18
West Heselton	2	9	4	17	9	39	5	22	3	13	23	0	23
Yapham	0	0	11	37	11	37	3	10	5	17	30	1	31
'York'	0	0	4	31	6	46	2	15	1	8	13	1	14

Figure 6.41: Parishes with ten or more Northumbrian pennies, with coins periodised

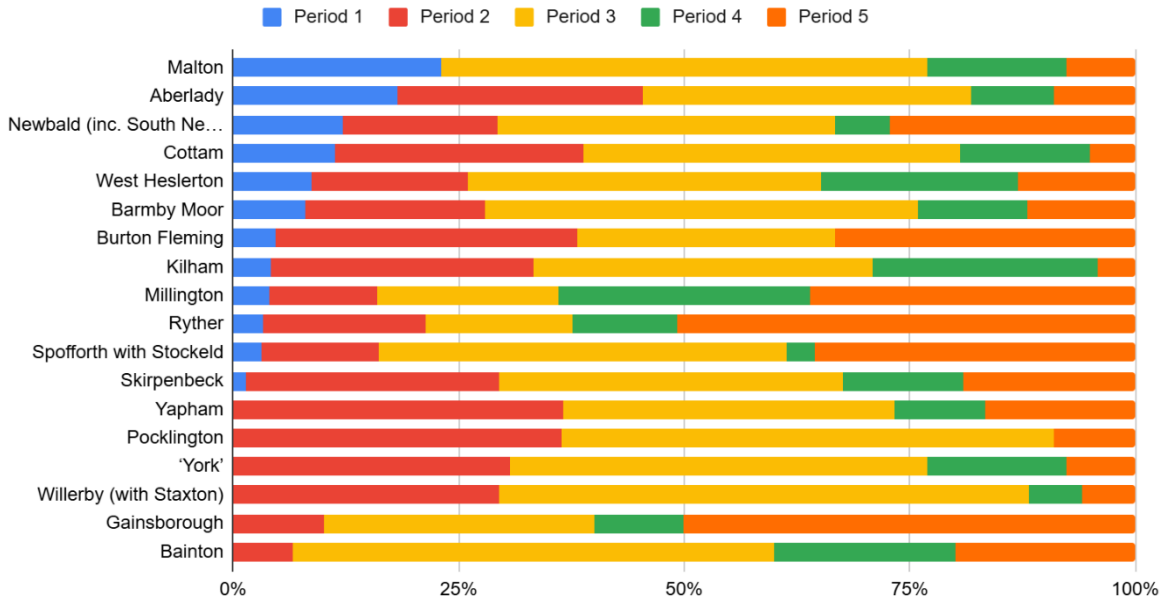


Figure 6.42: Comparison of assemblage profile for sites with more than 10 Northumbrian pennies, organised by proportion of period 1 material

Sites with 10+ Northumbrian pennies

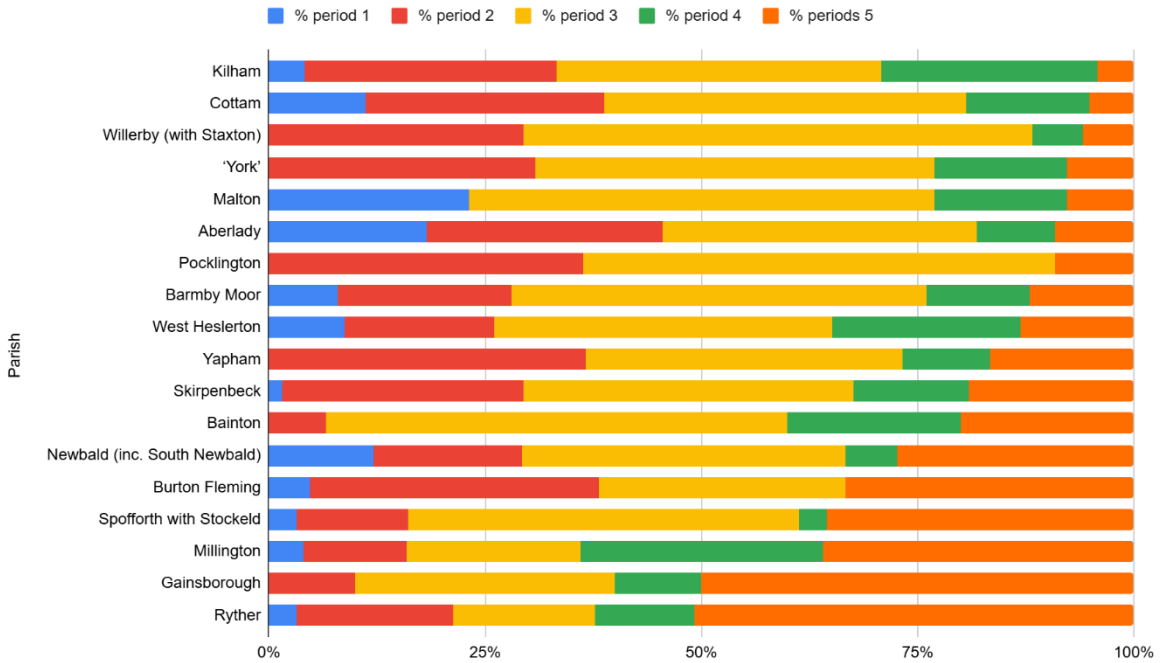


Figure 6.43: Comparison of assemblage profile for sites with more than 10 Northumbrian pennies, organised by proportion of period 5 material

If figures 6.42 and 6.43 are regarded on a period-by-period basis, Malton and Aberlady have the highest proportions of coins produced in period 1. There are also six parishes with no period 1 material, these are Yapham, Pocklington, 'York', Willerby, Gainsborough and Bainton. Coins produced in period 2 are found in every parish, apart from Malton, and comprise between 7 -31% of the various groups. All parishes have period 3 material. Ryther has the lowest proportion with 16% of coins, and Pocklington the highest with 55%. No coins produced in period 4 are found at either Burton Fleming or Pocklington, but all other parishes have finds of them, varying between 6-28%. Every parish has period five coins in the assemblage, but with the widest disparity in proportion, varying from 4 -51%. Gainsborough and Ryther are the two sites where period 5 coins comprise over 50% of the coin assemblage.

These parishes can also be divided, using data from appendix 3, between those that have at least one marker of Viking Great Army activity, and those that do not. They are compared in figures 6.44 and 6.45. The results from this do not suggest any strong correlation between assemblage profiles of parishes that may also have an indicator of Viking activity. This corresponds with findings shown in figure 6.38. To test this further, the rest of the section focuses on derivative issues at these sites.

### Parishes without Great Army finds

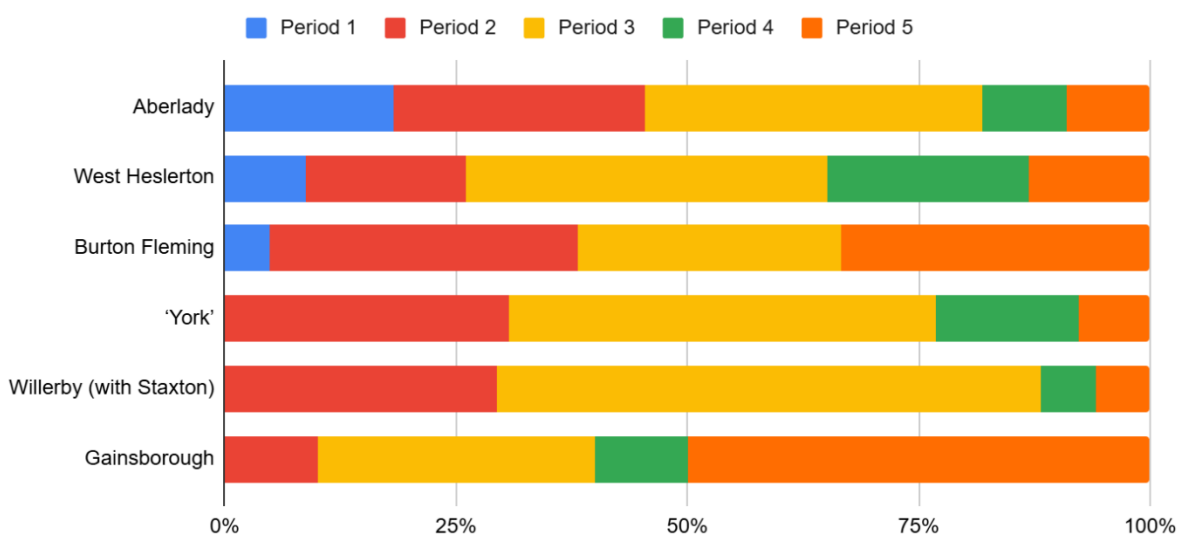


Figure 6.44: Comparison of assemblage profile for sites with more than 10 Northumbrian pennies, that have no Viking finds

## Parishes associated with Viking Great Army finds

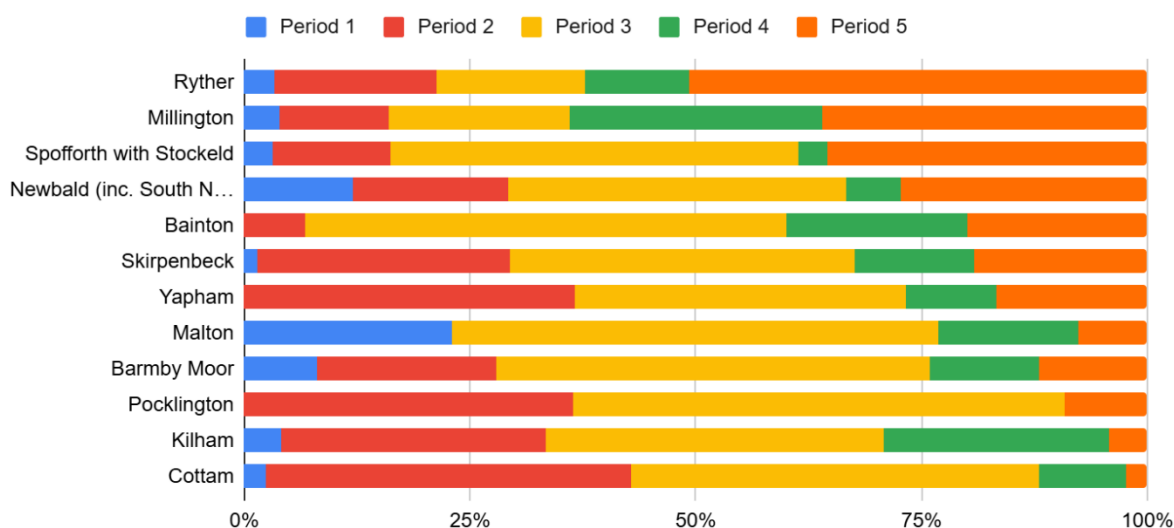


Figure 6.45: Comparison of assemblage profile for sites with more than 10 Northumbrian pennies, that have a co-occurrence of a find with a Viking Great Army finds signature

### 6.4.1. Derivative issues viewed from a parish-level perspective

The suggestion that derivative issues, and their production outside officially controlled monetary systems, could be connected to Viking activity has been previously suggested (Williams, 2014; Hadley and Richards 2018). One way to examine whether greater numbers of derivative issues are linked to Viking activity is to look at areas where there are high numbers of period 5 issues. Period 5 comprises the issues of Osberht, Wulfhere and Pirie's Group D issues. Whilst Osberht and Wulfhere's respective regal and episcopal issues are assumed to be produced under control of moneyers associated with them, the derivative issues which are less literate and produced with less sophisticated die-cutting, are assumed to be minted outside official production.

Examining the relative proportions of Pirie's Group D issues may help to distinguish whether there is any observable correlation between areas associated with a Great Army artefact signature and these derivative types. Figure 6.46 compares derivative finds from metal-detected sites where the derivative assemblage was ten or more coins. They are the parishes of Newbald, Ryther and Spofforth. Figure 6.47 compares proportions of derivative issues between them. All three of these parishes also have Viking Great Army finds signatures. None of the other parishes had a significant number

of finds for comparison, although derivatives are also found in the assemblages at Aberlady, Bainton, Barmby Moor, Burton Fleming, Cottam (including Cottam B), Gainsborough, Malton, Millington, Pocklington, Skirpenbeck, Thirston, Willerby, West Heslerton and Yapham.

Parish	Derivative group				Total
	Group A	Group Di	Group Dii	Undescribed	
Newbald	2	3	6	5	16
Ryther	2	6	15	4	27
Spofforth	0	1	4	5	10

Figure 6.46: Numbers of derivative issues from parishes with 10 or more coins

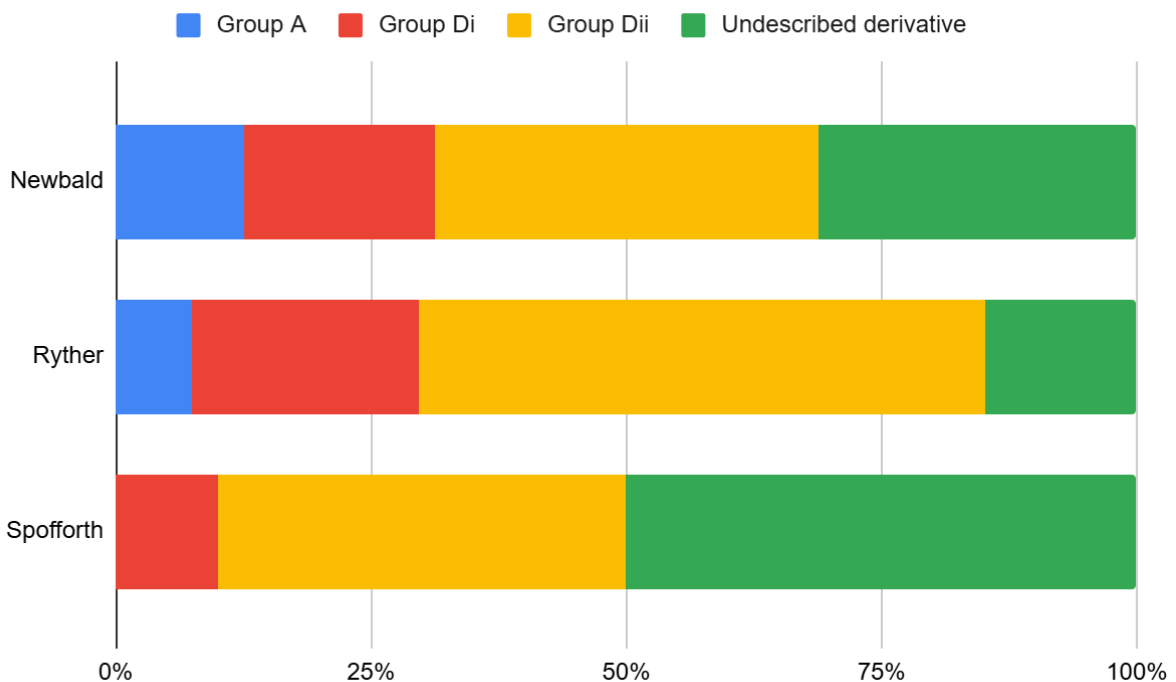


Figure 6.47: Comparing derivative assemblages

#### 6.4.1. Cottam B and Northumbrian pennies

Cottam B is a site in East Yorkshire which was first metal detected in 1987 (Richards 1999, 3). In 1993 it became one of the first 'productive' sites in Yorkshire to be archaeologically investigated (see §2.4.2.1. for discussion). Ongoing work doubled the size of the assemblage, which has enabled interpretations of the site to be further

refined (Haldenby and Richards 2016a). Whilst the basic premise of the interpretation of the site is unchanged, in that it remains a multi-period early medieval settlement, an additional phase of occupation at the site has been revealed. Close assessment of the finds assemblage made it apparent that elements of the Cottam B finds' signature are comparable to that at Viking winter camps. Finds from this phase include weights and melted silver, as well as dress accessories, cut insular metalwork and balances for scales (Haldenby and Richards 2016a, sec. 4.4.1). The transitory settlement, or camp, was identified by plotting finds which could be associated with those found at other winter camps sites, such as Torksey and ARSNY (see figure 6.48). Haldenby and Richards dated the visit to either the years 866-867 after Viking attacks at York, or perhaps later to 876, once the Viking Great Army had divided with a portion moving north.

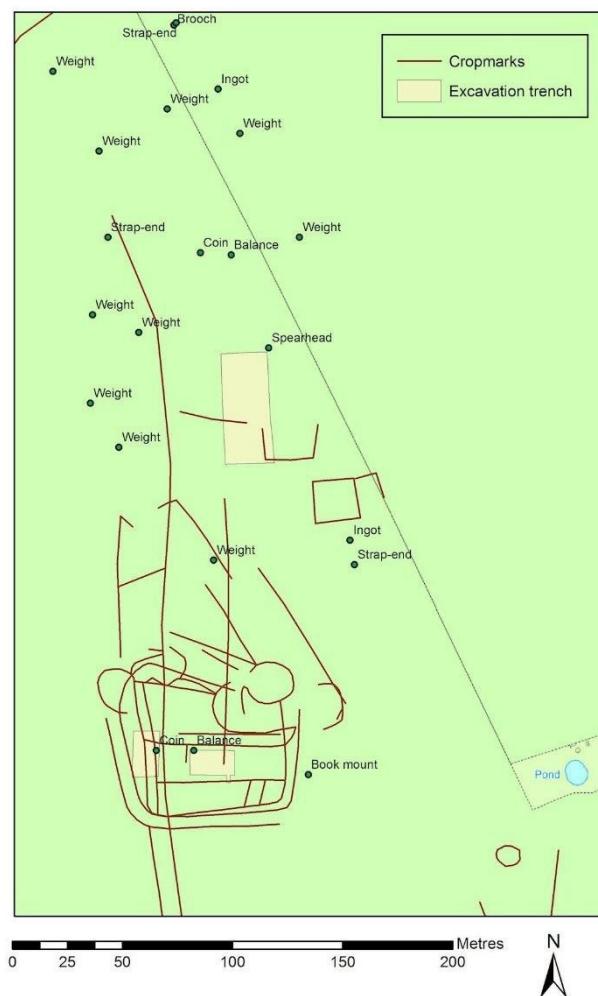


Figure 6.48: Locations of finds that indicate the size of the transitory settlement (Haldenby and Richards 2016b)

Though Northumbrian pennies are not the most common artefact at Cottam B, the presence of 64 coins is significant, since it demonstrates a loss of Northumbrian pennies in both Anglian, and Viking or Anglo-Scandinavian contexts. Whilst the presence of these pennies in the Anglian settlement in the southern area of the site is perhaps to be expected, it is perhaps more of a surprise to see their loss in the potentially later contexts of the northern area of the site. Alternatively, the northern area may have been briefly occupied by the Viking Great Army at the same time as the southern area was. Examining the proportions of coins from each period of Northumbrian coin production may indicate how this chronology may be disentangled. To examine the assemblages from both the southern and northern sites at Cottam B, the northing 466800 is used to broadly divide the site. There are forty-four coins in the southern, Anglian, area of the site, whose sequence begins with base silver pennies of Eanred. The assemblage is described in tables 6.49 and 6.50 and proportions of coins represented in each area are shown in figures 6.51 and 6.52. Spatial analysis of periodised coinage is shown in figure 6.53.

Cottam B (south) had the highest proportions of coins minted in periods 1 and 5 in its assemblage, whereas Cottam B (north) has higher proportions of coins from periods 2, 3 and 4. The high proportion of period 1 coins in the south of the site may be expected, as it is earlier in the chronology of the site. For period 5, there are no coins from this production in Cottam B (north) – which contrasts to profiles of Torksey and Aldwark which have significant groups of period 5 material (see §5.6). However, both the latter sites also contain coins that were produced in periods 2, 3, and 4, so it might be that the coins that were lost at Cottam B (north) may still have been in circulation. The assemblage shows that there is nuance to understanding the profile of Northumbrian pennies at differing sites. Another interpretation, which may also reflect the similarity in patterns between parishes with Great Army finds and those without, is that earlier losses in the Cottam B (north) area may not be related to the other Great Army finds from the site.

Period	Dates	No. coins in southern area	Authority/moneyer - south
1	c.818 – c.845	9	Eanred (8): <i>Herred (1), Eadwine (4), Hwaetred (1), Wilheah (2)</i> Eanbald II (1): <i>Cynwulf (1)</i>
2	c.845 – c.850	7	Eanred (6): <i>Aldates (1), Fordred (1), Heardwulf (1), Monne (3)</i> Wigmund (1): <i>Aethelweard (1)</i>
3	c.850 – c.854	15	Aethelred II (11): <i>Alghere (2), Eanred (3), Fordred (2), Leofthegn (2), Monne (1), Wendelberht (1)</i> Wigmund (3): <i>Coenred (3)</i> Redwulf (1): <i>Fordred (1)</i>
4	c.854 – c.859	6	Aethelred II (6): <i>Eardwulf (6)</i>
5	c.859 – c.866	4	Derivatives (4): <i>Di (2), Dii (2)</i>
0	c.818 – c.875	3	Illegible
	<b>Total</b>	<b>44</b>	

Table 6.49: Table shows numbers of coins per Northumbrian production period in southern area of Cottam B

Period	Dates	No. coins in northern area	Authority/moneyer - north
1	c.818 – c.845	1	Eanred (1): <i>Tidwine (1)</i>
2	c.845 – c.850	3	Eanred (2): <i>Brother (1), Monne (1)</i> Wigmund (1): <i>Aethelweard (1)</i>
3	c.850 – c.854	7	Aethelred II (6): <i>Cunemund (1), Eanred (2), Monne (1), Wihtrud (1), Wulfred (1)</i> Redwulf (1): <i>Alghere (1)</i>
4	c.854 – c.859	4	Aethelred II (4): <i>Eardwulf (4)</i>
5	c.859 – c.866	0	n/a
0	c.818 – c.875	3	Illegible
	<b>Total</b>	<b>18</b>	

Table 6.50: Table shows numbers of coins per Northumbrian production period in northern area

Period	Dates	No. coins – south	% proportion coins/period - south	No. coins – north	% proportion coins/period - north
1	c.818 – c.845	9	22.5	1	6.7
2	c.845 – c.850	7	17.5	3	20.0
3	c.850 – c.854	15	40	7	46.7
4	c.854 – c.859	6	15	4	26.7
5	c.859 – c.866	4	5	0	0
0	c.818 – c.875	3	-	3	-
	<b>Total</b>	<b>44</b>		<b>18</b>	

Table 6.51: Table compares proportion of coins per period of production in southern and northern areas

### Comparison of northern and southern assemblage profiles at Cottam B

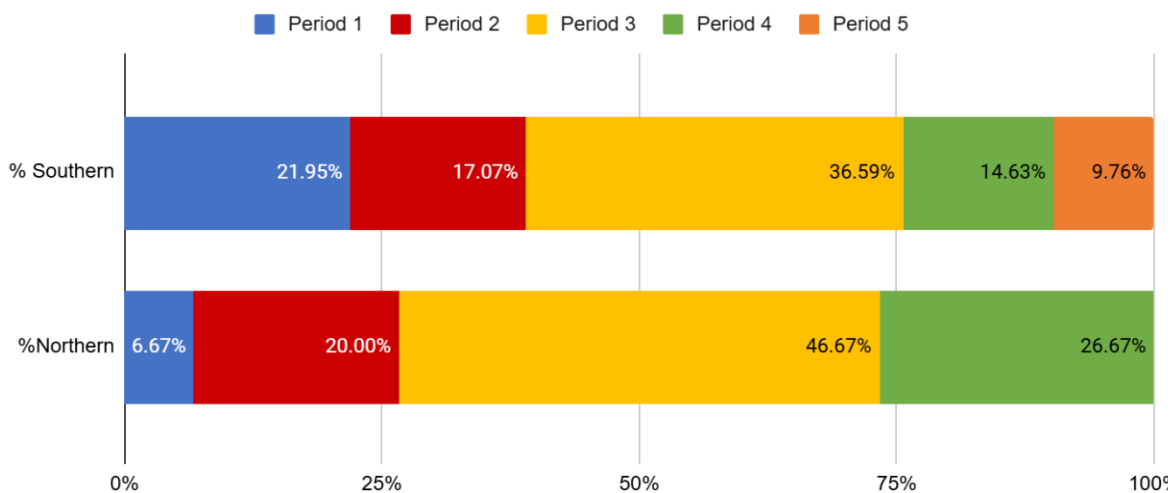


Figure 6.52: Graph compares proportions of periods of coin loss at southern and northern areas of Cottam B

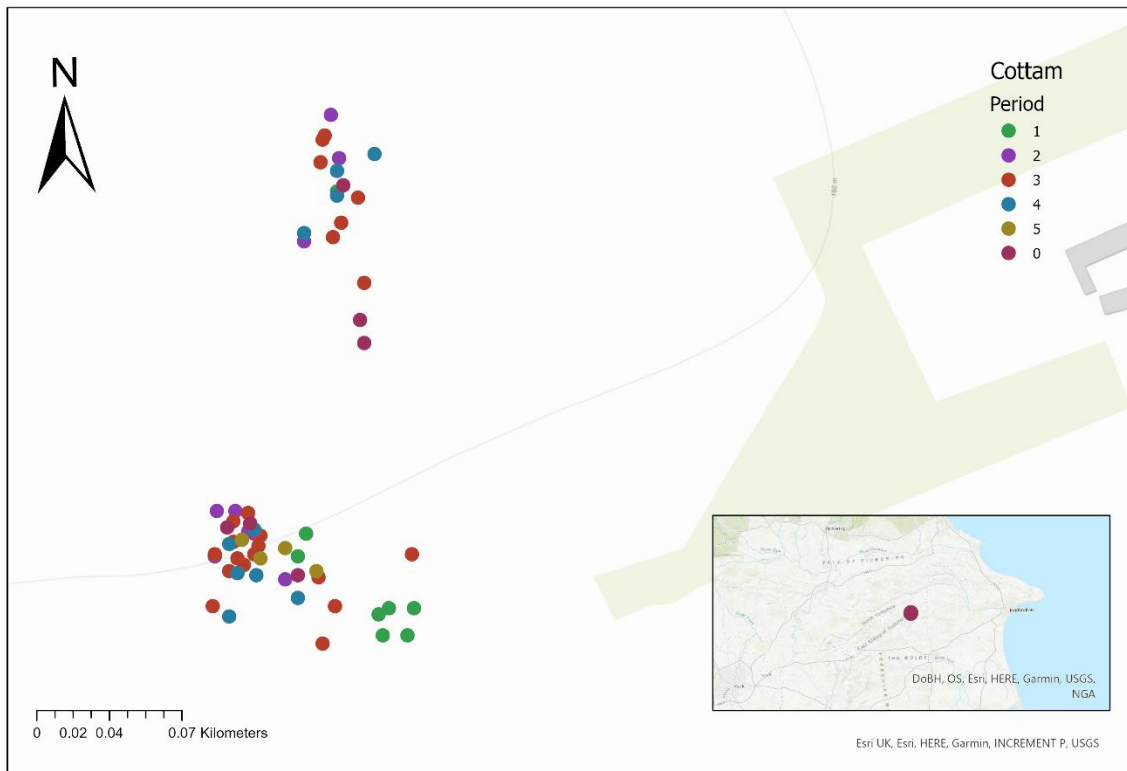


Figure 6.53: Map shows southern and northern areas of Cottam B with periodised coins highlighted.

The assemblage of derivative issues at Cottam B is much smaller in total than at either Torksey or Aldwark. Of the 62 Northumbrian copper-alloy pennies found there, only four can be positively identified as derivative issues. Figure 6.54 describes the issues, all of which are from the southern area of Cottam B. With such a small sample, comparing proportions of derivative issues present at Cottam B to those at Torksey or Aldwark would be likely to exaggerate any findings. However, it is noticeable that despite Di being the smaller group in general, there are two coins from it, as well as two from Group Dii.

Plot number	Derivative group	Site area	Dii sub section	CKN die number
131	Di	South	n/a	Obverse: 1795; reverse: 1806
200	Di	South	n/a	Not in CKN
147	Dii	South	Reflectives I	Obverse + reverse: 1955
191	Dii	South	Reflectives III	Obverse + reverse: 2186

Figure 6.54: Derivative issues identified at Cottam B.

The dating of the two areas of Cottam B is, as indicated earlier, is more complex than initially thought. If the northern area was later in date, it might be expected that it would have a larger proportion of period 4 and 5 issues, however the reverse is true as the northern section has lower proportions of all Northumbrian issues. Cottam B (north) does have a higher proportion of illegible issues, which may conceal the presence of later issues in that assemblage. That said Cottam B (south) has an assemblage weighted more towards periods 1 and 2, whereas Cottam B (north) is weighted more towards periods 3 and 4, perhaps indicating greater activity at the north of the site in the period from c.850 onwards. Haldenby and Richards suggested that the northern area of Cottam B might date to either 866-867 or to 876, based on the proportions of coins represented I would be more inclined to an earlier dating of c.866-867. The subtler distinction between the northern and southern areas of the site may reflect interactivity between the sites and, alternatively or additionally, demonstrate further evidence for circulation into the later 860s and beyond.

## 6.5. Conclusion

This chapter has used data from metal detected finds to explore intersections between finds of Northumbrian pennies and objects relating to the Viking Great Army finds signature. For the first time an aggregated dataset of all metal detected Northumbrian pennies has been created. This has enabled large-scale analysis to be undertaken that investigates the distribution of single finds of Northumbrian pennies from across Britain. This has shown that whilst the finds concentrate in the previously recognised Northumbrian part of Yorkshire, optimised hotspot analysis has shown that for areas of

north Lincolnshire and south Yorkshire, Northumbrian pennies from those areas are just as statistically significant as those from Yorkshire. This indicates that Northumbrian monetary influence extended south of the border of the kingdom, or perhaps the border itself was more southerly. Here to once again refer to Kemmers and Myrberg's (2011) values, *belonging* is once again key. If borders of a kingdom are more porous, or an economic area extends, what does that mean for the people who live there and to what extent might the use of a particular currency reflect or oppose an identity.

Deepening this question, the geographical data associated with these finds in combination with the new periodisation (see chapter 4) enables spatial comparison to be made between finds from the different periods of production. This shows that coins produced in period 1 concentrate in south-east of Northumbria but did also travel outside the kingdom. Period 2 sees an increase in the number of finds and their distribution both within and without Northumbria. This trend continues for finds produced in period 3. Period 4 sees a contraction in the number of finds, likely due to a reduction in coins produced. Distribution again expands for coins produced in period 5.

Recontextualization of Northumbrian coins at a parish level takes an expansive approach to comparing parishes with Northumbrian pennies and aspects of the Viking Great Army and those that do not. Comparison between these two overall corpuses shows minimal difference between the two, suggesting that if there is Viking influence on coin distribution, earlier coins losses may conceal it. At a parish level, assemblages with 10 or more coins were periodised, and the wider finds from the area examined to see if there could be a Viking Great Army context. Similarly, there was not necessarily a direct relationship between parishes with Viking Great Army material and their profiles of Northumbrian coinage having a similar pattern to the sites of Torksey and Aldwark, although this is the case for Ryther, Millington and Spofforth, as well as Gainsborough and Burton Fleming. The former three are already associated with Viking activity, but that is not the case for the latter two, which were not explored due to data limitations. This complexity is again discussed in the case study of Cottam B. The site is split into north and south, with a potential camp mooted in the northern area. Again, the coin profile complicates interpretation, but it does not preclude Viking influence, but its

analysis highlights that scrutiny of the assemblage is required to interpret it. Again, thinking about *belonging*, the premise this section of the chapter tested was whether Northumbrian pennies found beyond the traditionally understood borders of the kingdom, could be understood as a trace of the finds signature of the Viking Great Army. In this scenario, the coin belongs to a searched-for Viking identity. This reiterates how context (and contextualising finds) are so important. Asking the question in this chapter “are these Northumbrian coins now ‘Viking’” and closely examined nearby finds, I show that the answer is not neat. Some, yes, belong to a Viking finds signature, but not as far as we can see all.

This leads us to the two core points to take away from this chapter. The first is that distribution patterns across Britain show a coinage expanding during the ninth century, and that finds from every period of its production extended into areas of north Lincolnshire and south Yorkshire. This challenges previous interpretations of the extent and influence of Northumbrian coinage. Secondly, the complexities shown when comparing assemblages demonstrate that there is not a straightforward connection between finds of Northumbrian pennies and indicators of the Viking Great Army. This is especially true for finds outside Northumbria (discussed in §6.2), but is also true for those inside the kingdom, as well as for sites like Cottam B where there is good reason to suggest some Viking activity. What this urges is caution when examining the data, and that a Northumbrian penny alongside a Viking find does not automatically indicate Great Army presence.

## 7. Excavated assemblages

### 7.1. Introduction

Whilst Chapter 6 considered what data from metal detected finds can tell us about the production and distribution of Northumbrian pennies, this chapter will excavated sites and conclude that the new periodisation can be a tool to redate key ones. The chapter begins with a brief overview of the sources and methods used, a summary of sites and the rationale for the selection of the case studies. The remainder of the chapter focuses on major case studies based on material from: York, Carlisle, Tyne and Wear, Whitby Abbey, Whithorn Priory, Dacre, Flixborough, Bamburgh Castle, Lindisfarne, Beverley, Castle Park in Dunbar and Llanbedrgoch. The periodisation (as outlined in chapter 4) is applied to the chronology of these sites, and where possible aligned with the spatial distribution of the finds. These case studies are followed by shorter ones on significant sites with a smaller number of coins, including: Rousay in Orkney, Castle Park in Dunbar, Hoddum in Dumfries and Galloway, Caernarfon in Wales, and Eynsham in Oxfordshire. The chapter concludes with a summary on how Northumbrian coins influence site dating and compares them to the assemblages of Torksey and Aldwark. This leads to the redating of key sites and archaeological strata, and therefore a need to reinterpret the archaeological record of Northumbria.

### 7.2. Overview

Data for excavated sites used in this chapter primarily comes from *Thrymsas, Sceattas and Stycas* (Pirie 2000b). To augment Pirie's catalogue for excavated finds post-2000 I used the Archaeology Data Service's (ADS) search tool to try to surface more excavations where Northumbrian pennies had been found. I used a combined search of "coin" with "early medieval" and then read the reports from the 52 sites that came up. One only of these sites included the excavation of a Northumbrian penny; it was far more common for the search to return results that mentioned coin (but in a Roman context) along with a mention, however brief, of early medieval. Equally ADS do not host every grey literature report from commercial services, and it seemed that to contact every archaeological practice to see if they'd come across any relevant material might

be an exercise in diminishing returns. Social media has been useful in discovering ongoing work on assemblages that include Northumbrian coinage, with information from the Bamburgh Research Project and DigVentures' work at Lindisfarne being shared online.

The screenshot shows the ADS search interface. At the top, the 'ads Archaeology Data Service' logo is visible. Below it, navigation links include 'ADS Main Website' and 'Help'. A menu bar contains 'ALL | JOURNALS AND SERIES | GREY LITERATURE | PROJECT ARCHIVES | BIBLIOGRAPHIES | THESES'. The search filters are set to 'WHAT: Object, Currency, Coin' and 'WHEN: Early Medieval'. A 'RESET QUERY' button is present. The search results show 52 results on page 1 of 3. The results table has columns for 'TITLE' and 'YEAR'. The top three results are:

TITLE	YEAR
Torksey Viking Camp: Illustrated Artefact Catalogue, 2024 Julian D Richards, Mark Randerson, Dawn Hadley	2025
Aldwark Viking Camp: Illustrated Artefact Catalogue, 2024 Julian D Richards, Mark Randerson, Dawn Hadley	2025
Lordship and Landscape in East Anglia AD 400-800: Digital Appendices Suffolk County Council Archaeological Service, UCL Institute of Archaeology	2024

Figure 7.1: An example search on ADS showing top results for 'object', 'currency' and 'coin'.

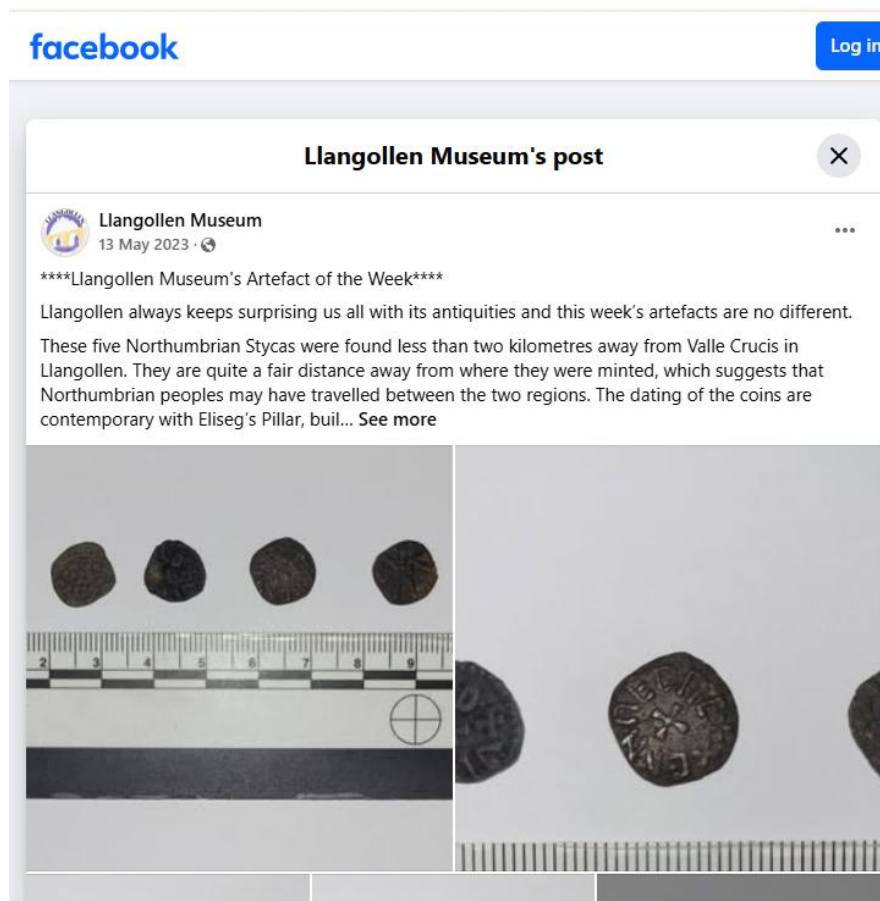


Figure 7.2: Screenshot of a Facebook post from Llangollen Museum showing a recent find of Northumbrian pennies. These coins were on loan to the museum, so are not included in data later in this chapter. ©Llangollen Museum

### 7.3. Summary of sites and case studies

Whilst the assemblage of excavated finds may be smaller than the metal detected assemblage discussed in chapter 6, it is still significant. Firstly the 568 excavated finds expand the distribution of Northumbrian pennies still further, with finds from Orkney, the Hebrides and Wales to the west, as well as locations into the north-east of England, the Yorkshire Dales and Cumbria, and further south into East Anglia and Wessex. The second factor with excavated finds, is that dependent on the quality of the excavation and subsequent publication, it can be possible to relate them to their archaeological contexts. In some cases, this enables patterns of chronology within sites can be discerned. However, this is not possible for all sites, with some yet unpublished, or with others excavated at times when detailed site records were not kept. For this reason, after discussion of the overview of sites, the chapter will focus on case studies which either have larger assemblages of coins finds, or where there is significant archaeological context to be discussed. Figure 7.3 gives an overview of all excavated sites, or sites where a single find was subject to subsequent archaeological investigation.



Figure 7.3: Map showing locations of excavated sites or finds closely associated with archaeological remains.

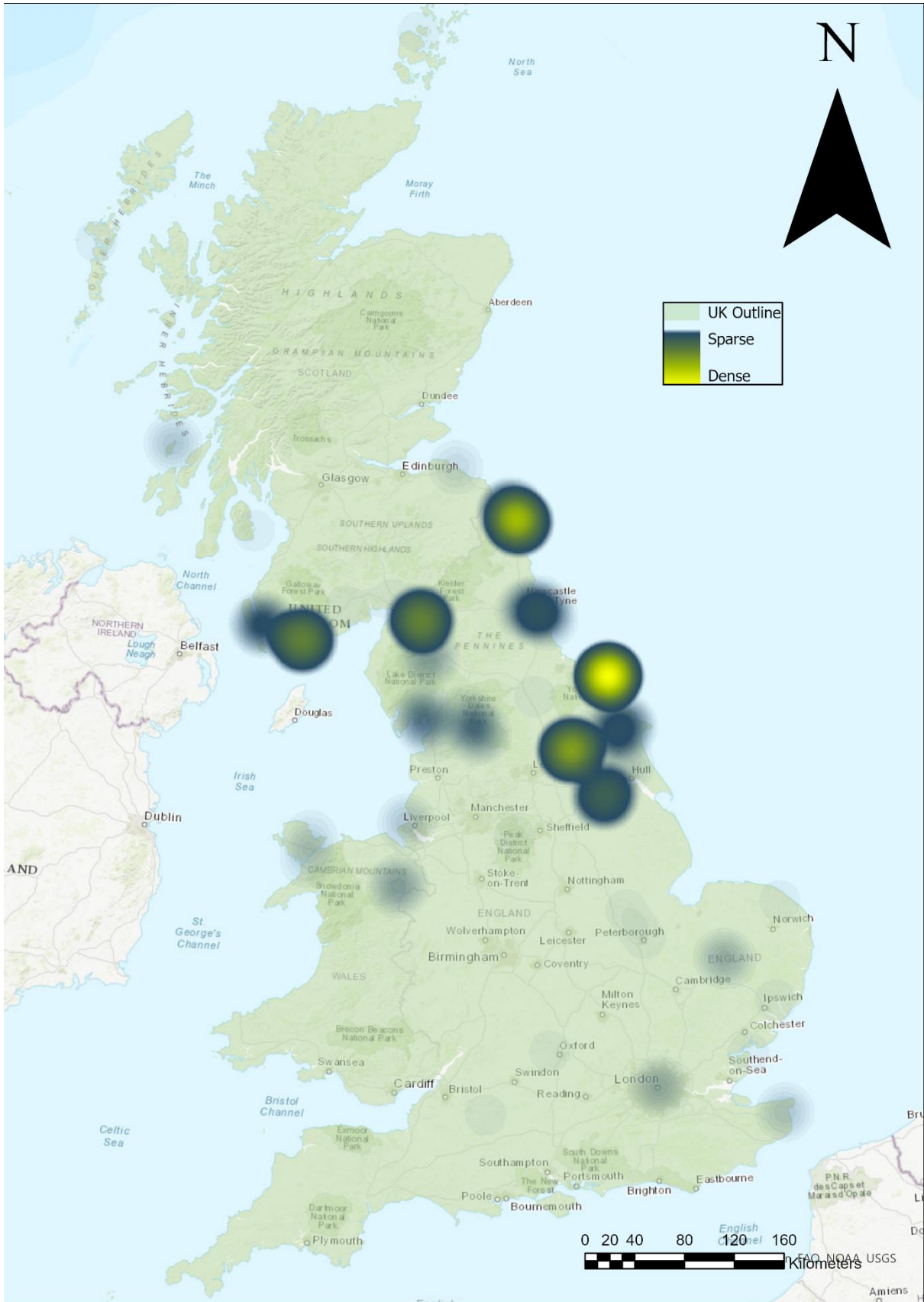


Figure 7.4: Map showing densities of excavated coins finds across Britain, areas with densest concentrations are yellow.

## 7.4. Case studies

Sites were chosen as detailed case studies for two reasons: they had a significant assemblage of Northumbrian pennies, or a smaller number of pennies but with good contextual information, or both. The following sections reinterpret some well-known sites, including the assemblages of Whitby Abbey and Whithorn Priory, as well as drawing attention to some that are lesser known. The case studies start with three that are locality based: York, Carlisle and Tyne and Wear sites.

### 7.4.1. York

Whilst no mint of this period has been excavated from York, and there is no written documentation describing the city as the site of a mint, it is still inferred that York was the location where metal was turned to coin in the ninth century. Discounting the hoard material, which is considered in §8.2.2., there are 70 excavated Northumbrian pennies from 20 sites referred to in this section. Four of these sites have assemblages of ten or more coins; these are York Minster, 16-22 Coppergate, 46-54 Fishergate and Wellington Row. The rest may have a few coins or a single find: 21-33 Aldwark, Bedern Chapel, 9 Blake Street, Barbican Baths, 58-59 Skeldergate, Clementhorpe, Clifford Street, Clifford's Tower, Industrial School, Trentholm Drive, Cloister in St Mary's Abbey, Cattle Market, 24-30 Tanner Row, Foss Islands Road, Lendal Bridge and Blue Bridge on Fishergate. Figure 7.5 maps these sites based on density of coin finds. All of these sites, bar Wellington Row, had their coins published by Pirie (2000b). The finds from Wellington Row are held by York Archaeology but not yet published. For various reasons it has not yet been possible to view the material; a case study of the site would be a desirable addition to a future publication but is not presented here.

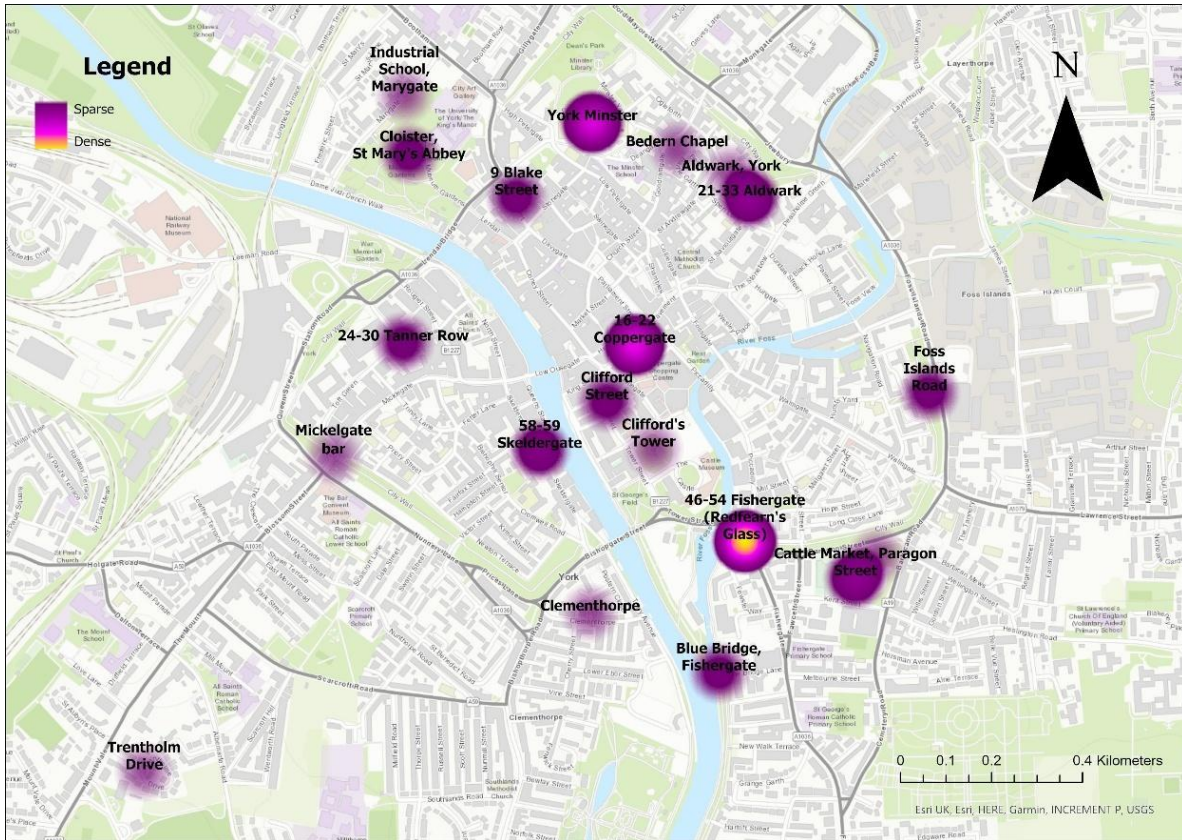


Figure 7.5: Excavated Northumbrian pennies from York, density of finds equates to numbers of finds from excavation.

Distribution of the coins according to period on a site basis is reviewed through figures 7.6 to 7.10. Coins produced in period 1 are found at 7 sites (figure 7.6), from period 2 are found at 6 sites (figure 7.7), from period 3 at 13 sites (figure 7.8), from period 4 at 5 sites (figure 7.9) and period 5 at 7 sites (figure 7.10). The sites are spread across the city, and there is little clustering by period. The exception to this is period 1 coins, which have some clustering in the area from York Minster down to Aldwark. The proportions of sites that contain hoards from each period is shown in figure 7.11.

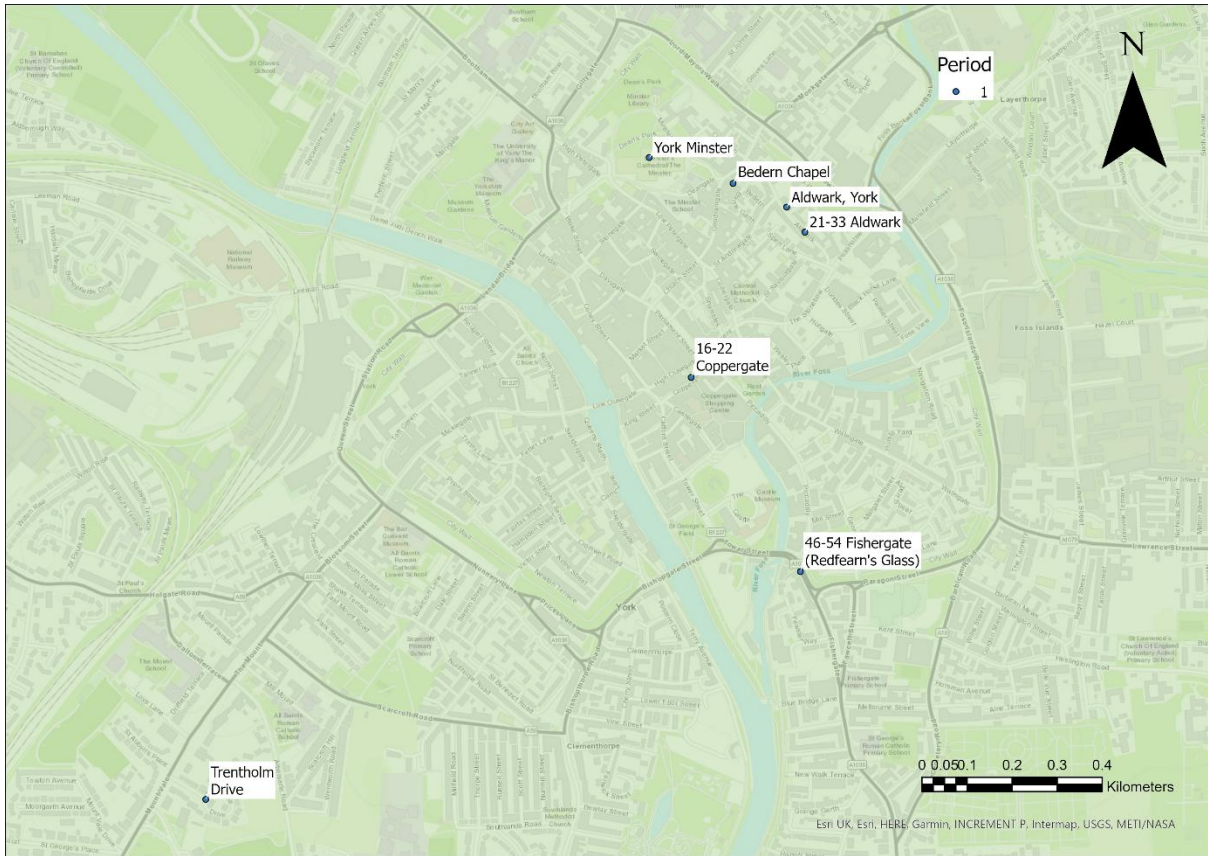


Figure 7.6: excavations with coin finds from period 1

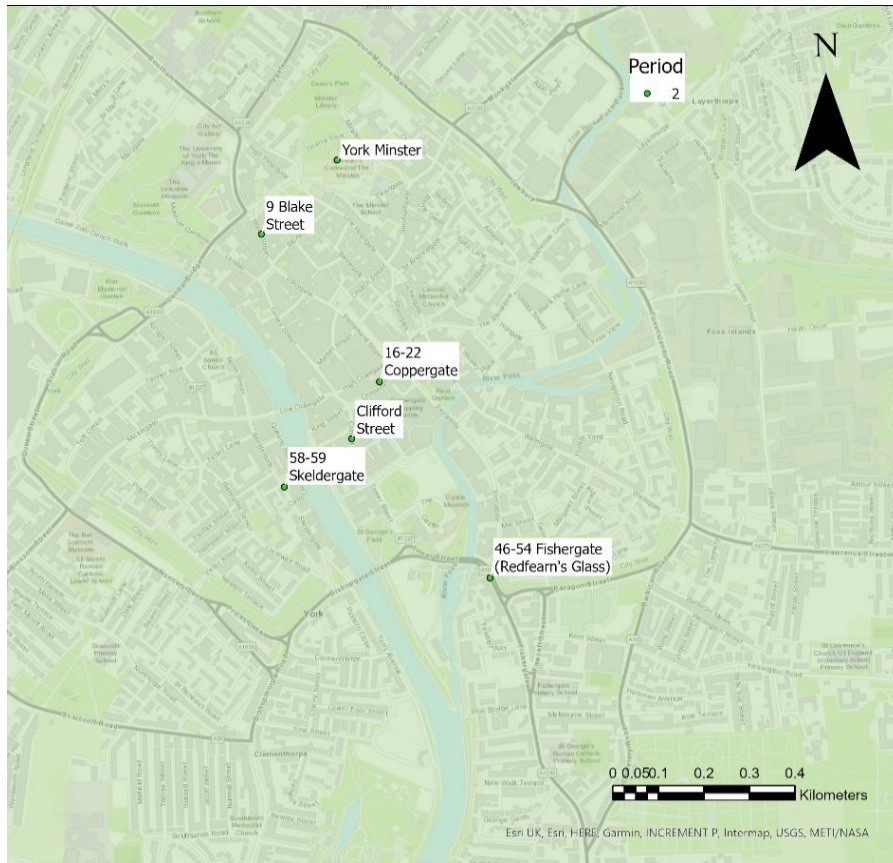


Figure 7.7: excavations with find from period 2

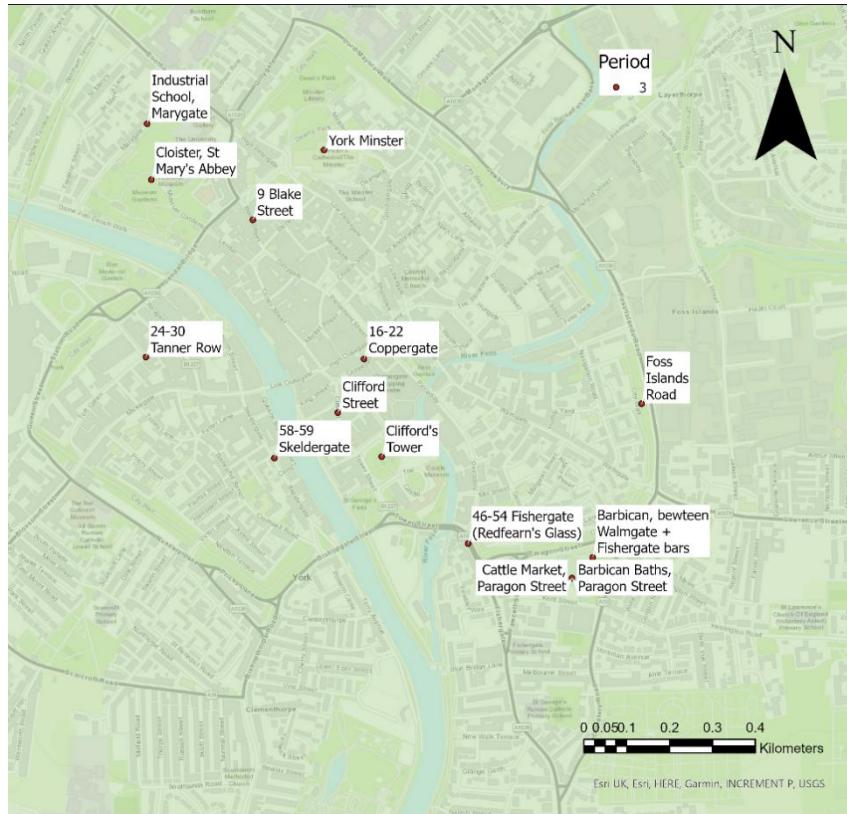


Figure 7.8: excavated Northumbria coins of period 3

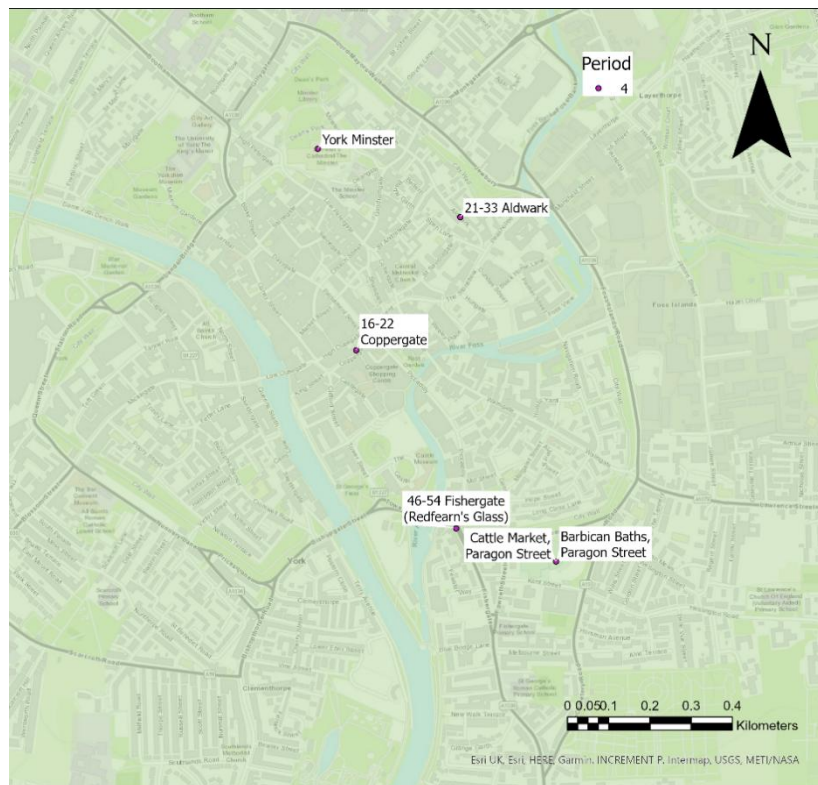


Figure 7.9: excavated coins of period 4

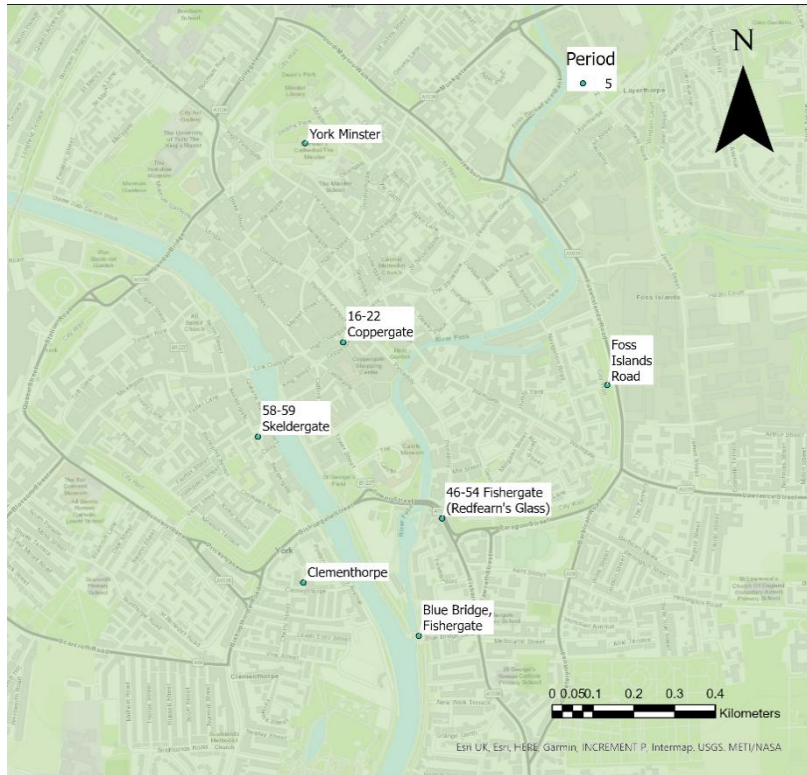


Figure 7.10: excavated coins of period 5

### % sites with coins from each period

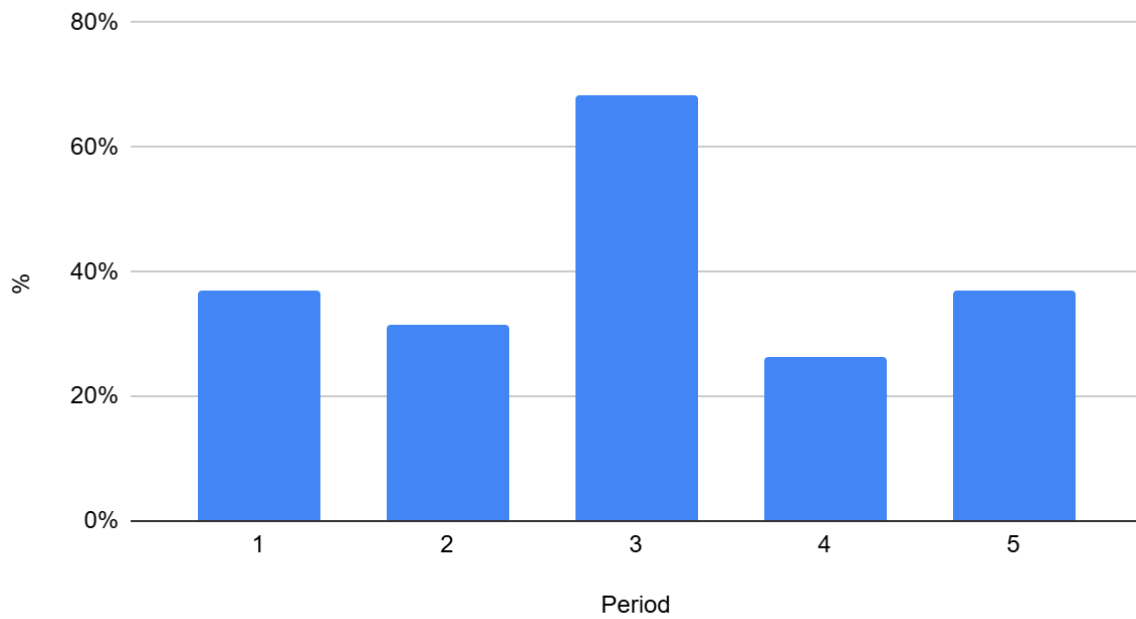


Figure 7.11: Looking at the York corpus, this shows what percentage of sites have coins from which period, showing coins from period 3 are most recovered.

For the larger assemblages of Coppergate (see §7.4.6.3), Fishergate (§7.4.6.1) and York Minster (§7.4.6.2), with respectively 10, 10 and 13 coins, their assemblages can be periodised and compared to the corpus from the rest of York. Figure 7.12 shows the proportions of coins from each period, alongside an average for sites with less than ten; figure 7.13 compares them. In the preceding chapter, figure 6.15 showed the percentages of periods represented by the corpus of single finds: period 1 (5%), period 2 (22%), period 3 (35%), period 4 (12%) and period 5 (25%). Comparing the proportions below suggests that York’s periodisation, as a major urban centre of the period, differs. Fishergate is most comparable, but with higher period 3, and lower period 5, whereas the other three groups all have higher proportions of period 1 and then variability across other periods. They may be amplified due to the size of assemblage. Subsequent sections explore Fishergate, York Minster and Coppergate in more detail.

Period	York, >10 finds		Minster		Coppergate		Fishergate	
	No.	%	No.	%	No.	%	No.	%
1	5	18%	2	20%	2	20%	1	8%
2	3	11%	1	10%	2	20%	3	23%
3	13	46%	2	20%	3	30%	6	46%
4	3	11%	2	20%	2	20%	2	15%
5	4	14%	3	30%	1	10%	1	8%
Total	28		10		10		13	

Figure 7.12: Comparison between the proportions of finds from all sites with less than 10 coins, to excavated material from York Minster, Coppergate and Fishergate.

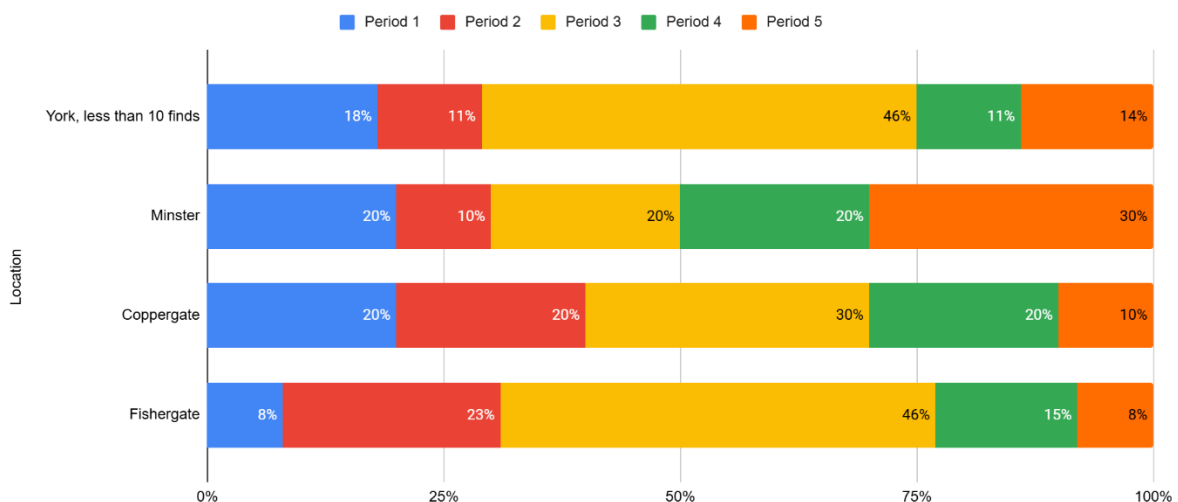


Figure 7.13: Comparison of proportions of coins per period in York.

#### *7.4.6.1. 46-54 Fishergate*

There are 18 coins that are known to originate from excavations at 46-54 Fishergate, but records on them come from a range of sources. Pirie (2000) lists 12 Northumbrian pennies from the site without further archaeological context; 5 coins are listed in Abramson (2019); and one coin is recorded on EMC 2001.1307. The official publication of the site mentions four coins (sf 5607, sf 6070, sf 4444, sf 7672) from the site (Kemp 1996, 58–61). The discrepancy in publication data is because the coins were meant to be included in the Pirie York volume AY 18/1, so were deferred from other publications, but they were ultimately not included in Pirie's volume (Kemp 1996, 66). With limited spatial data, comments can only be made regarding the distribution on site of the four coins where it is published. These coins are all attributed to phases in period 3 which reflect the development and abandonment of an Anglian industrial area on the site (§2.3.10).

The earliest phase is period 3a, which reflected a trading establishment and its neglect and abandonment, followed by 3b a period where the site was filled and covered with a charcoal layer, then 3c which was a phase of limited re-occupation. Figure 7.14 shows the dating given in the publication the relation of these sites. In parallel to these three phases the team also identified a period 3z, which was unstratified and could be linked to any of them, although the report author linked its finds to 3a. All four coins are to the north of the site, as shown in figure 7.15. Without the name of the moneyers who minted coins for Aethelred II they can only be attributed to either period 3 or period 4 of my periodisation. From Pirie's catalogue, there were moneyers of both listed: Eanred and Fordred or Leofthegn (period 3) and Eardwulf (period 4). Her data does not cross reference to the Fishergate volume (Kemp 1996).

Whilst the re-occupation phase is dated to 800-850 in the Fishergate volume, application of my periodisation alters this. The derivative issue (§2.3.10) recovered from period 3z dates to period 5 (c.859-c.866), suggests later dating for the site, which is supported by a penny of Aethelwulf of Wessex also found at the site (Kemp 1996, 83). Further evidence comes from the Aethelred II coins, which could either date from period 3 (c.850-854) or period 4 (c.854-58). This would concord more closely with the suggestion that the site's re-occupation ended in the 860s.

<b>Fishergate period</b>	<b>Activity</b>	<b>Dating (Kemp 1996)</b>	<b>Coins</b>	<b>Contexts</b>	<b>Revised dating</b>
3c	Re-occupation	800-850	Sf 5607 (Eanred)  Sf 6070 (Aethelred II)	Both from fill 4847 of pit 4868, in pit group 7	860s
3b	Levelling, debris and charcoal	Later-8th to early-9th centuries	Sf 4444 (Aethelred II)  Sf 7672 (Eanred)	Context 3348 – charcoal over  Structure 1 by 3a Context 2457	c.845 – c.859
3a	Anglian trading and industrial site	Late-7th to early-8th and early-9th centuries	n/a	n/a	

*Figure 7.14: Table showing Fishergate periodisation, coin deposits from specific periods, and a proposed revision of site dating.*

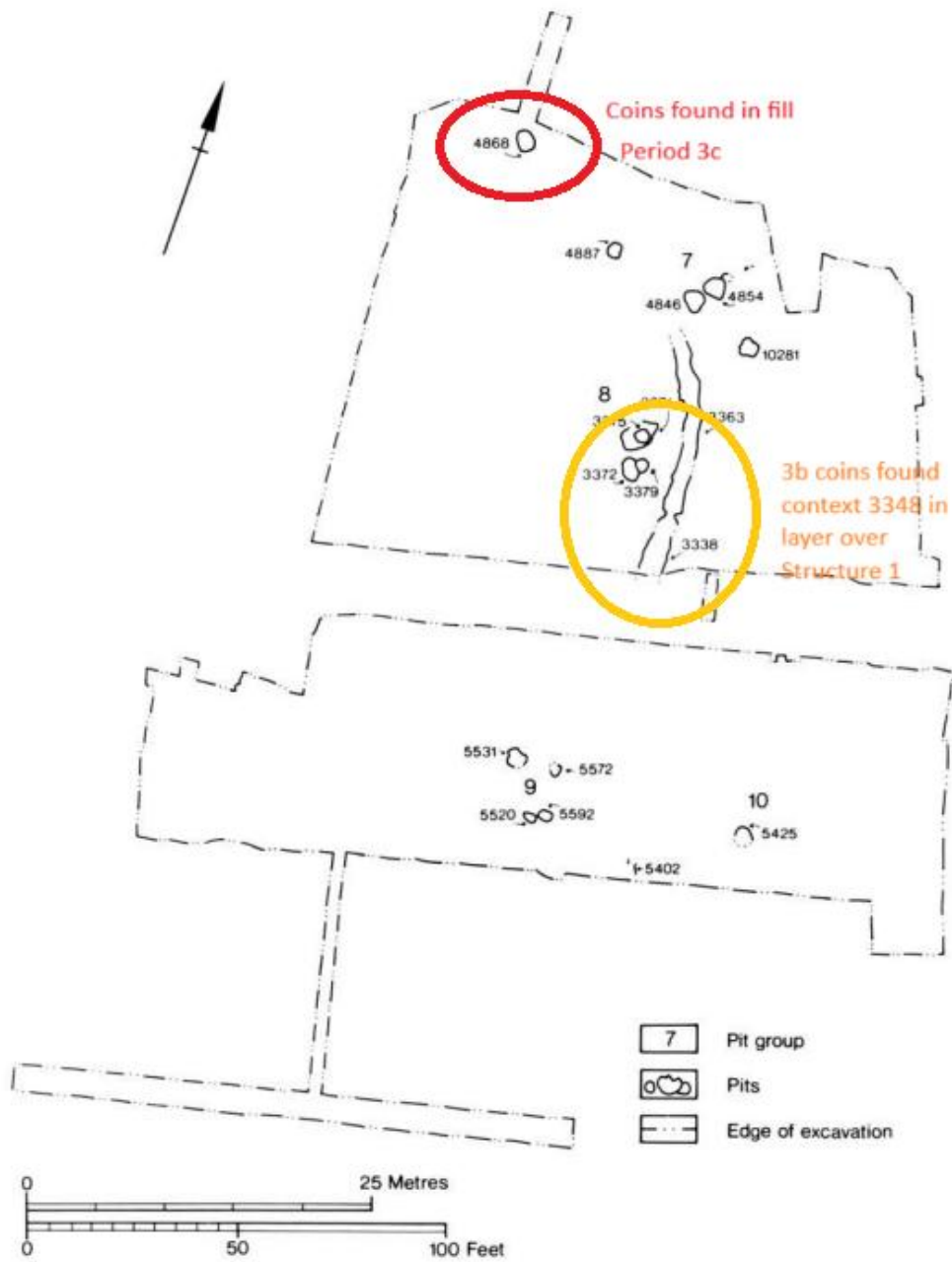


Fig.17 Plan showing location of Period 3c pit groups. Scale 1:500

Figure 7.14: Fishergate site plan showing coins from different periods with their relative contexts, the pit of 3c is cut into the layers of 3b (Kemp 1996, 39).

#### *7.4.6.2. York Minster*

As discussed in §2.3.10, extensive excavations were undertaken at York Minster from 1966 to 1973. Ten Northumbrian copper alloy pennies were excavated as part of the work and were subsequently published with stratigraphic data. They are listed in figure 7.15 along with the site phasing and dating they were associated with. Their spatial distribution is shown in figure 7.16. The two period 1 coins were residual finds in later Norman layers. As at Fishergate, the Minster excavations revealed a deposit of dark soil across the site, from which two coins, one of Eanred and one of Osberht were excavated. Whilst the coins are grouped in two areas of the site, there does not seem to be a chronological dimension to their distribution, with period 5 material in both areas. The site has a higher proportion of coins from period 5 than either the wider York distribution, or Fishergate or Coppergate. Carver (1995, 194–195), in his discussion of early medieval chronology describes how the early medieval “sequencing remains ambiguous”. Three models are proposed – A, B and C, and the coin evidence would support either B or C, since A suggest no activity. Both B and C cite the re-use of the barracks as an industrial area. Barrack 1, in model C is identified as a blacksmith, as is barrack 2 in model B. The Barrack 1 finds are both derivative issues, from the final phase of the coinage. There is also a Carolingian denier of Charles the Bald, from Barrack 2 in phase 6D. This coin was produced from 864 onwards (Pirie and Archibald 1995). Its presence and context is significant as 6D preceded phase 6E, so the two derivative issues either date to the same period, or perhaps slightly later. The 6E context is described as “ashy bands” close to Norman surface (Phillips 1985, 208).

Report no.	Issue	Moneyer	Context	Minster phase	Dating	Period
5	Eanred	Monne	PK254/211, Barrack 3, contubernia	5A/B	9 <sup>th</sup> -century - debris and dark soil	2
6	Aethelred II	Brother	SA 38 C82 principia	6Ai	9 <sup>th</sup> -century - pre-Conquest graveyard	3
7	Aethelred II	Eanwulf	CF35 C66 principia	6Ai	9 <sup>th</sup> -century - pre-Conquest graveyard	4
8	Aethelred II	Eardwulf	SA 57 C87 principia	6Ai	9 <sup>th</sup> -century - pre-Conquest graveyard	4
9	derivative	Odilo	SA18 C79 principia	6Ai	9 <sup>th</sup> -century - pre-Conquest graveyard	5
10	Osberht	Monne	AH I 6a C84 barrack 2, centurion's quarters	6A/B	9 <sup>th</sup> -century - dark soil	5
11	derivative	D	AC34 C61 barrack 1, centurion's quarters	6E	9 <sup>th</sup> -century - exterior to Norman surface	5
12	derivative		AH2 (1a) C81 Barrack 2, centurion's quarters	6E	9 <sup>th</sup> -century	5
4	Eanred	Eaduini	AG73 C47 (I)	Norman or later		1
5	Eanred	Heardwulf	AG73 C47 (I)	Norman or later		1

Figure 7.15: List of York minster Northumbrian pennies alongside contextual information

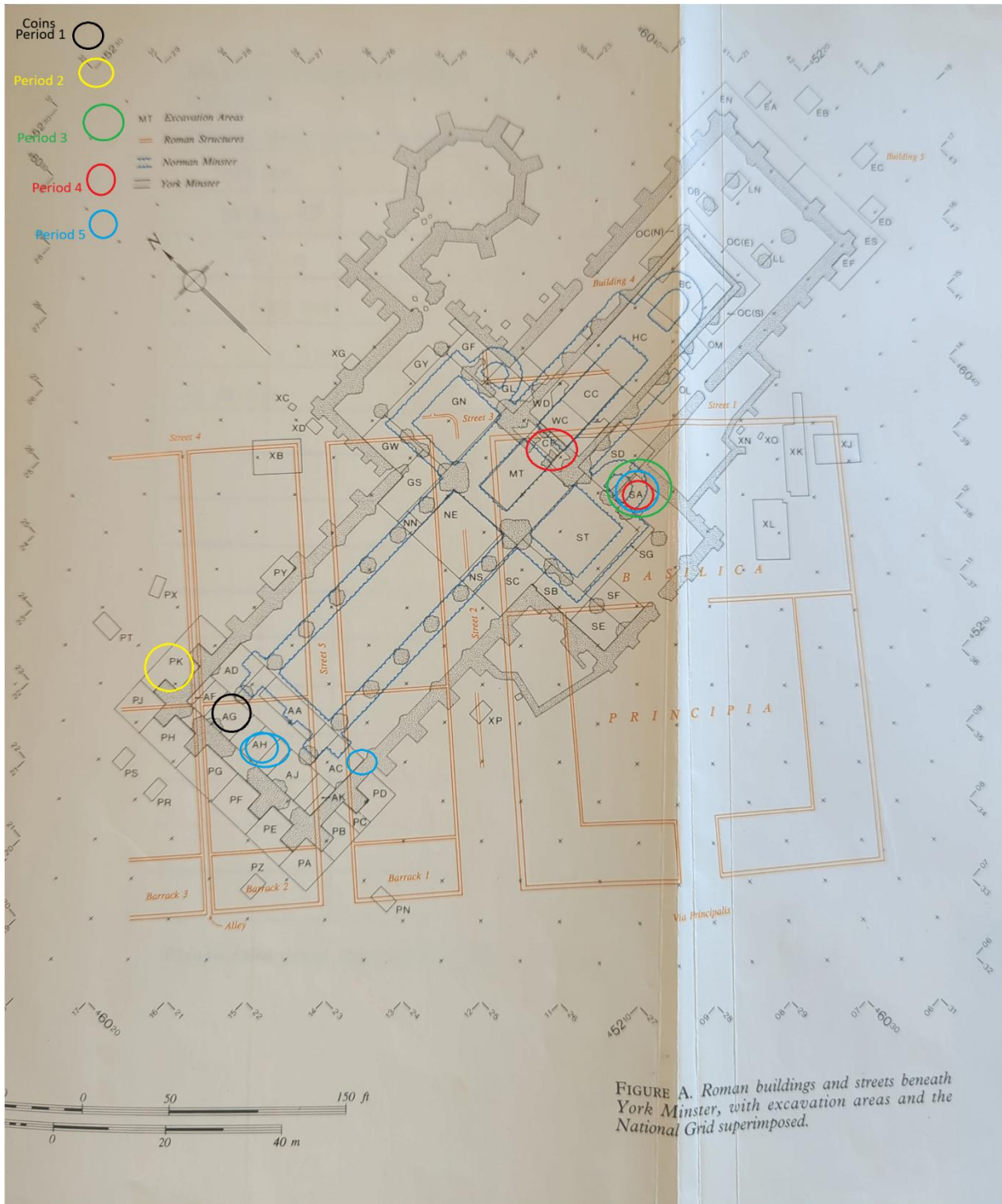


Figure 7.16: York Minster site plan showing coins according to my new periodisation with their relative contexts.

### 7.4.6.3. 16-22 Coppergate

From the assemblage of ten coins from Coppergate, three were from a secure context, whereas the other seven finds are residual. The group gives a snapshot of the coins lost at the site, and figure 7.17 shows their locations. The three finds from a secure context (Copper gate period 3) are coins 19, 25 and 30. They were found from a layer above a fired surface, which was dated to  $860 \pm 20$  (Hall 1986, 17). The archaeomagnetic dating therefore suggests that the three coins could be from a layer dating to up to 880. The three coins date to periods 2, 3 and 4 but as we saw at Torksey and Aldwark, circulation could continue long after striking.

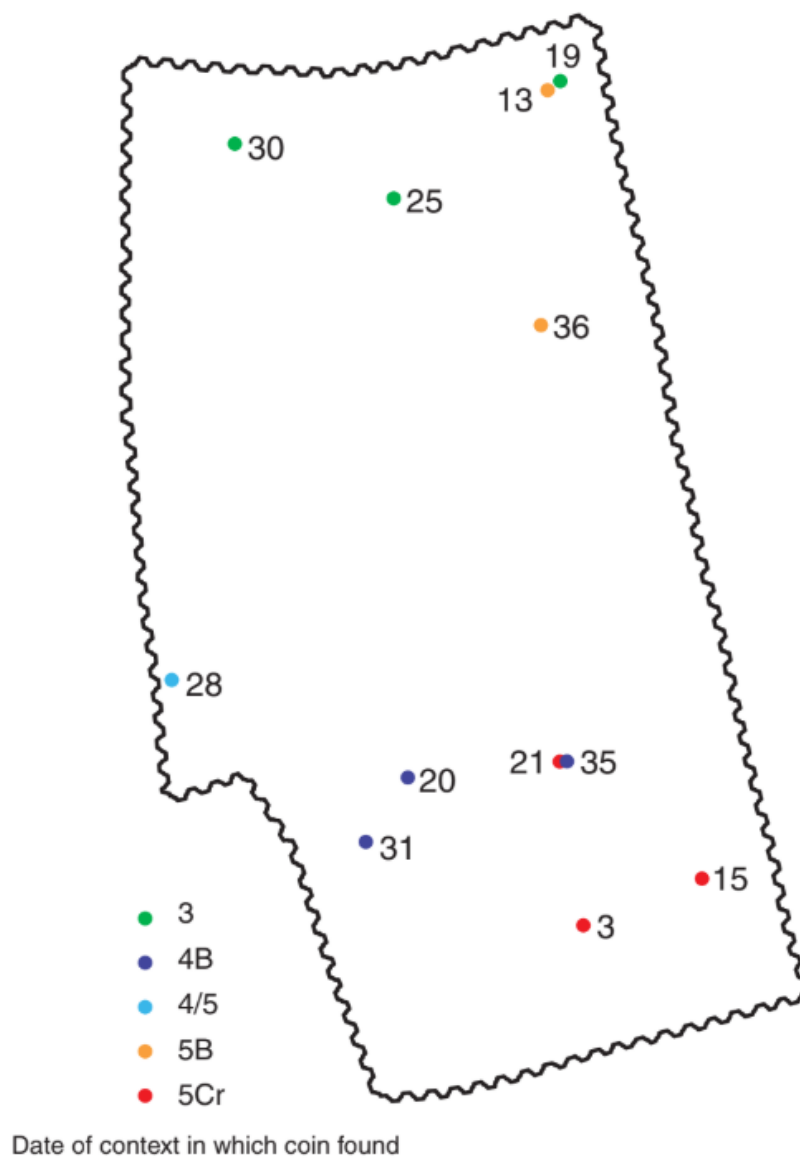
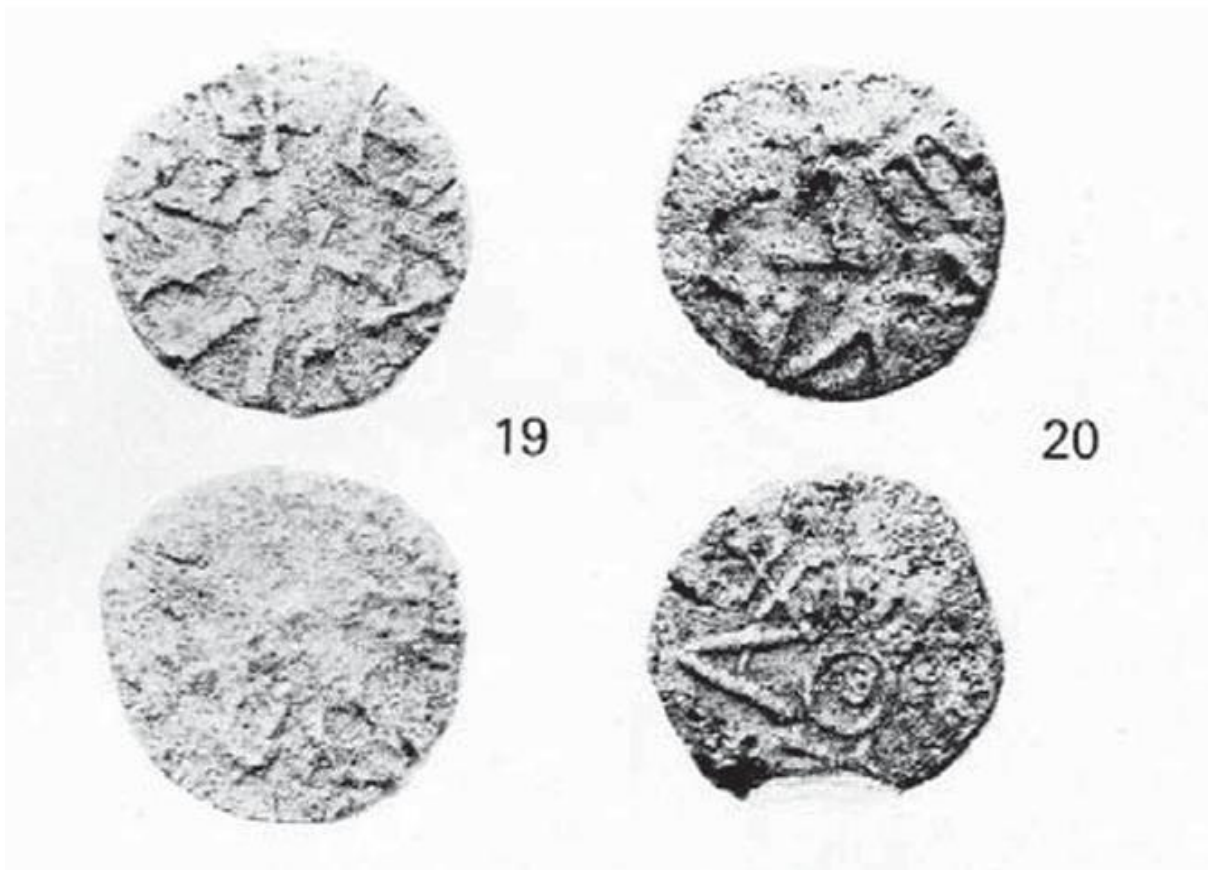


Figure 7.17: Plan of Coppergate showing coin finds (numbered) coded to Coppergate periods. Coppergate period 3 is in green and is discussed above.



*Figure 7.18: two Coppergate coins – left is coin 19 one of the coins from the secure context; right is a coin 20, a coin Pirie described as a “Hexham” type which she read as evidence Bernician influence on the coinage (see chapter 9)*

#### 7.4.2. Carlisle

There are 53 Northumbrian pennies in total excavated from Carlisle, of which 45 can be attributed to a period of production (see §2.3.16). The largest assemblage of material is from Carlisle Cathedral, with most coins excavated in the west end of the cathedral from what was the cemetery. Figures 7.19 to 7.25 show the distribution of findspots of periodised coins across the city in contrast to the unlocalised pattern seen in York. Period 1 coins concentrate to the west, but periods 2, 3 and 4 broaden outwards, whilst period 5 returns to a concentrate on the west side of the city.

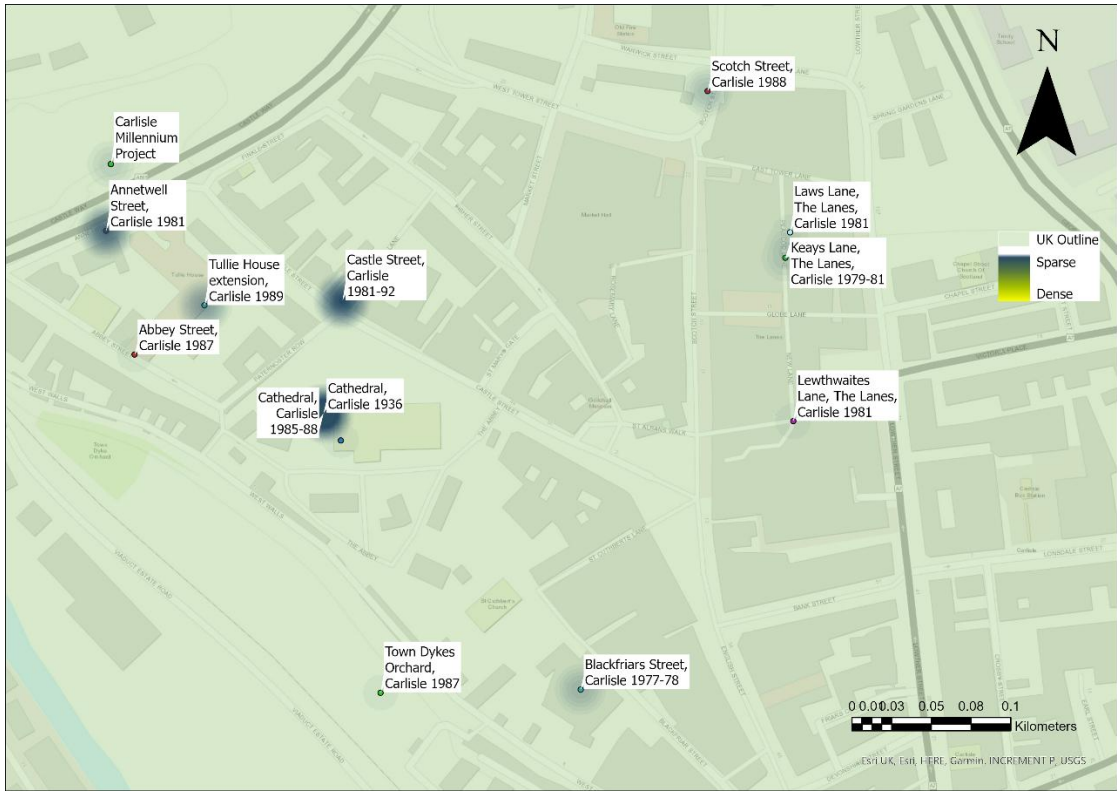


Figure 7.19: Excavations that Northumbrian pennies were recovered from in Carlisle.

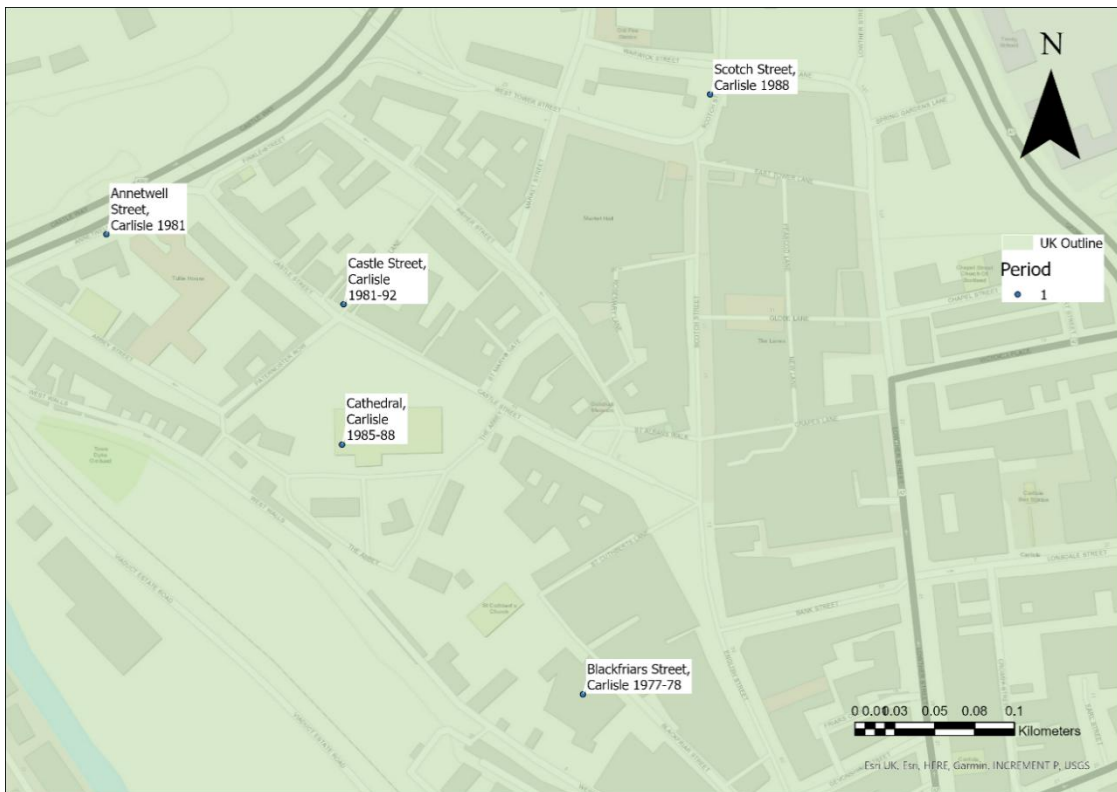


Figure 7.20: Excavations with coins from period 1 in Carlisle

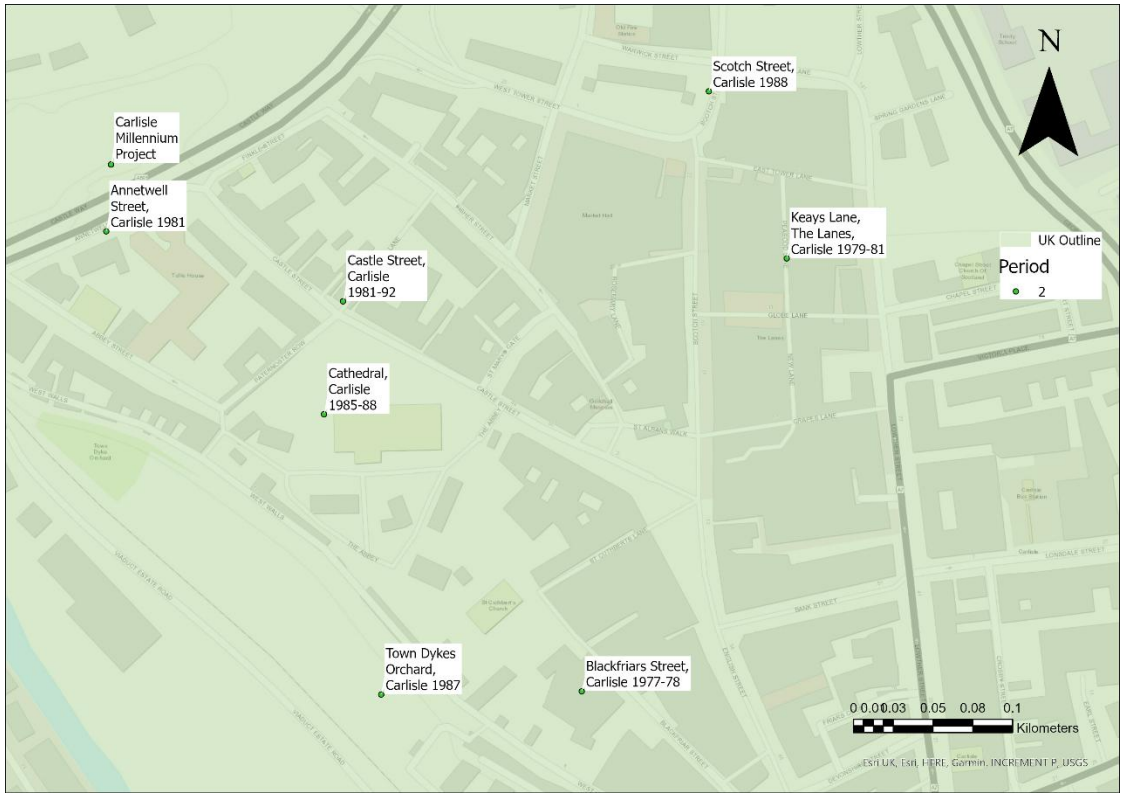


Figure 7.21: excavations with coins from period 2 in Carlisle

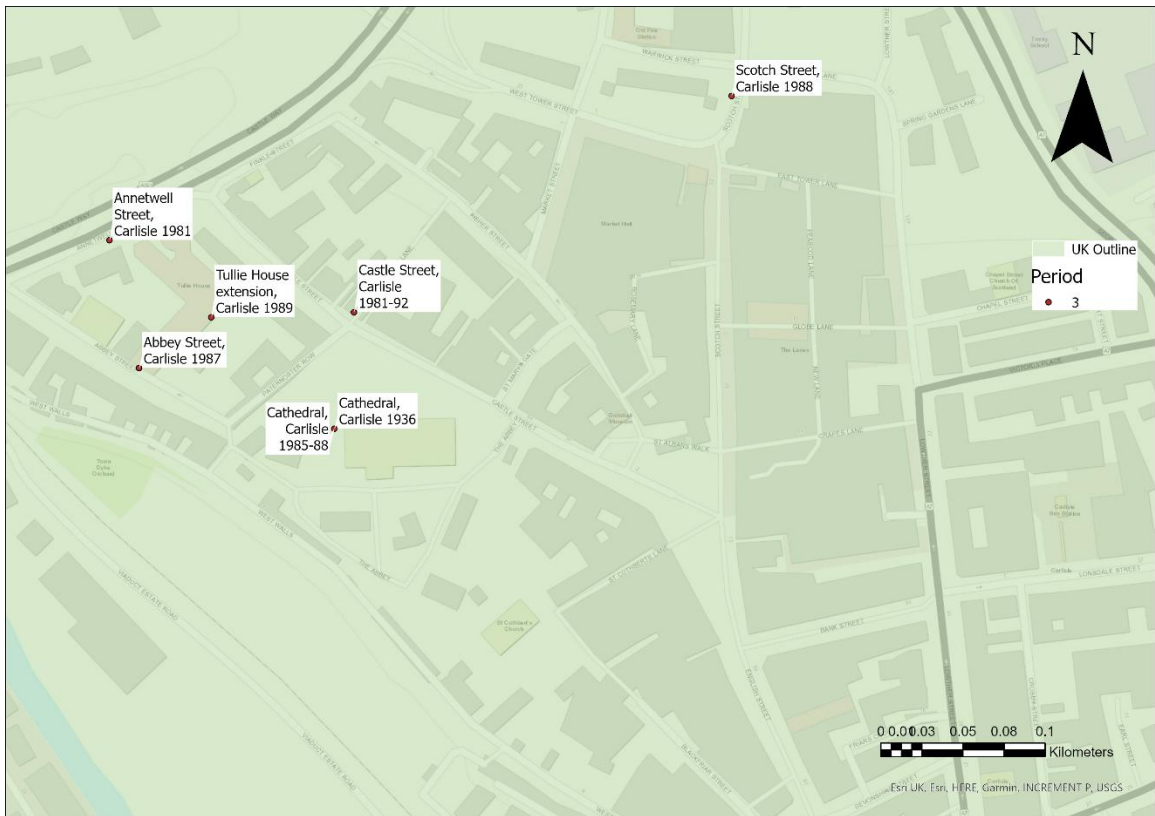


Figure 7.22: excavations with coins from period 3 in Carlisle



Figure 7.23: excavations with coins from period 4 in Carlisle

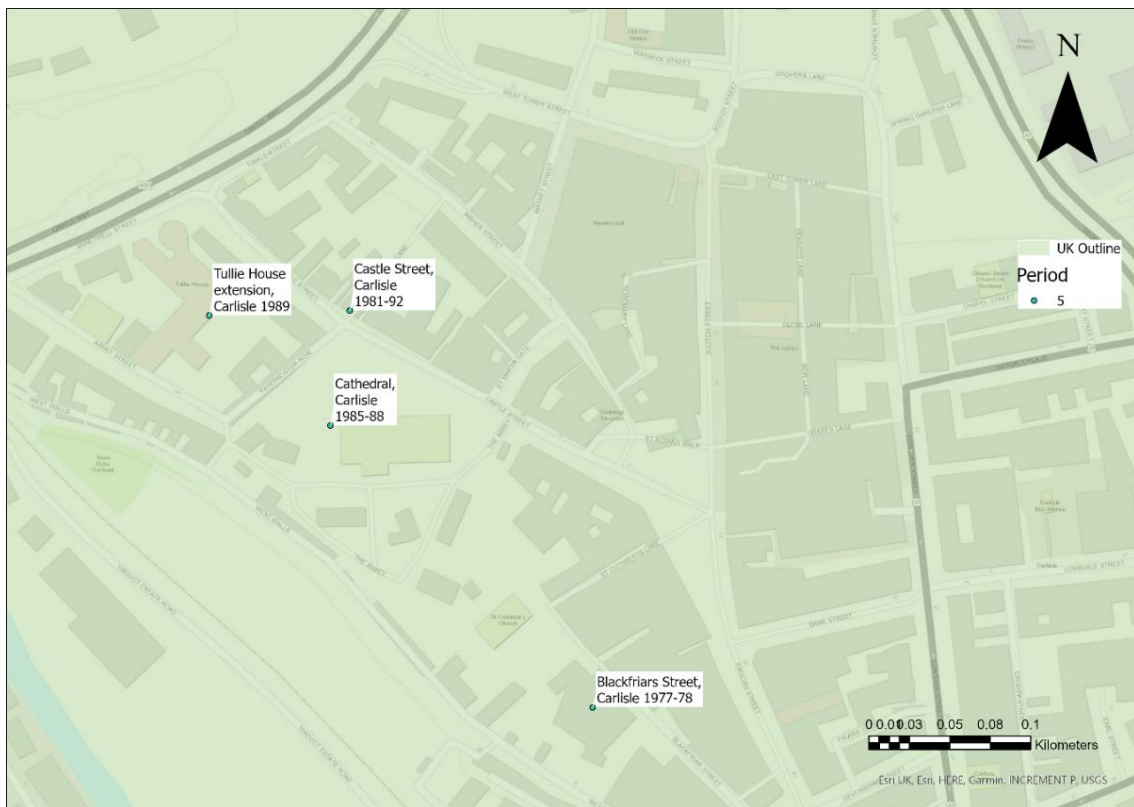


Figure 7.24: excavations with coins from period 5 in Carlisle

Carlisle Cathedral is the site of an earlier monastic foundation, and the area coins were recovered from was later used as an Anglo-Scandinavian cemetery (McCarthy et al. 2014). Comparison with the other major assemblage – close by at Castle Street – is possible (see figures 7.25 and 7.26). These two sites are compared to finds from the rest of Carlisle, using it as a ‘baseline’, and demonstrate the coins from the Cathedral excavation had a higher proportion of period 5 coins than either Castle Street, or the wider city. The two sites are, however, very close to each other; it is not known what the full extent of the ninth-century monastery was. Another comparison in figures 7.27 and 7.28 compares finds from the north-western area (around the Cathedral), with those from the south and east of Carlisle. It continues the correlation with the monastic area and higher numbers of period 5 pennies, but at a reduced rate. Finds from the east are sparser, evidencing sporadic Anglian period trading, in contrast to more focussed coin loss around the monastery

Period	Castle Street		Carlisle Cathedral		Rest of Carlisle	
	No. coins	%	No. coins	%	No. coins	%
1	2	20	1	7	4	16
2	4	40	1	7	10	40
3	3	30	6	40	8	32
4	0	0	3	20	1	4
5	1	10	4	26	2	8
Total	10		15		25	

Figure 7.25: finds of Northumbrian pennies from largest assemblages compared to finds from the rest of Carlisle

Coins from Carlisle Cathedral excavations X Coins from wider excavations in Carlisle

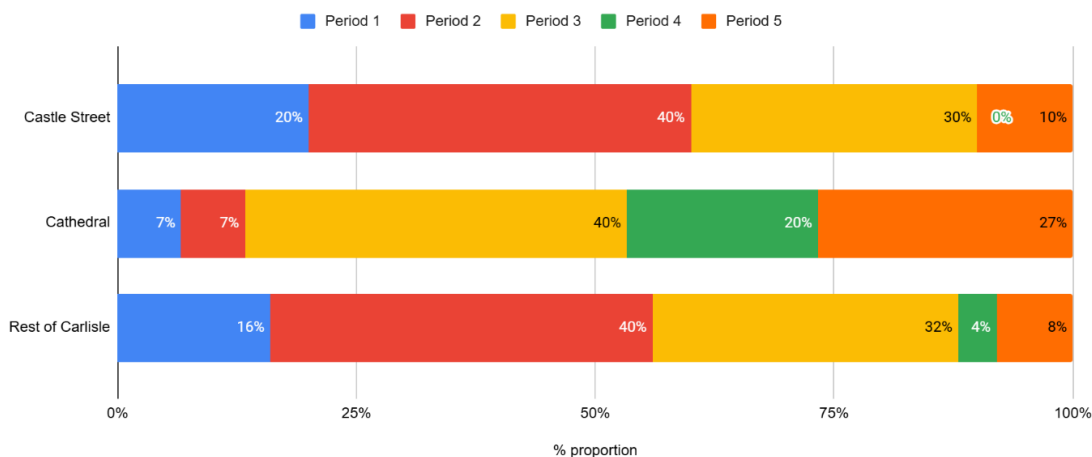


Figure 7.26: Comparison of periodised Northumbrian pennies from Caste Street, Carlisle Cathedral and the rest.

Period	North-west Carlisle		South and east finds	
	No. coins	%	No. coins	%
1	5	12	2	20
2	11	27	5	50
3	15	37	1	10
4	3	7	1	10
5	7	11	1	10
Total	41		10	

Figure 7.27: finds of Northumbrian pennies from the north-west and south and east areas of Carlisle

Comparison of finds from north-western excavations in Carlisle with those in the south and east

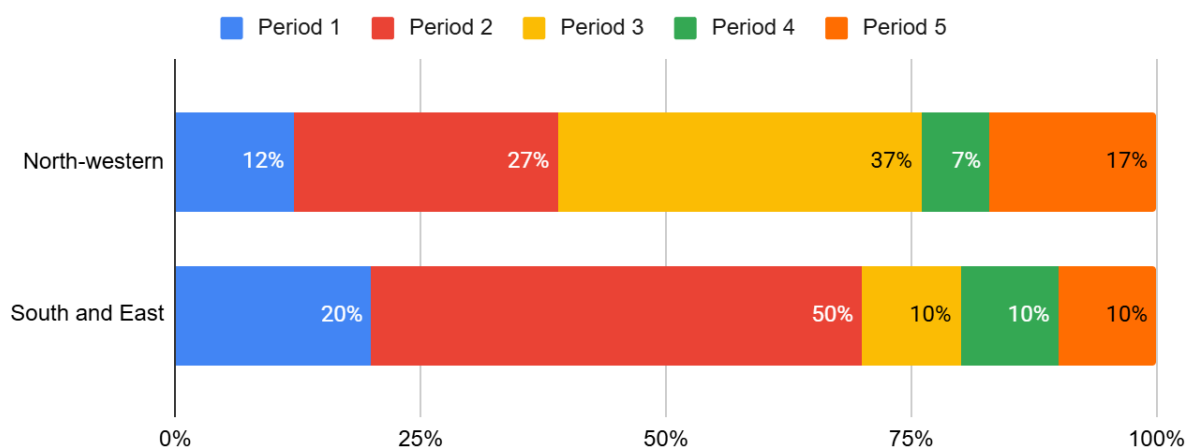


Figure 7.28: Comparison of periodised coins from north-western area around Cathedral and rest of city

### 7.4.3. Tyne and Wear sites

There are four sites in the area that Northumbrian pennies have been excavated from: Jarrow, Monkwearmouth, Newcastle and Tynemouth. These were subject to separate excavations, but are clustered here due to proximity, as well as the fact that Jarrow, Monkwearmouth and Tynemouth were all religious sites.



Figure 7.30: sites in Tyne and Wear that Northumbrian pennies have been excavated from.

7.4.3.1. Monkwearmouth, 1959-86 and Jarrow, 1963-78

As discussed in §2.3.11, whilst Monkwearmouth and Jarrow are geographically separate sites, they were part of the same monastery. Both have small assemblages of Northumbrian pennies, which are periodised and numbers (not proportions) compared in figure 7.31 and 7.32. Their spatial distribution at both sites is shown in figures 7.33 and 7.34. Coin Nu21 is not featured in the figures, since it was highly corroded, and Pirie stated that it was not possible to be positive that it was a Northumbrian penny (Pirie 2005). In contrast to other case studies, it is the absolute number of coins compared here, rather than percentage by period. What we can see is that the assemblages are similar in size, both have two coins dating to period 1. However, Monkwearmouth has three coins dating to period 2 and Jarrow three to period 3. Monkwearmouth additionally has a single coin dating to period 5, which is a Group D derivative issue. Pirie compared the assemblage to others she saw as having a “mid-century” decline, such as Whitby and the Hexham hoard. Whilst that might be true for Jarrow, the period 5 example shows that loss continued at Monkwearmouth. All the coins from

Monkwearmouth are from “graves of cemetery earth” and are from the south side of the church. Coin Nu8 was recovered as a residual find from Saxon rubble used as infill, whereas N10 was found in a sandy early medieval layer. In contrast at Jarrow, the coins were found to the south and south-east of the site and were excavated in association with metal-working materials, including crucibles, as at Bamburgh.

Period	Number of coins, Monkwearmouth	Number of coins, Jarrow
1	2	2
2	3	0
3	0	3
4	0	0
5	1	0
Total	6	5

Figure 7.31: Numbers of Northumbrian coins at Monkwearmouth and Jarrow excavations

### Number of coins by period from Monkwearmouth and Jarrow

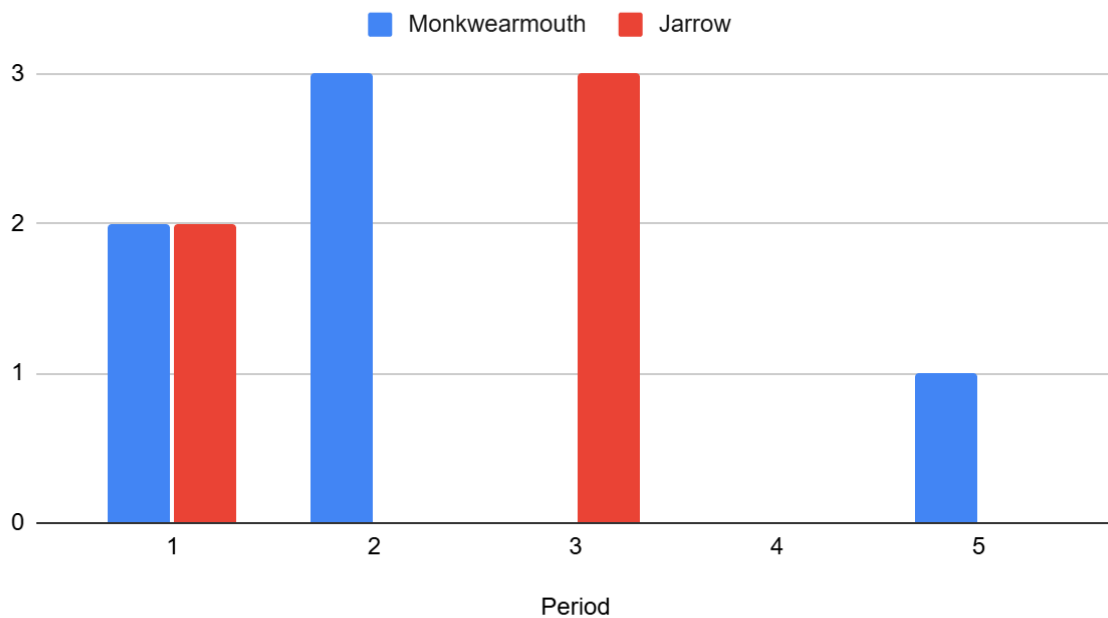


Figure 7.32: Chart of figure 7.31

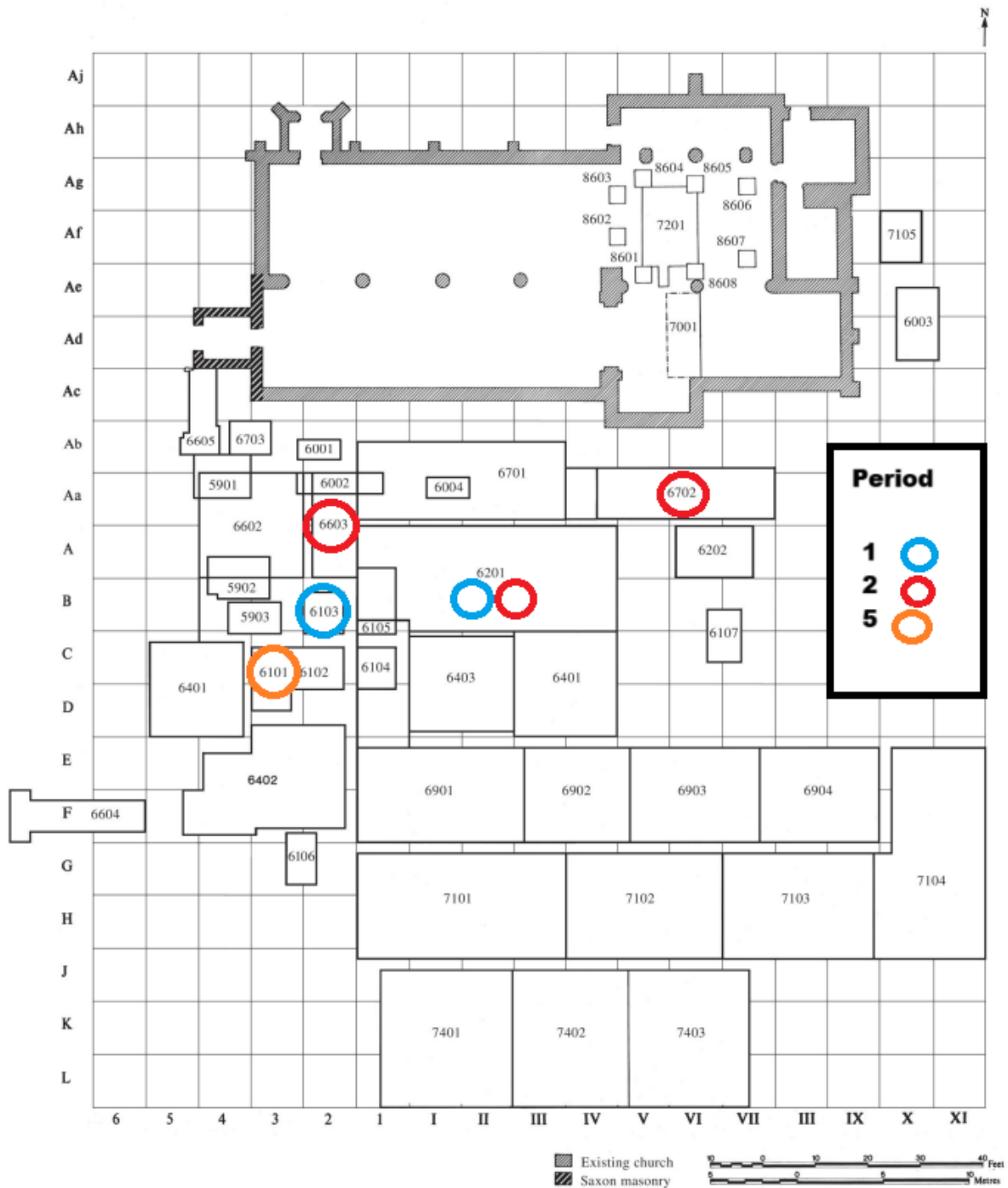


Figure 7.33: Site plan of Monkwearmouth, showing locations of coins according to my periodisation (Cramp 2005)

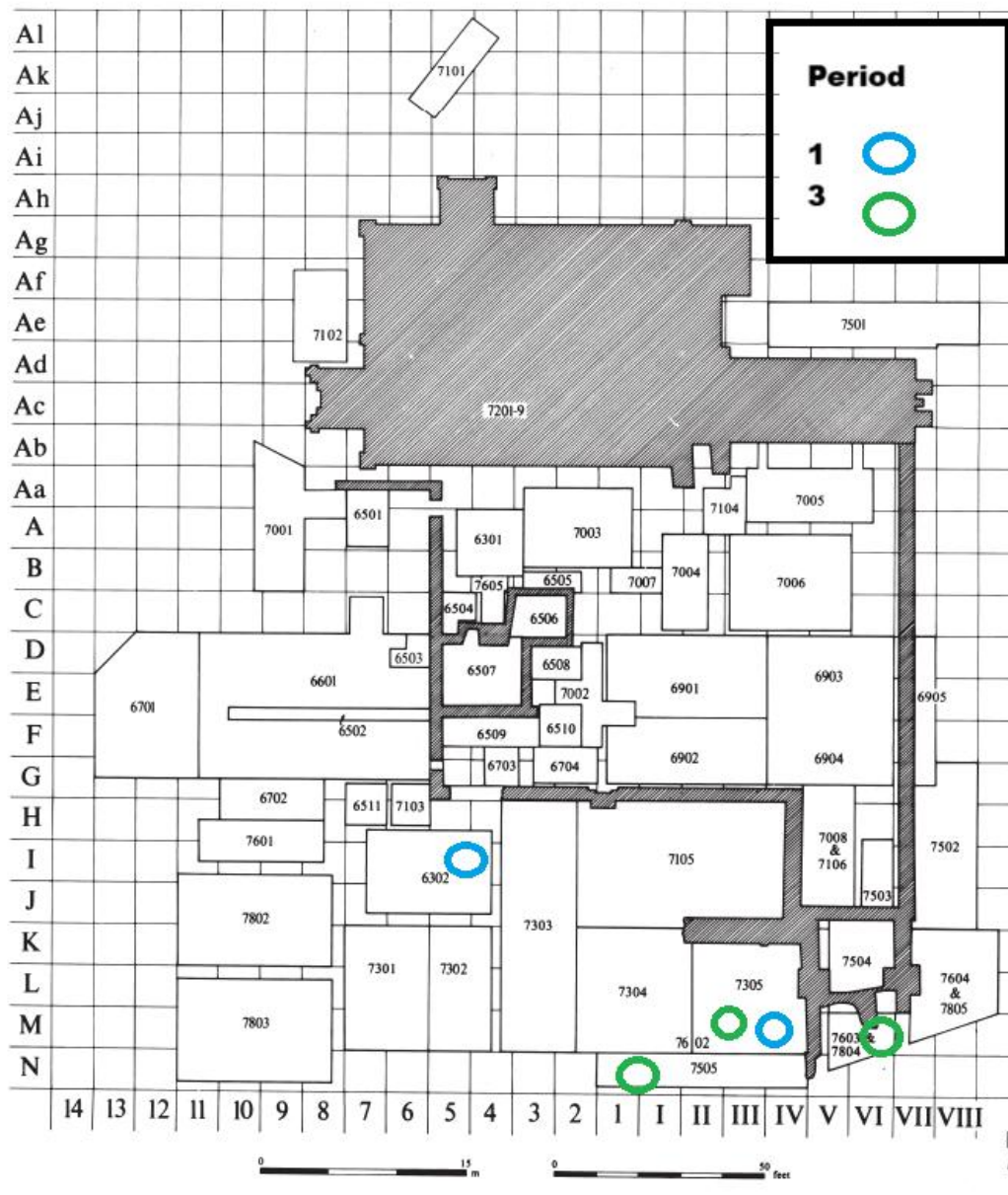


Figure 7.34: Site plan of Jarrow, showing locations of coins according to my periodisation (Cramp 2005)

#### 7.4.3.2. Black Gate (Newcastle), 1977

As discussed in §2.3.12, there are six Northumbrian copper-alloy pennies that were excavated from the site. Figure 7.35 lists these, alongside the trench they were excavated from, and figure 7.36 shows their spatial distribution at the site. For all four excavation contexts much of the stratigraphy had been lost due to later works in the area. For example, for trench RA 25 the stratigraphy for early medieval layers was removed due to levelling done in the nineteenth-century. RA 25 has three pennies from

it, which is the highest concentration of finds for an excavated area at the site. Coins from period 3 are the most widespread across the site. There is one coin from period 5 which was excavated from Area C. This coin came under scrutiny by Pirie who used it to have a broader discussion about derivative issues, suggesting they had expanded at the time of Redwulf's usurpation. She also used the letter forms on this example to tentatively suggest that part of the legend read DVN, which she then suggested might be the record of a placename. Pirie was a proponent of a multiple-mint hypothesis, which in part set her in contrast to the wider numismatic field (see §3.4).

Coin ID	Context	Periodisation
Coin 2	RA 25/101 (Z40)	3
Coin 3	RA 25 (Z60)	4
Coin 4	RA 25/135 (Z45)	2
Coin 5	Compound 149 (Z98)	3
Coin 6	Area D/522 (Z235)	3
Coin 7	Area C/272 (Z222)	5

Figure 7.35: Northumbrian pennies from Black Gate, with contextual information and my periodisation

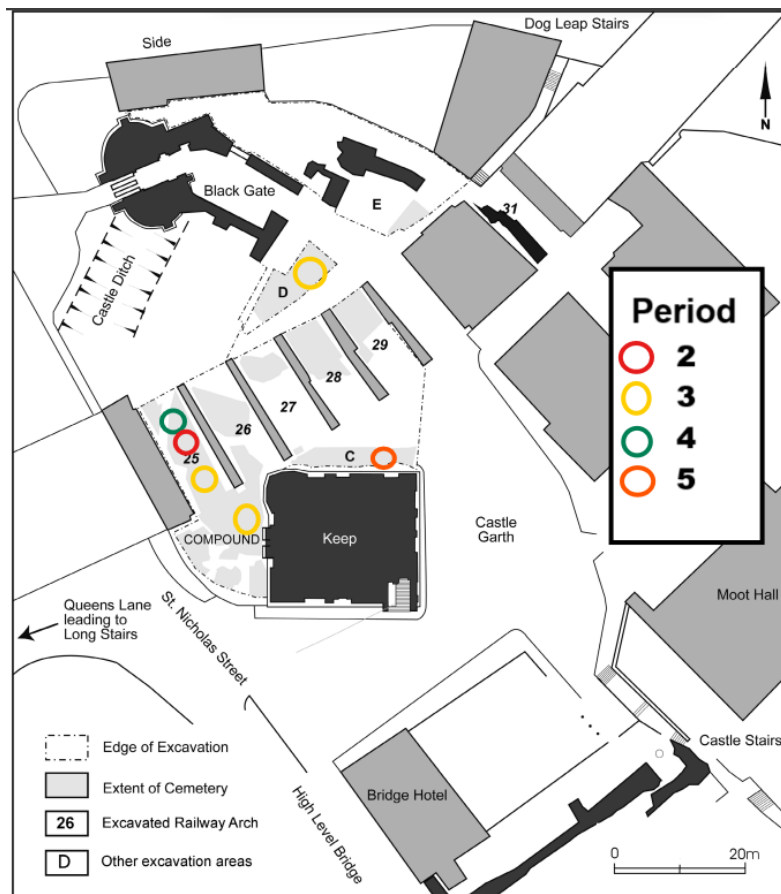


Figure 7.36: Site plan of Black Gate, Newcastle showing approximate locations of coins according to my periodisation.

### 7.4.3.3. Tynemouth, 1963

Tynemouth was a historically attested monastic site in the eighth-century, and the presence of ninth-century stone sculpture is evidence for its continuation. One coin from the period was recovered in the excavations, a copper alloy penny, described in the excavation report as one of Aethelred II's (Jobey 1967). Figure 7.37 shows the approximate area where the coin was found during the removal of mixed earth above the pre-Norman timber building. The period the coin was produced in is uncertain, issues of Aethelred II are found in both period 3 and 4. Pirie (2000, 78) stated that the coin was a derivative issue, which would place it in period 5. Verification was not possible as the coin could not be located. This becomes pertinent when discussing any potential connections with the site and Viking Great Army activity. This was dismissed by Jobey (1967) as of no concern for their interpretation of the site, but recent discussion of Viking presence in Northumberland has brought the connection back into view (Kershaw, 2023).

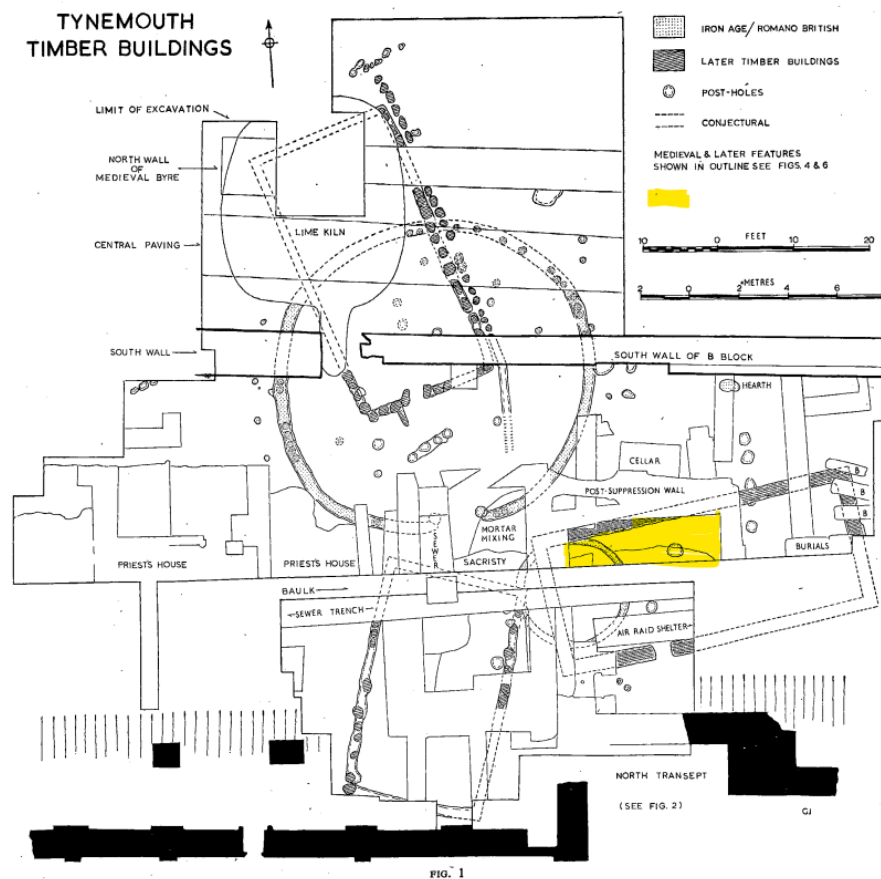


Figure 7.37: Site plan of Tynemouth showing area from which the coin was found.

#### 7.4.4. Whitby Abbey

Whitby Abbey was founded in AD 657 by Abbess Hild. It operated as a double monastery for just over two hundred years, supported by royal power (Blair 2005; Woods 2022). According to Peers and Raleigh Radford (1943, 46) by the third quarter of the ninth century, the abbey was abandoned, and it is suggested that this is the result of repeated Viking raids on the site (discussed in greater detail in Chapter 2). However, there are no such contemporary documented Viking raids on Whitby. William of Malmesbury, wrote in the twelfth century that Whitby was “destroyed ... in the time of the Danes” and later in the text describes how Hexham was attacked by them (William Thomson 2007, 388). The site (figure 7.38) has 184 early medieval coins, one of the largest assemblages of Northumbrian pennies in Britain (Woods 2022). Of the 184 early medieval coins, 130 were produced between c.790 - c.870, of which 112 have sufficient data to periodise. Figure 7.39 shows the number of coins from the site according to period. Figure 7.40 shows the relative proportions of finds of periodised coins from Whitby.

Most of these finds were excavated in the 1920s, but a small number have been excavated since by English Heritage; these are included in Woods (2022). These excavations were unpublished for several decades and have created a legacy of site reports that are challenging, or indeed impossible, to reconcile with objects or other data. Woods (2022) recovered as much of the numismatic data as possible, creating an updated catalogue of coin finds and, significantly, correlating many of these finds to squares used to identify areas excavated in the 1920s. Using Woods’ data, I have been able to isolate finds of Northumbrian copper-alloy pennies and have applied the periodisation developed for this thesis to them. Squares 1-23 lie to the north-west of the abbey ruins; area A lies to the north of the building and is where more precise recording has been more difficult to recover (Woods 2022, 26); areas 25 to 39 lie to the north-east of the Abbey ruins. A site grid was laid out across the area, but not every grid of it was excavated; some of the gaps are therefore “absence of evidence rather than evidence of absence” (Woods pers. com.).

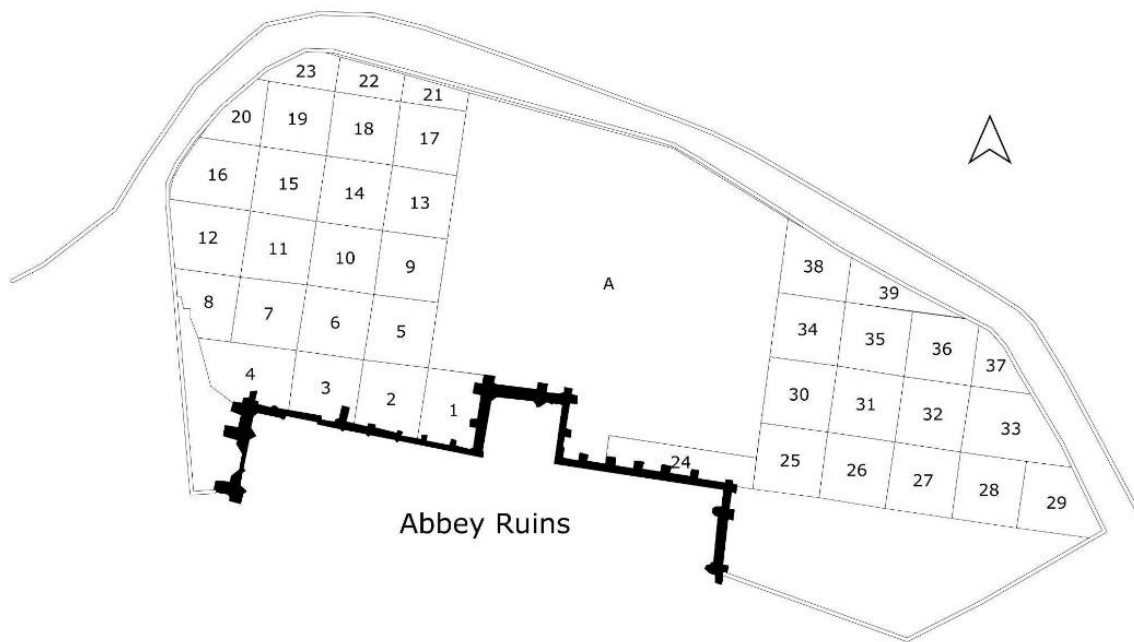


Figure 7.38: Areas excavated in 1920s (Woods 2022), with permission

Period	No. coins	% of identified total
1	12	11%
2	28	25%
3	43	38%
4	12	11%
5	17	15%
Uncertain	18	
<b>Total</b>	<b>130</b>	

Figure 7.39: Coins from the Whitby assemblage according to my periodisation.

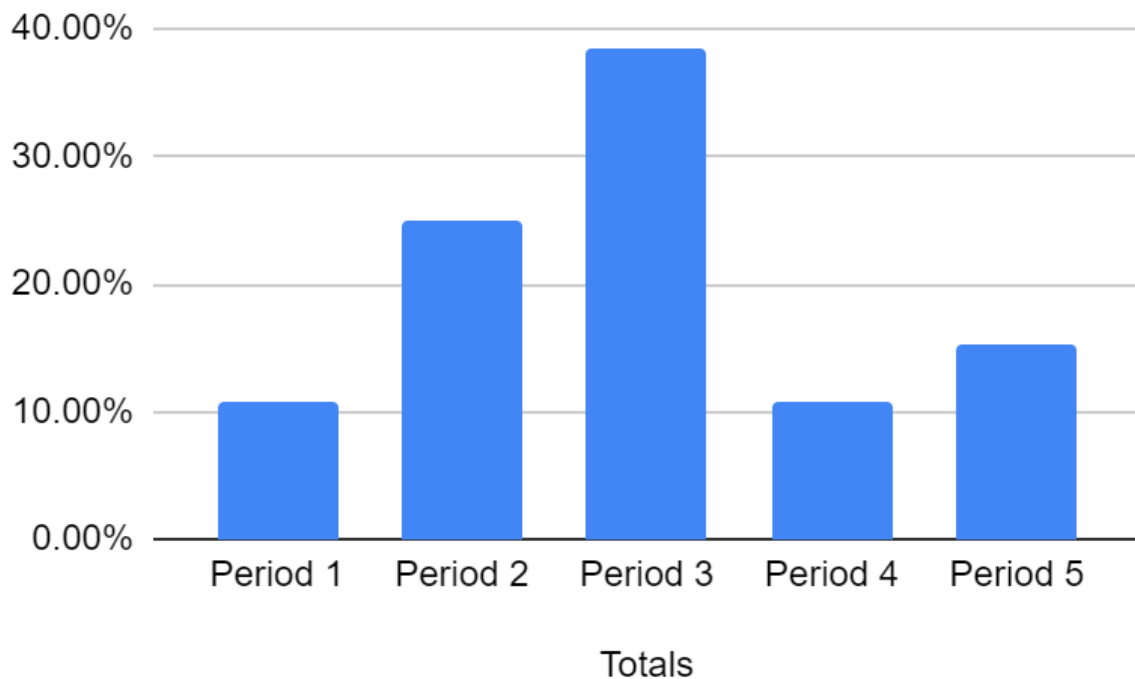


Figure 7.40: Comparison of periods represented at Whitby

Period 1 and period 4 have the lowest number of finds from the site. Period 3 has the largest proportion of finds, followed by period 2 and period 5. The latter comprises exclusively derivative issues, with no issues of Osberht or Wulfhere. Due to the diligent work undertaken to reconcile numismatic data with its excavation contexts, many of these periodised finds can also be attributed to ‘excavation squares’ from the 1920s investigations. Figure 7.41 shows each square and the number of Northumbrian pennies that can be attributed to each, as well as the coins that cannot be attributed to a specific period, which are listed as uncertain. Those that are periodised can be represented proportionally (figure 7.42) and a graphical comparison of these proportions is shown in figure 7.43. It demonstrates that coins from periods 1-3 are found in combination across all the areas that Northumbrian pennies are attributed to, coins from periods 4 and 5 are found more narrowly in excavation areas 1-11 and in area A.

<b>Whitby square</b>	<b>Number /square</b>	<b>Period 1</b>	<b>Period 2</b>	<b>Period 3</b>	<b>Period 4</b>	<b>Period 5</b>	<b>Uncertain</b>
1	3	0	1	1	0	1	0
3	3	0	1	1	0	0	1
4	13	0	3	3	2	3	2
5	4	1	0	1	0	1	1
6	5	2	1	0	0	1	1
7	4	0	1	1	2	0	0
8	5	0	0	3	1	1	0
9	7	1	1	3	0	0	2
10	8	2	1	1	3	1	0
11	2	0	0	0	0	2	0
34	2	0	1	1	0	0	0
35	1	1	0	0	0	0	0
36	1	0	1	0	0	0	0
38	4	1	2	0	0	0	1
39	1	0	1	0	0	0	0
A	23	0	2	15	1	3	2
Total periodised	86					Overall	96

*Figure 7.41 - Whitby excavation squares, with number of coins per period per square*

Whitby square	Period 1 %	Period 2 %	Period 3 %	Period 4 %	Period 5 %
1	0	1.2	1.2	0	1.2
3	0	1.2	1.2	0	0
4	0	9.3	3.5	2.3	3.5
5	1.2	10.5	1.2	0	1.2
6	2.3	1.2	0	0	1.2
7	0	1.2	1.2	2.3	0
8	0	0	3.5	1.2	1.2
9	1.2	1.2	3.5	0	0
10	2.3	1.2	1.2	3.5	1.2
11	0	0	0	0	2.3
34	0	1.2	1.2	0	0
35	1.2	0	0	0	0
36	0	1.2	0	0	0
38	1.2	2.3	0	0	0
39	0	1.2	0	0	0
A	0	2.3	17.4	1.2	3.5

Figure 7.42 - Proportion of coins per period per excavation square

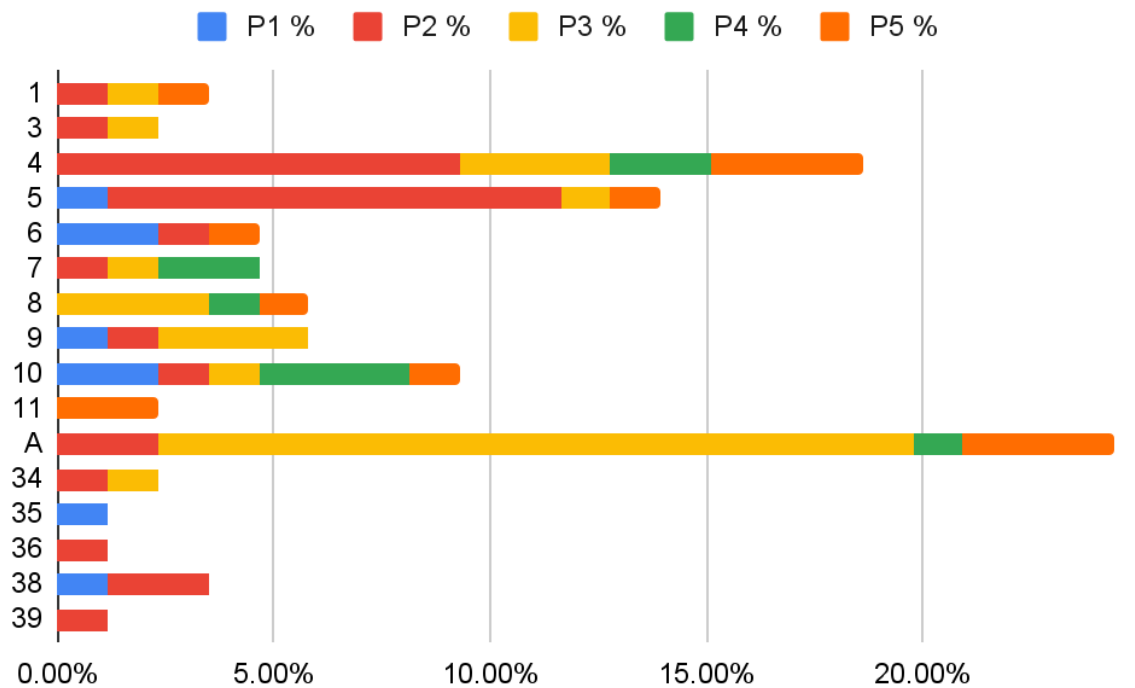


Figure 7.43: showing the proportions of coins per period per excavation square at Whitby

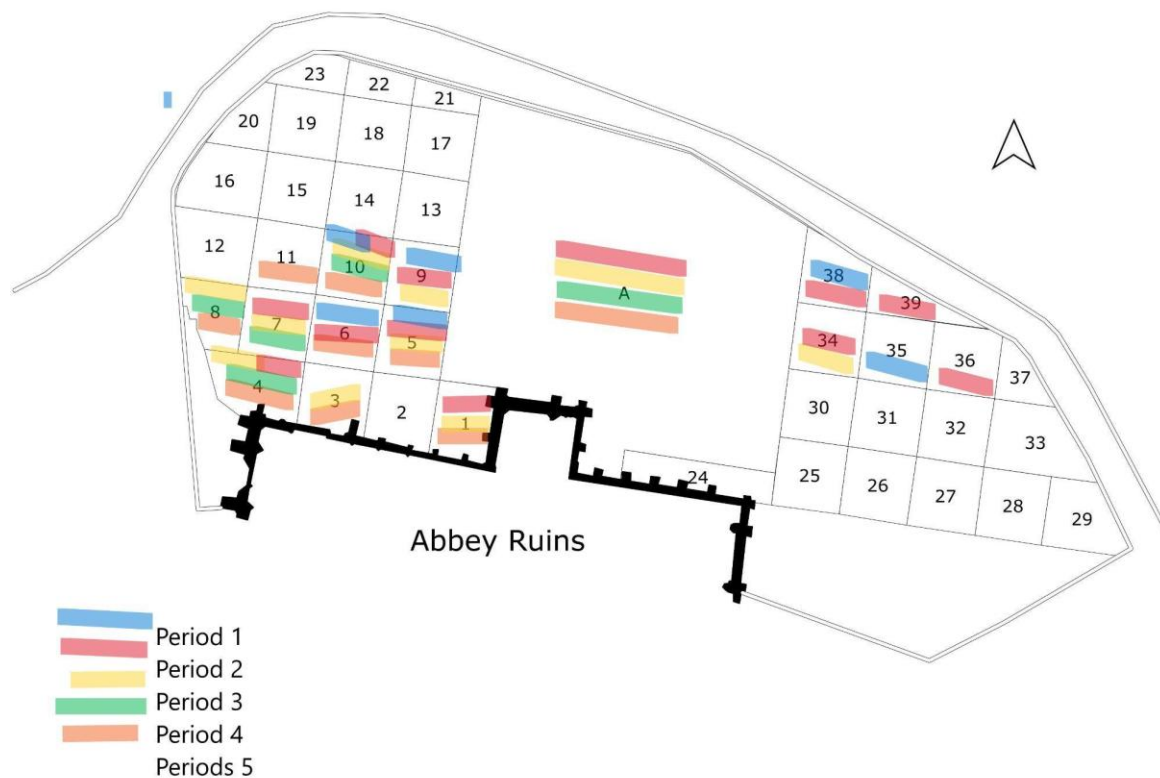


Figure 7.44: each coloured stripes demonstrates presence of coins from which period in each excavation square

Three of the 1920s excavation areas have higher concentrations of Northumbrian pennies than others — area 4 with 13 pennies, and areas 9 and 10 with 7 and 8 pennies respectively. The average is 5.3 coins per square. For the periodised coins, the average number found in each square with finds in it, is 5.1. Area 4 is also the area with the highest total of coin finds overall. The period 5 issues are all derivative types and are summarised in figure 7.45. Whilst coins from periods 1 to 4 are found across the area of excavation, coin finds dating to period 5 are only found to the west, in excavation squares 1, 4, 5, 6, 8, 10, 11 and A. The latter covers an area that finds are known from but cannot be more closely attributed. The area to the east of excavation square A features coins attributed to the chronologically earlier periods of 1, 2 and 3. This pattern shows a concentration of coin loss from later periods to the north-west of the abbey site, with excavation square 4 having the highest concentration of period 5 issues (patterning discussed below).

Wilmott (2017) suggests that the early medieval church is beneath the foundations of the later churches on the site. It is also clear from excavations there that activity in this area extended to the north and that much has been lost due to coastal erosion (Wilmott 2017, 85–86). Woods (2022) suggests that the proximity of the finds to the abbey suggests that they may be connected to monetary exchange associated with the work of the church, from the submission of tax to almsgiving. If this is so, then perhaps the pattern of coin loss shows an area of exchange concentrated more closely to the west of the excavated site over time.

Examination of all sixteen derivative issues, not just the ten associated with an excavation square, and their Pirie groups, shows that Group Dii are more numerous than Group Di (see figure 7.45). Analysis of spatial distribution is limited by the lack of contextual information for coins from Group Di, since half can be attributed to a grid square. Of the ten coins that can be attributed to Group Dii, they are spread across seven squares. Comparison with other sites, over proportion of Di and Dii and their spatial distribution will be made in chapter 9.

<b>Pirie Group</b>	<b>Total no. derivative issues</b>	<b>Excavation squares attributed to with no. coins in</b>
Di	6	4 (1), A (2)
Dii	10	1 (1), 4 (2), 6 (1), 8 (1), 10 (1), 11 (1), A (1)

*Figure 7.45: shows total number of derivatives in assemblage, plus, where known the number of each coin per excavation square, based on data from Woods (2022).*

#### 7.4.5. Whithorn Priory

Whithorn Priory is a monastic site in present-day Dumfries & Galloway that was established by the mid-sixth century as a church surrounded by a residential area (Blair 2005, 28). By the mid-ninth century it was a significant religious community within the kingdom of Northumbria. (Chapter 2 discusses the history of the site and the phases of excavation in detail.) Excavation undertaken in the 1980s recovered an assemblage of 51 copper-alloy Northumbrian pennies, part of a wider corpus of 65 early medieval coins from the site (Hill 1997). The number of coins within my periodisation and the proportion in the assemblage are listed in figures 7.46 and 7.47. They show that for the

excavated area of the site, the highest proportion of Northumbrian pennies are from period 1, followed by period 3. This suggests that coins were lost in higher volumes for the earlier periods than later ones.

Period	No. coins	% proportion
1	22	42.3%
2	9	17.3%
3	16	30.8%
4	2	3.9%
5	3	5.8%
total	52	

Figure 7.46: lists the number of coins per period at Whithorn and their relative quantities

### % proportion vs Period

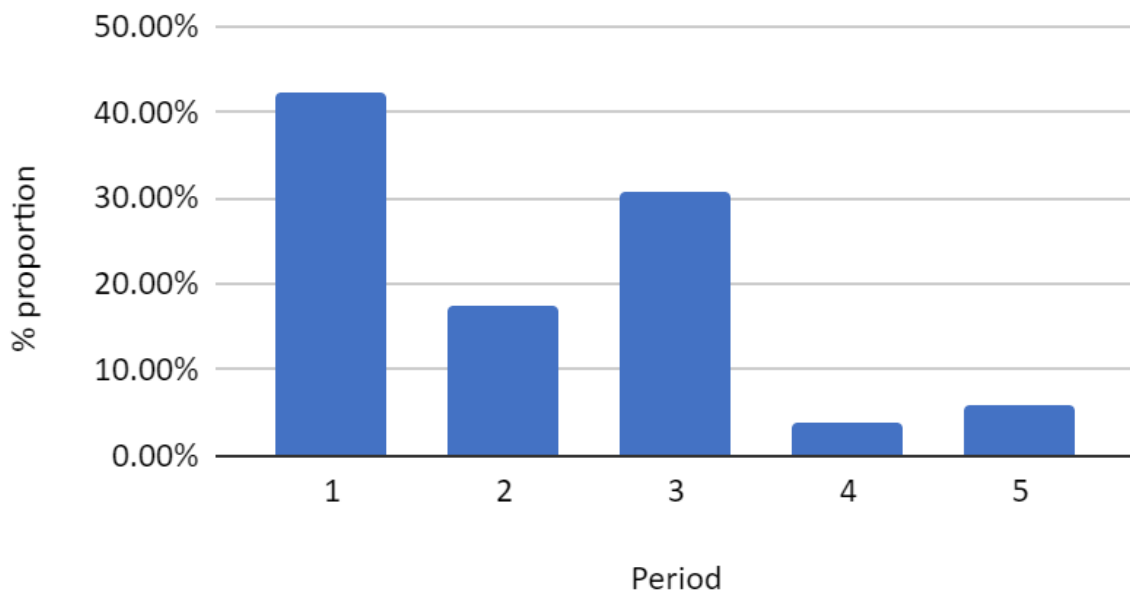


Figure 7.47 shows the proportions of coins per period present at Whithorn overall

According to Pirie (1997, 332) the contextual information for the coins “varies from the precise to the profoundly obscure”; whether this is because Pirie didn’t have access to the site report is uncertain, however she neither cites it in her 1997 work, nor in 2000 (Pirie 2000). Nevertheless, 38 of the coins from the site can be attributed Hill’s site chronology and to Phase II (730 - 845) and Phase III (845 -1000). These phases are

arrived at by Hill due to the presence of a burnt layer across the site, which seals part of the coin assemblage; the dates of which are then used to date the phases.

Hill uses Northumbrian coinage to support theories for the dating of these contexts at Whithorn, stating that “the chronology of this period depends on the stratified coins ... [which are] intrinsically problematical” (Hill 1997, 40). Since the potential use of Northumbrian pennies stretches across both the Hill Phases, I was interested to see if the profile of the proportions of coins from contexts attributed to each Phase remained similar or contained differences. Data for this, as well as unstratified material, is outlined in figure 7.48. The relative proportion of coins for Phase II and Phase III are shown in figure 7.49; there are 28 coins attributed to Phase II and 10 to Phase III. The distribution of coins from each period within Whithorn phases II and II are shown in figure 7.50.

Phase	Block	Info	No. coins / context	No. coins / period				
				1	2	3	4	5
Phase II	250.03	Large clay puddling pit (PII/4, EF)	2	1	0	0	1	0
	303	Rubbish spread near terrace (PII/4.7, B)	17	13	4	0	0	0
	315.01	Burnt debris in church (PII/7, AL)	4	0	0	3	0	1
	315.02	Floor and burnt debris (PII/7, AL)	1	1	0	0	0	0
	316	Building III/1 (PII/1, AL)	1	0	0	1	0	0
	320	Pits in church (PII late, AL)	3	0	2	1	0	0
Phase III	339.02	Wormed soil over burnt debris to south chapel (PIII/1.1,E)	1	0	0	1	0	0
	399.03	Mid 9th C ploughing, east part central sector (PIII/1.2,B)	1	0	0	0	0	1
	404	Fragmentary paving ?building (PIII/B)	1	0	0	1	0	0
	408.01	Museum garden: burnt debris over 326 [pit + gullies] (ph I)	2	0	0	2	0	0
	422.04	Burnt debris between buildings III/5 and III/6 and in III/4	1	0	0	0	0	1
	423.04	?? not listed ?? mistake??	1	0	0	1	0	0
	424	Ground surface and shallow pits (PIV.1,G)	1	0	0	0	1	0
	454	Building III/22 (PIII/2.3,K)	1	0	1	0	0	0
	478	Building III/3 (PIII/1.2,E)	1	0	1	0	0	0
Unstratified and unphased	743	Backfill previous excavations (PVI/3, GK)	5	4	1	0	0	0
	758.03	Museum garden: roadway surfaces, charnel pit and infant burial (ph.3.3)	1	0	0	1	0	0
	901	Unstratified general	3	2	0	1	0	0
	903	Finds from spoil ?some known	2	1	0	1	0	0
	904	Finds from area, but no context	2	0	0	2	0	0
		Totals	51	22	9	15	2	3

Figure 7.48: lists Whithorn's chronological phases, with each context that contains Northumbrian pennies, and the number of those present periodised

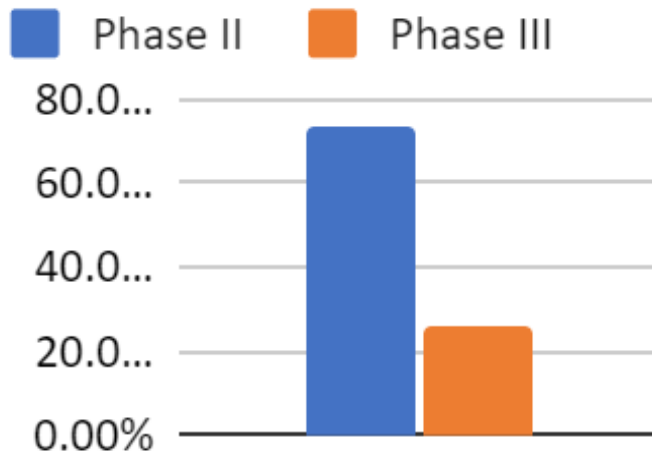


Figure 7.49: shows the relative proportions of Northumbrian pennies from Phases II and III at Whithorn

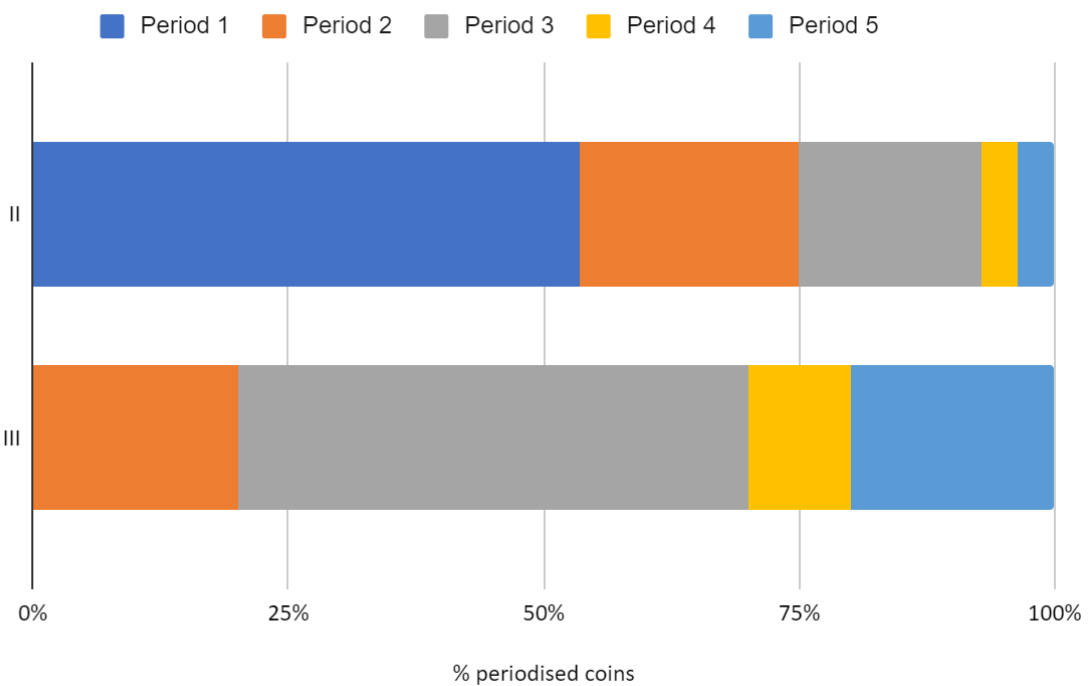


Figure 7.50: shows the relative proportions of coins from each period, per Whithorn phase

Figures 7.49 and 7.50 demonstrate that my periodisation holds when tested on archaeologically phased data (here, Phases II and III). It shows that these periods can demonstrate the difference in circulating currency in the early ninth and mid-ninth centuries. Period 1 coins are only found in Phase II contexts, but coins from each of the other periods are found in both Phase II and Phase III. Between Phase II and Phase III,

the buildings at Whithorn were burnt down, and the numismatic evidence has been previously used to date this destruction to c.845.

However, by implementing the revised dating for my periodisation, the latest coin deposited in Phase II, a derivative from Group Di (CN02.60), is likely to have been issued post 859, moving the potential date of the fire forward. The threshold between the phases, published by Hill is c.845; this reappraisal of the coin assemblage could shift this to date to c.859. In the report Hill gave multiple scenarios which could have brought a devastating fire to Whithorn (Hill 1997, 21). One of which was that civil war related to the usurpation of the Northumbrian throne by Redwulf caused unrest which precipitated conditions for the catastrophe. This cannot be supported: the Di coin dates to c.859 and even with revised dates for Redwulf's reign to c.854, this precedes the derivative production by several years. Another suggestion was raiding by Kenneth mac Alpin (c.841-858), which may be supported by the coin evidence more clearly.

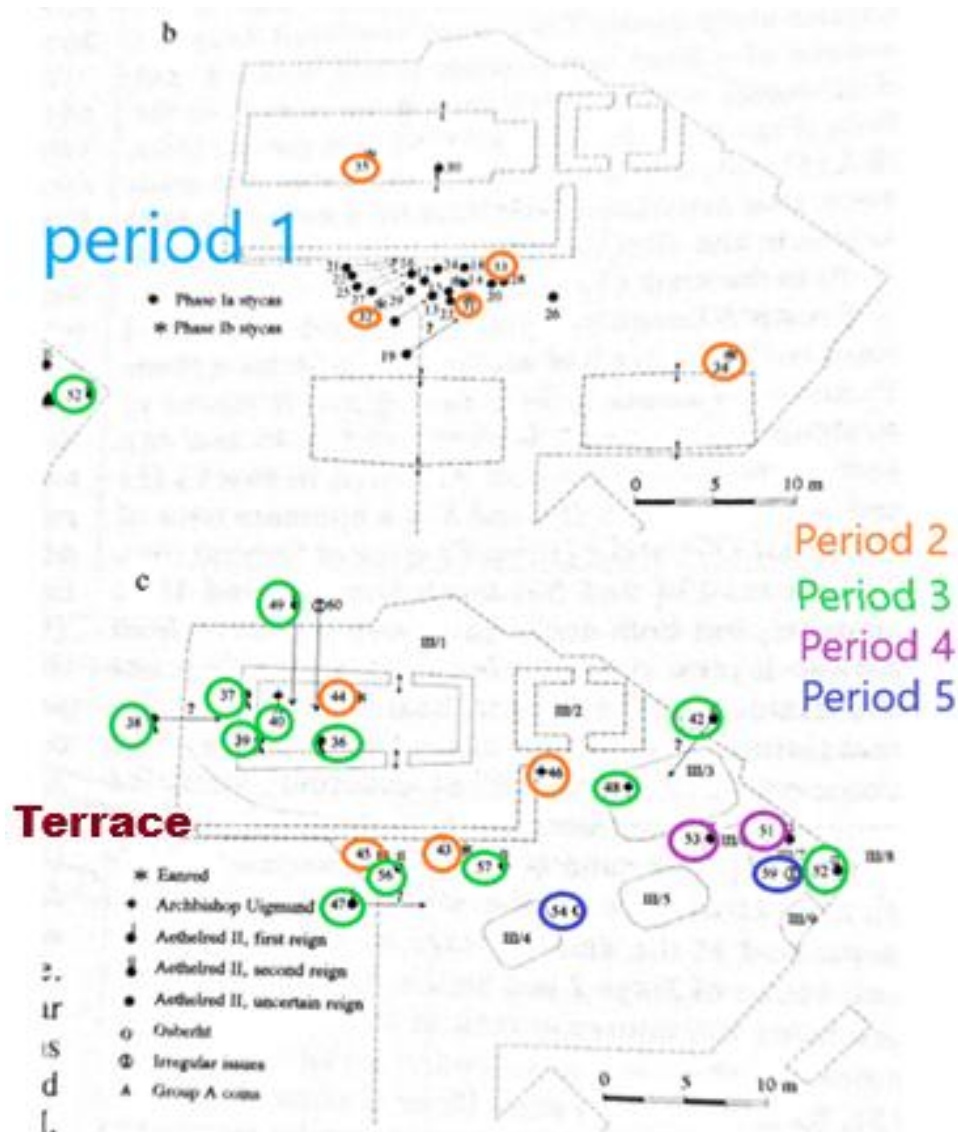


Figure 7.51: shows with coloured circles where coins from each period are located

Examining the spatial distribution of Northumbrian pennies at Whithorn, based on my new periodisation, shows that there were changes across time in the locations where coins from specific periods were lost. This is shown in figure 7.51 above. Here, following diagrams in Hill (1997), each number is circled in a colour that corresponds with a Northumbrian penny period (apart from period 1 where they are all clustered too close together). The plan in the upper half of figure 7.51 reflects the church in the early ninth century (Phase II), and the bottom in the mid-ninth century on (Phase III). It shows how most coins from period 1 cluster very closely to the terrace wall, outside the church precinct, although there are a small number of period 2 coins, and a coin from each of period 1 and 2 is found inside the church. Coins from periods 2, 3, 4 and 5 are spread

more widely across the church, the inner precinct and the area to the south of the terrace. Coins from the later periods of production have been lost to the east of the central area, rather than within or closer to the church. Interpreting this potential shift is somewhat problematic as Northumbria had a long circulation. The Phase III coins might show a shift (as at Whitby) in where exchange took place, or these finds may be circumstantial.

#### 7.4.6. Dacre, Cumbria

Two of the five coins were excavated from secure contexts to the east of Site 2, whilst the other three are from either hill wash, or unstratified contexts to the west (Newman, Howard-Davis and Leech 2022, 50–51). The five coins are described in figure 7.52. Although Pirie described coin 5 as an issue of Aethelred II with Monne, she also describes it as an ‘irregular’; in TSS it is identified to Group Dii (Pirie 2000, 73), so is in period 5. For coin 6, Pirie linked the dies used to stroke multiple times to those used for coin 5, so it is also period 5. The two unstratified coins were also from the west of the site. Despite the small number of finds from the site, it appears that earlier coins of period 2 were lost towards the east of the trench, whilst later ones lost to the west. This is similar to the assemblage at Whitby, although the attribution more circumspect due to the small number of finds.

Dacre no.	Coin (with published dating)	Context	Periodisation
1	Eanred/ Hwaetred c.810-c.841	Site 2, 1235, upper cemetery	2
3	Wigmund/ Aethelweard c.837 – c.854	Site 2, 1238	2
4	Aethelred II/Eanwulf c.844-8	Site 2, 89, hillwash	4
5	Aethelred II/Monne (‘irregular’ issue)	Site 2, 162, unstratified	5
6	Described by Pirie as a “complete freak” – it appears to be a coin that has been struck several times	Site 2, 162, unstratified	5

Figure 7.52: Northumbrian copper alloy coins from Dacre

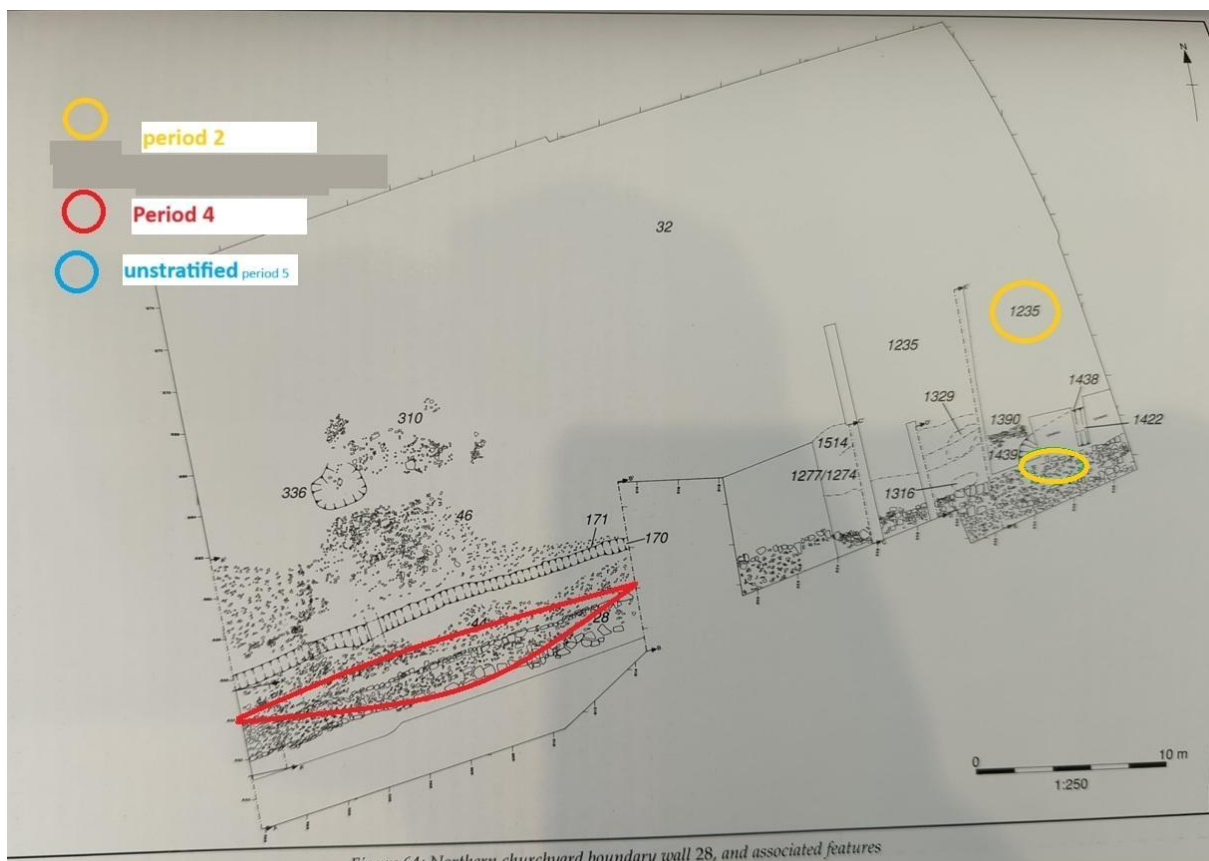


Figure 7.53: Periodised coins and approximate locations of stratified finds at Dacre

### 7.4.7. Flixborough

Excavations between 1989 and 1991 at Flixborough, Lincolnshire revealed a settlement dating from the seventh to the fourteenth century, remarkable for the wealth and status represented by the assemblage (see chapter 2). Understanding the stratification of the site is complex, as the site went through several reconfigurations resulting in multiple layers of redeposited material, particularly refuse material. Whilst metal detection of spoil added many finds to the assemblage, the resulting finds are not stratified. This means that for many finds, including those of Northumbrian pennies, assigning them to a secure context is not possible.

There are 67 coins from Flixborough that date from the seventh to the tenth centuries; of these 27 are Northumbrian copper-alloy pennies (Archibald et al. 2009, 402). The coins can be attributed to three of the five periods used in this thesis: Period 2, Period 3 and Period 5 (see figure 7.54). There are no silver Northumbrian issues from the late eighth or early ninth century (Period 1), nor are there any issues of Aethelred II attributed to Period 4). They are shown in their relative proportions in figure 7.55. There are two series Y Northumbrian sceattas represented, dating to 737-758. All the issues in Period 5 are derivatives, with no coins of Osberht or Archbishop Wulfhere present. This is like the period 5 assemblage from Whitby, although at Flixborough period 5 makes up a higher proportion of the assemblage than at Whitby. These period 5 derivative issues comprise 18 pennies, which were attributed to Groups Di and Dii (Pirie 2009, 413) and their relative proportions are in figure 7.56 and 7.57.

Period	No.	Proportion
1	0	0%
2	4	15%
3	5	19%
4	0	0%
5	18	67%

Figure 7.54: Number of coins from Flixborough by periodisation

## Proportion

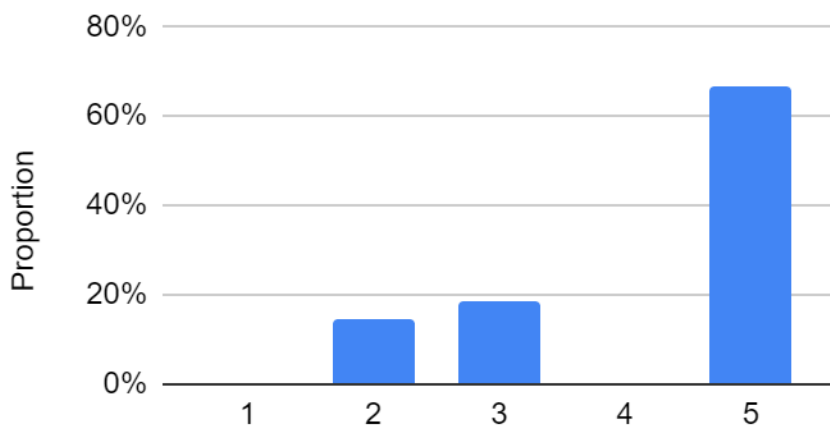


Figure 7.55: Relative proportions of coins from Flixborough by period

Derivative group	Number	Proportion
Di	11	61%
Dii	7	39%

Figure 7.56: Number of derivative issues from Flixborough

## Proportion

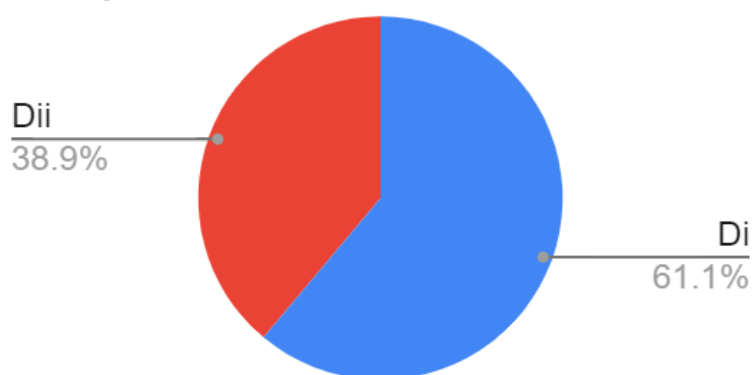


Figure 7.57: Chart comparing derivative issues from Groups Di and Dii

Unlike Whitby and Whithorn, finds of Northumbrian pennies are largely not associated with specific contexts. There are in fact only three coins that can be closely associated

with a specific context: finds 3241, 3263 and 3264. Find 3241 is a Period 2 penny of Eanred with moneyer Eaduini which was recovered from context 7280 from Phase 6ii dating to the late ninth to early tenth centuries (Loveluck 2007, 103). Context 7280 is from section 34 of the backfilled foundation trenches of building 12. Loveluck (2007, 106) describes this coin as “undoubtedly residual”, however he describes how finds of an unstratified silver ingot, lead weights in conical, tubular and discoid forms and a West Saxon penny of Alfred the great were also recovered from the phase (Loveluck 2007, 106). An ingot, a silver penny, a copper-alloy Northumbrian penny and lead weights could be interpreted here as potential clues to the presence of members of the Viking Great Army.

Find 3263 was recovered from context 1462 attributed to Phase 6iii at Flixborough. Gridded squares were used to segment the ‘dark soil’ that characterised southeast of the site in this phase. Recovered from gridded square PP, the coin is a Group Dii derivative issue. Deposits in this area were significantly reworked, with finds dating from mid-tenth to eleventh centuries, aggregating finds that may reflect earlier phases of the site, as well as later. Some eighth and ninth-century finds were recovered from 6iii, including hooked tags, strap ends, pins and a silver penny of Aethelwulf of Wessex. Later finds, such as a penny of Henry III also intruded into this phase (Loveluck 2007, 110).

Find 3264 was recovered from context 6472 attributed to Phases 5b to 6i. The context is a large refuse spread, cut by the later construction of building 32 (Loveluck 2007, 92). Other finds from here include a seventh century hanging bowl fragment and silver chain-linked pins (Loveluck 2007, 95). The approximate locations of these three coins are shown in figure 7.58. All three occur to the east of the site but given the lack of contextual data for the finds, significance should not be inferred from this.

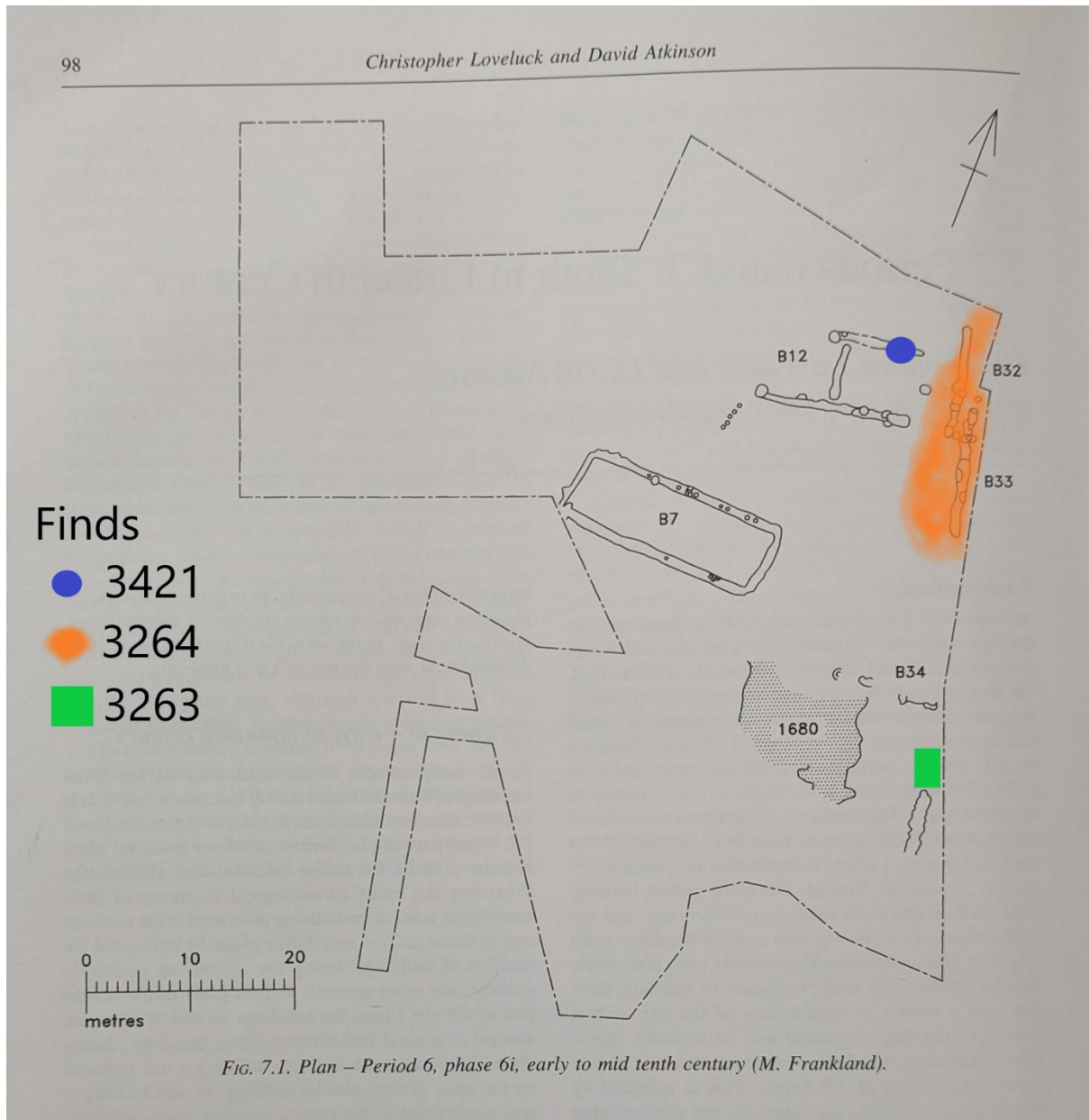


Figure 7.58: Plan of Flixborough – areas from which coins from secure contexts were excavated are highlighted.

#### 7.4.8. Beverley

Excavations at Lurk Lane, Beverley, East Yorkshire, took place from 1979 to 1982 to better understand the area to the southeast of Beverley Minster in an area identified for development. This resulted in the discovery of early medieval sequences of land management and settlement activity, linked to an early religious foundation, characterised in the resulting publication as Period II - phases 2-4 (Armstrong et al. 1991). The end of phase 4a in the mid-ninth century was marked by the concealment of

a hoard of 23 Northumbrian pennies, found in a hollow in an elevated bank next to a cobbled path, contained in a (likely) leather purse (Armstrong et al. 1991, 13). Phase 4b is characterised as a transition era after the abandonment of the site, where ditches filled up and scrub grew over the area. The hoard’s concealment was dated to soon after 850. However, the hoard isn’t the only context from which Northumbrian pennies have been recovered. There are four further excavated examples from the site, all found in later contexts. One derivative issue was found in phase 5b, dated in the publication to the mid to late eleventh century; three further Northumbrian pennies were found in Phase 6 or 6a, dating to late eleventh century. One of the latter coins was a silver issue of Aethelred I of Northumbria. These are interpreted as intrusive finds to those contexts, potentially made by extensive “earth-moving operations” at this time.

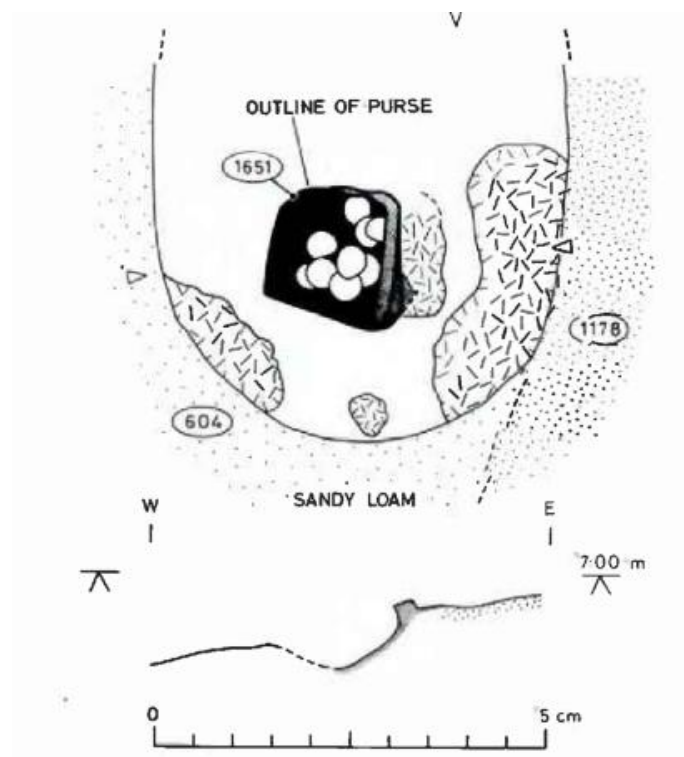


Figure 7.59: Shows the excavation context of the coin hoard (Armstrong, Tomlinson and Evans 1991)

<b>Authority</b>	<b>Moneyer</b>	<b>Object number</b>	<b>Exc v. hoard?</b>	<b>Phase</b>	<b>Context no.</b>
Aethelred I	Tidwulf	869	Excavated	6a	986
Aethelred II	Eardwulf	870	Excavated	6A	942
Osberht	Monne	871	Excavated	6	966
Derivative		872	Excavated	5b	1034

Figure 7.60: Excavated coin finds from Beverley

Analysis of the coins from the hoard, and those that were excavated from later contexts shows an assemblage of material where derivative material dating from period 5 makes up over half the assemblage (see figure 7.61). Apart from the silver issue, the additional four coins do not adjust the proportions of coins from the site, suggesting that they are typical of the types in circulation in Beverley at the time (see figure 7.62).

<b>Period</b>	<b>No. coins</b>		<b>Proportion</b>	
	<b>Whole site</b>	<b>Hoard</b>	<b>Site %</b>	<b>Hoard %</b>
1	1	0	4%	0%
2	5	5	19%	22%
3	5	5	19%	22%
4	2	1	7%	4%
5	14	12	52%	52%
<b>Totals</b>	<b>27</b>	<b>23</b>		

Figure 7.61: Numbers and percentages of coin finds from Beverley by period

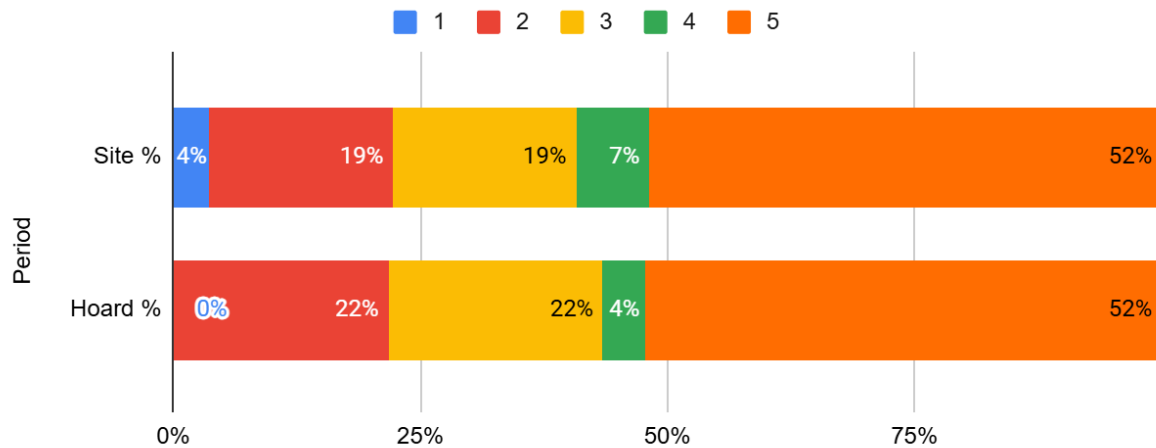


Figure 7.62: Comparison of the proportions of excavated and hoard finds at Beverley

Dating the end of Phase 4a was ultimately prescribed by the understanding of the chronology of Northumbrian coinage. They concluded that although that a Viking raid in 866 was locally attested, it could have not taken place at the time as the hoard’s concealment likely dated to 850. My reconsideration and re-periodisation of the numismatic chronology determines that Period 5 dates from 859-867, shifting the date of concealment of the hoard forward to 860 at the earliest; this is based on the presence of a derivative issue that references Osberht as ruler, but is not an official type. Presumably, even if official issues were made on behalf of Osberht in 859, time would need to elapse before supplementary issues could be created. This revised date, could therefore support a date in the 860s for the destruction of the site by Vikings.

#### 7.4.9. Bamburgh Castle

As discussed in §2.3.8 the lack of published data from the range of excavations at Bamburgh Castle presents challenges. The Bamburgh Research Project (BRP) team have been generous in sharing the data they do have relating to the coins from both the Hope-Taylor data, as well as a preliminary catalogue and some images. However, the coins in the catalogue are not yet identified, nor can the catalogue numbering be reconciled to the image file names. Further research is required but was outside the remit of this thesis. For the purposes of this case study, the only coin data that can be used is that recorded by Pirie (2000). According to the BRP team there are 241

Northumbrian pennies excavated from the site, excluding the excavated hoard (Young 2025). Whilst the coins are not yet identified, contextual information is recorded in detail, as such this will be a strong basis for future work. In this section I compare Pirie’s data on some of the coins from the Hope-Taylor excavations alongside the excavated hoard; two further metal-detected hoards from the area are discussed in §8.2.2.9 and §8.2.2.16 Whilst the data does show distinct differences, some caution should be taken: the images used to identify the Bamburgh Castle hoard were very low resolution, so it was not possible to make detailed identifications for derivative issues.

Figure 7.63 gives the data for finds of identified pennies and figure 7.64 compares the proportions of periodised finds of Northumbrian pennies from the two assemblages. Neither of the assemblages have any period 1 material; both have material from period 5, although in differing proportions. The two hoards have similar profiles, but the excavated Hope-Taylor material has the lower proportions periods 2 and 3 and the highest proportions of material from 4 and 5, suggesting that coins continued to be lost at the site after the concealment of the hoard. However, this suggestion is made in the absence of archaeological context for these finds.

Period	<b>Bamburgh Castle hoard</b>		<b>West Ward, Hope-Taylor excavations (Pirie 2000)</b>	
	No.	Proportion %	No.	Proportion %
1	0	0%	0	0%
2	7	11%	4	7%
3	28	44%	17	30%
4	6	10%	11	19%
5	22	35%	25	44%

Figure 7.63: Comparison of Bamburgh Castle hoard and excavated coins from West Ward

## Comparison of excavated coins with hoard

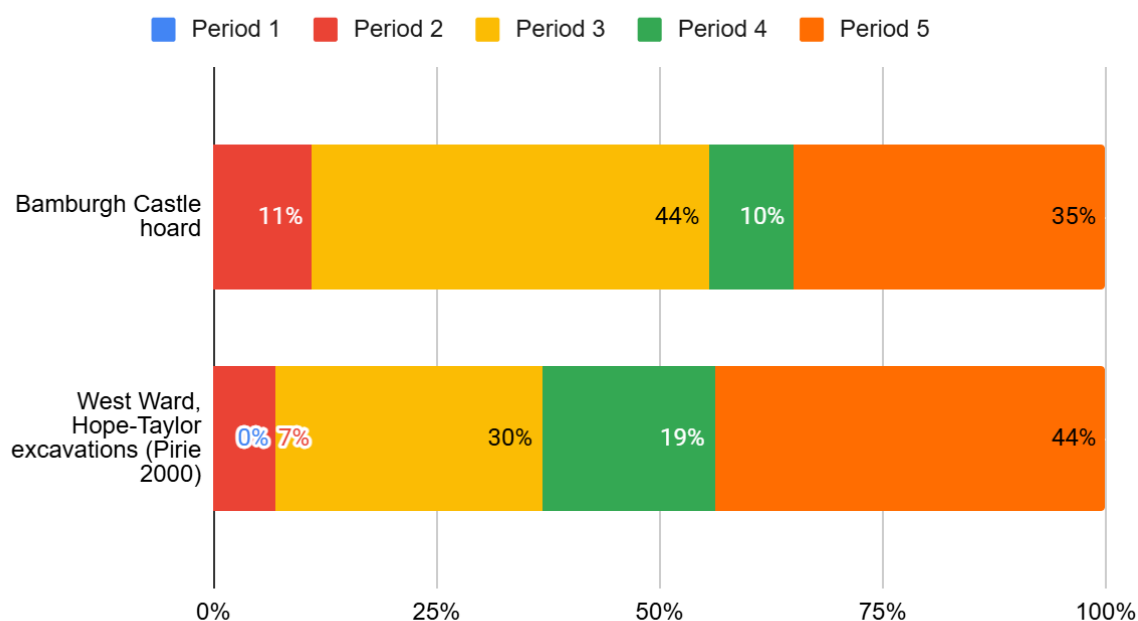


Figure 7.64: Comparison of material from West Ward and Bamburgh Castle hoard

### 7.4.10. Lindisfarne

As discussed in §2.3.4 excavations at Lindisfarne are ongoing, which means that this case study is in part based on an emergent dataset published online as part of the ongoing excavation led by the University of Durham and DigVentures. This project has excavated close to the thirteenth-century priory. The other source of Northumbrian pennies is from excavations at Green Shiel, to the north of the island in the 1980s. Figure 7.65 compares the finds from both assemblages, and figure 7.66 compares periods of production. Neither site has coins from period 1 present, and Sanctuary Field has no finds (so far) from period 5 (c.859). The assemblages are both relatively small, so the proportions of coins from each period should be read as indicative of potential comparative chronological relationship. However, further evidence that Green Shiel is the later assemblage is also shown by the higher numbers of period 2 and period 4 coins found in Sanctuary Field.

Period	Sanctuary Field (DigVentures)		Green Shiel (O'Sullivan)	
	No. of coins	% periodised	No. of coins	% periodised
1	0	0	0	0
2	4	40	3	21
3	3	30	6	43
4	3	30	1	7
5	0	0	4	29
Total	10		14	

Figure 7.65: Northumbrian pennies excavated from two Lindisfarne sites

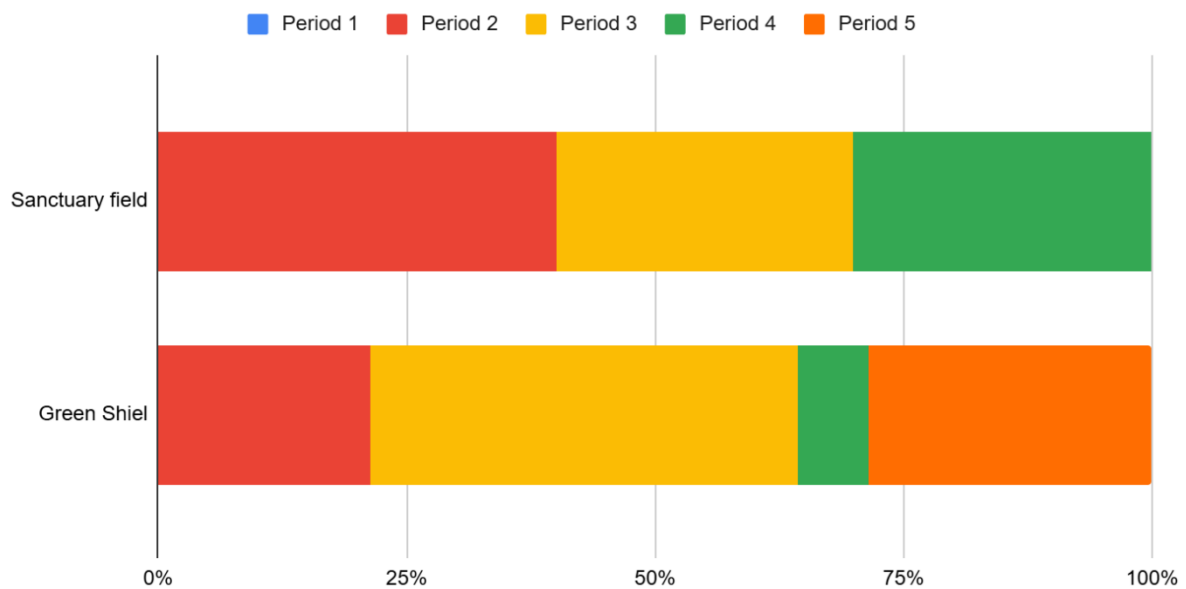
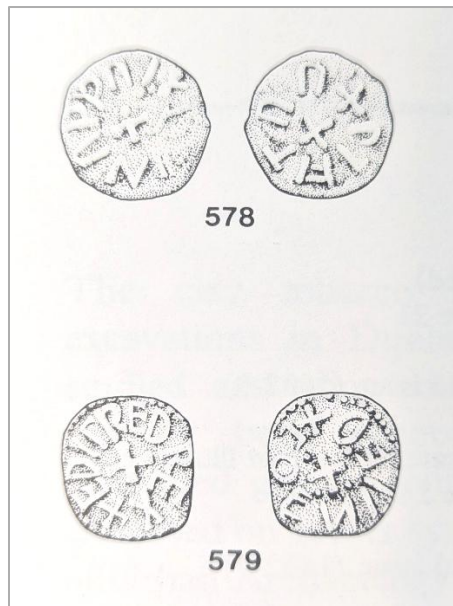


Figure 7.66: Proportions of Northumbrian pennies by period.

#### 7.4.11. Castle Park, Dunbar

The early medieval coin assemblage from the Castle Park, Dunbar excavations included one eighth-century sceatta from Ribe and two ninth-century Northumbrian pennies (Pirie 2000, 168; Blackburn 2000, 169; Holmes 2000, 170). The Northumbrian issues are shown in figure 7.67: one issued by Eanred with moneyer Wihtréd (578), the other issued by Aethelred II with moneyer Coenred (579). 578 was excavated from rubble between Building 6 and Building 9 in Phase 13. According to the report the coin showed little wear, which was interpreted that it was potentially lost shortly after production (Perry 2000, 186). However, the relationship between wear analysis and coin loss is debated by numismatists. Its potential loss in Eanred's reign was used by Perry (2000,

73) to support his assertion that the rubble between buildings and their destruction related to the sack of Dunbar by Kenneth MacAlpin circa 843 x 858.<sup>4</sup> The second coin was excavated from one of a line of post holes attributed to a Phase 15 construction of a hall. Perry interpreted this as a residual find, used in the top fill of the hole, and argued that Phase 13 was the end of the Northumbrian phase, using assumed dates of coinage to support this interpretation.



*Figure 7.67: Northumbrian coins from Dunbar – 578 issued by Eanred and 579 by Aethelred II*



<sup>4</sup> Dates and spelling for Kenneth MacAlpin differ between here and the Whithorn case study (§7.4.5); in each I use the version referred to in the accompanying archaeological report.

*Figure 7.68: Reconstruction of Northumbrian site at Dunbar, showing extant Building 6, which was later replaced (Perry 2000, 74)*

However, bearing in mind that Northumbrian coinage could also form part of Viking assemblages, there is space to consider both coins in the light of other finds from the site. In Phase 13, there are two indicators of Norse presence: one a hearth in Building 9, and a Viking comb found in a ditch nearby. In combination with the apparent destruction of the buildings, as well as lead alloy waste metalwork in Building 9, there is an alternative interpretation for the phasing of the site. This counters Perry's interpretation that "events and evidence are too late to be related to a possible Viking presence, which on the presence of the Northumbrian stycas was presumably over by the mid-ninth century" (Perry 2000, 75). At Hoddom, a similar hearth was excavated, along with a penny of Aethelred II, and a cut fragment of a penny of Louis the Pious (Pirie 2000, 77). Phase 14 is primarily a deep soil layer, perhaps indicating a clearing of the site and includes metal-working material: iron tongs and two crucible fragments. The timber hall, marked by the post holes, one of which contains the Aethelred II penny, according to Perry (2000 321) is either a later ninth-century construction, or dates to any one of the tenth, eleventh or twelfth.

#### 7.4.12. Llanbedrgoch, Wales

In §2.3.14 finds from Llanbedrgoch were discussed. They are a significant find as so few Northumbrian pennies have been discovered in Wales. Until the site monograph is published it is not possible to discuss the contexts they were found from in detail. What is known is that Find 1139 was recovered from the infill of a rubbish heap in the south-west corner of the site (Amgueddfa Cymru 2025). This is a coin of Aethelhelm minted for Archbishop Wigmund and corresponds with period 3. The other coin is a derivative issue and likely was produced in period 5. The derivative issue is shown in figure 2.44 and the site reconstruction with an approximate location of the Wigmund coin is in figure 7.68.

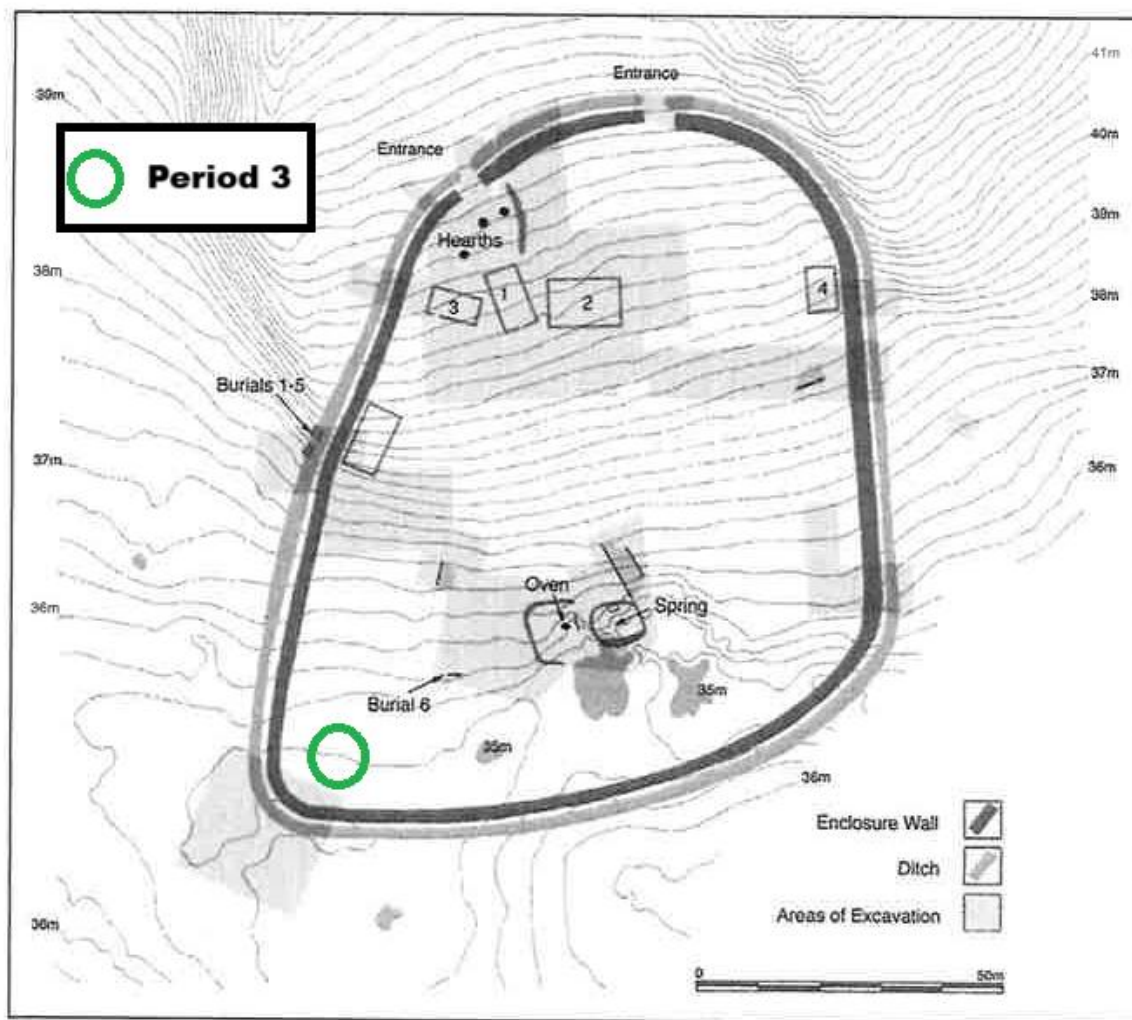


Figure 7.69: Site plan of Llanbedrgoch indicating area where Wigmund coin was recovered from.

### 7.4.13. East Thirston

There are five Northumbrian pennies that have been so far discovered from the elevated site at East Thirston. The five coins that do are listed in figure 7.70 and figure 7.71 shows those five, plus another Northumbrian coin from the south-east. With such a small sample, a cautious approach is required, however of the three periods represented, two of the coins date to period 5, the last phase of Northumbrian copper-alloy coin production. The one derivative issue in the assemblage is from Group Di and its obverse and reverse dies match number 1798 in *Coins of the Kingdom of Northumbria* (Pirie 1996, 233; Collins 2014).

PAS identifier	No. coins	Dates	Description of authority and moneyer	Period
NCL-65DEFA	1	c.845 – c.850	Eanred (1): <i>Eadwine</i> (1)	2
NCL-66031E	1	c.850 – c.854	Wigmund (1): <i>Hunlaf</i> (1)	3
DUR-397205, NCL-79B177	2	c.859 – c.867	Osberht (1): <i>Monne</i> (1) Derivative issue (1): <i>Di</i> (1)	5
NCL-4E6B72	1	c.818 – c.867	Illegible	0

Figure 7.70: Northumbrian copper-alloy coin finds from East Thirston, excluding south-eastern outlying find

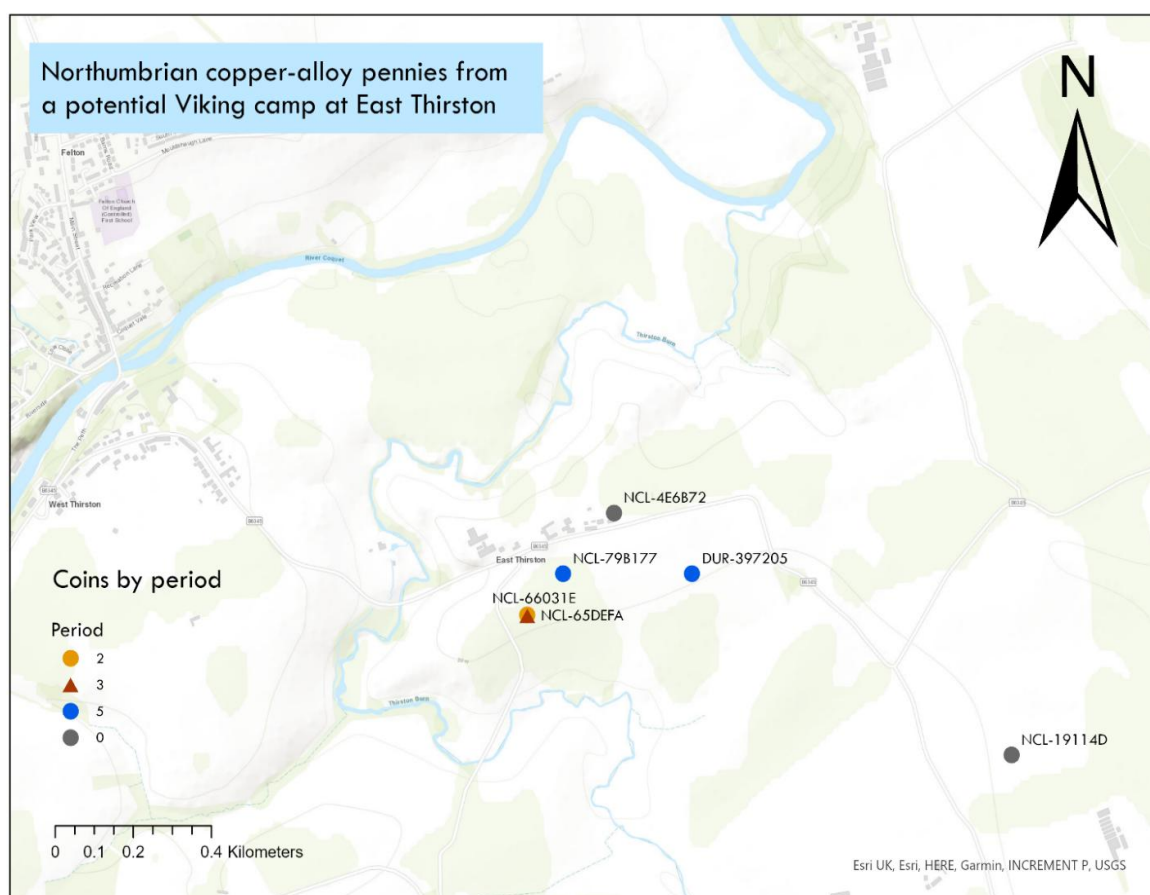


Figure 7.71: Northumbrian copper-alloy coins at East Thirston according to period of production (triangle showing overlapping finds)



Figure 7.72: NCL-79B177. CC BY Portable Antiquities Scheme

## 7.5. Other sites

In addition to the case studies discussed above where multiple Northumbrian pennies have been excavated from sites, there are several where single pennies have been recovered, as well as sites which are archaeologically significant, but coins were recovered more informally. This section briefly highlights some of these finds, firstly in 7.5.1 examining excavated single finds, then secondly those from more informal recovery in 7.5.2.

### 7.5.1. Excavated single finds

#### 7.5.1.1. *Swandro (Rousay), Orkney*

One Northumbrian penny was excavated at the site of the Howe of Swandro in Orkney. The focus of the site is a late Iron Age settlement which is being lost due to coastal erosion. Since 2010 archaeological investigations have been undertaken to record the rate of loss of archaeology at the site, as well as to understand the chronology of the structures present (REW Heritage SCIO 2024). The coin in question was excavated in 2015 from the entrance to the Roundhouse within a context that was backfilling the structure after it was partially demolished (Swandro-Orkney Coastal Archaeology Trust 2020, 34). Alongside the copper-alloy coin of Eanred, the skeletons of two skinned, domestic cats were found, as well as a spindle whorl and needle case. The finds from the infill are attributed to a possible Viking reorganisation of the settlement, prior to the construction of longhouses (REW Heritage SCIO 2024, 43; Dockrill 2023). The find is significant, as unlike the finds from Kingscross Point (Arran) and at Colonsay, they are not associated with a (human) burial. The Viking Age for the site is given dates 800-

1065. This coin, produced during period 2 by Eanred c.845-c.854, could potentially have a long period of circulation. For example, coins of Eanred were detected from Torksey.



*Fig. 37. The passageway of the Central Roundhouse with infill containing the Eanred coin.*

*Image 7.73 – Passageway where Swandro penny was excavated (REW Heritage SCIO 2024)*

### 7.5.1.2. Eynsham

Excavations at Eynsham Abbey between 1989 and 1992 revealed the remains of the medieval minster and was able to trace its origins back into the Saxon period (Hardy et al. 2003). An important minster there is first mentioned in 864 in the Water Eaton charter (Hardy et al. 2003, 7) and its origins seem to come from the remodelling of a secular estate. The site is significant as there is one Northumbrian penny excavated from a relatively secure context. This coin was identified by Pirie and was used in part to date the mid-Saxon phases on the site, although ceramic material was the primary source of dating for this period.

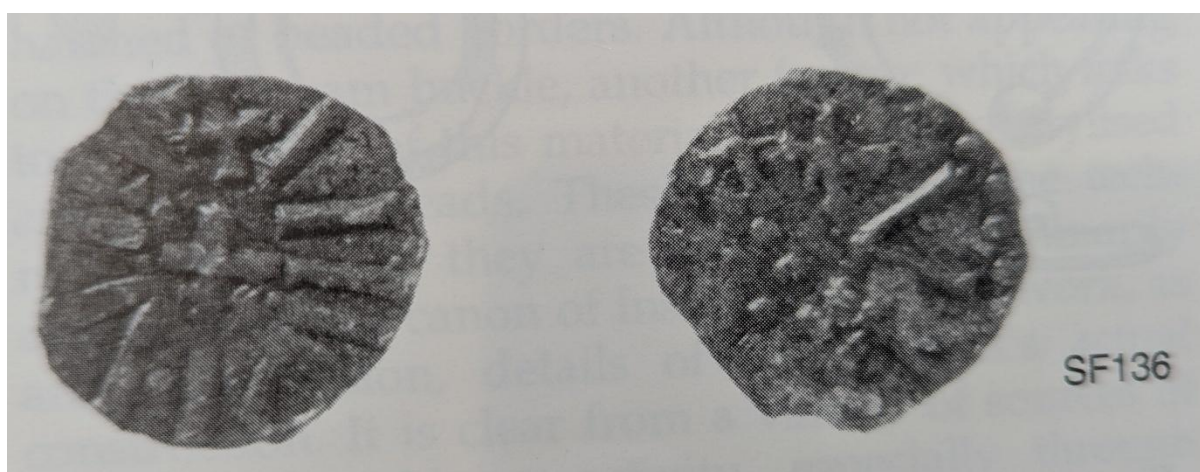


Figure 7.74: Northumbrian penny excavated from Eynsham.

The coin in question (SF165) is a derivative issue, Group Dii (Pirie 2003, 249–250) and Pirie was able to attribute it a specific die – no. 2092 as listed in *Coins of the Kingdom of Northumbria*; this die is also known from a specimen in the Bolton Percy hoard (Pirie 1996, 261). It was attributed to Phase 2c at the site, which dated from the mid-eighth century to the end of the ninth century (Hardy et al. 2003, 160). The dating of Phase 2c was based on finds of Ipswich ware and the penny, however they were not from the same context, and within the phasing it was suggested that the pottery had already fallen out of use by the time the coin was lost (Blinkhorn 2003, 172). The coin itself was dated by Pirie to c.843/4-9, based on her opinion on the fact that they were “most irregular [and] were probably made late in the reign of Aethelred II” (Pirie 2003, 249). However, she does go on to say that they circulate for some time, “even after 855”. In the wider discussion of the site, the date range of c.837-55 is given. It was excavated

from the eastern edge of the trench, from a context that was cut by a later posthole. The structure represented by the posthole could date to the later ninth century, and whilst this area could have plausibly belonged to the monastic settlement, there is not explicit evidence that this was the case (Hardy et al. 2003, 475).

According to my periodisation the coin would have been produced between c.859-c.866, between ten to twenty-three years after Pirie's suggested dates. This would then shift the dating of the posthole structure back further, consolidating a later-ninth century date for it.

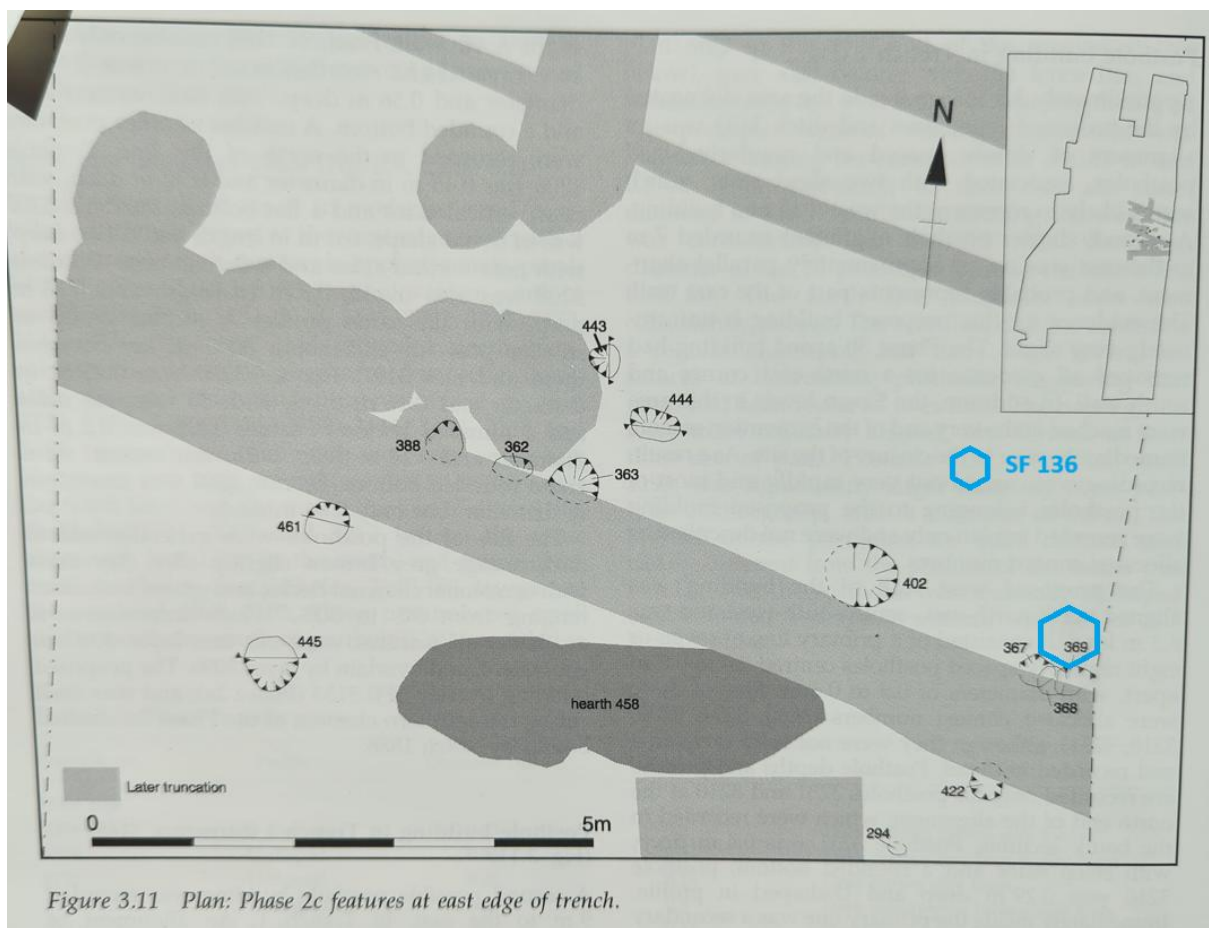


Figure 7.75: Location of the Northumbrian penny from Eynsham.

### 7.5.1.3. Hoddom

Two coins were recovered from the ploughsoil in an area known as Churchyard Holm (§2.3.19). These coins were a Northumbrian penny of Aethelred II struck by Fordred and a Carolingian denier of Louis the Pious (Pirie 2000b, 77). The former was dated to c.841 x c.844; the latter 819x822, and struck in Pavia (Lowe 1991, 25). The Northumbrian penny is found to the east of the present churchyard, but the Carolingian denier is found 100m further east, with neighbouring charcoal spread (figure 7.76).

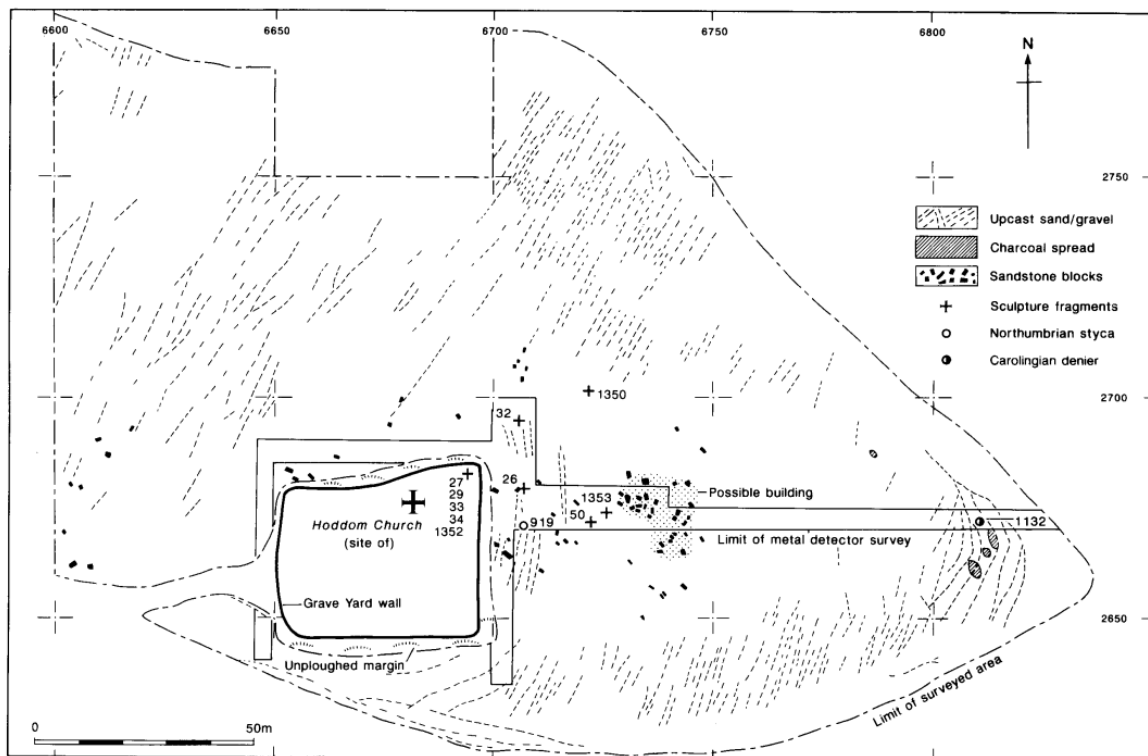


Figure 10. Post-ploughing survey of Churchyard Holm field

Figure 7.76: Survey of Churchyard Holm field (Lowe 1991, 26), note the Northumbrian penny ('styca') is found close to the east of the present churchyard, the denier 100m further east from the penny.

### 7.5.1.4. Caernarfon

As described in section 2.3.15, another Northumbrian penny was excavated from a site in Wales. It is a copper-alloy penny issued by Eanred and was produced within period 2. It was found to the SW of the right-hand gate “two inches below the lowest step of the postern”. The coin was produced in period 2 (see figure 7.77) for location. In the report on the 1975-79 excavations, it was noted that this coin could be sign of post-Roman

occupation at the site. Pirie knew of the coin and stated that a Carolingian denier had been found in Caernarfon, although it was unclear if that was linked to the fort. A Northumbrian penny and a Carolingian denier in combination, in this area, could, as we have seen elsewhere, be a potential indicator of Viking presence.

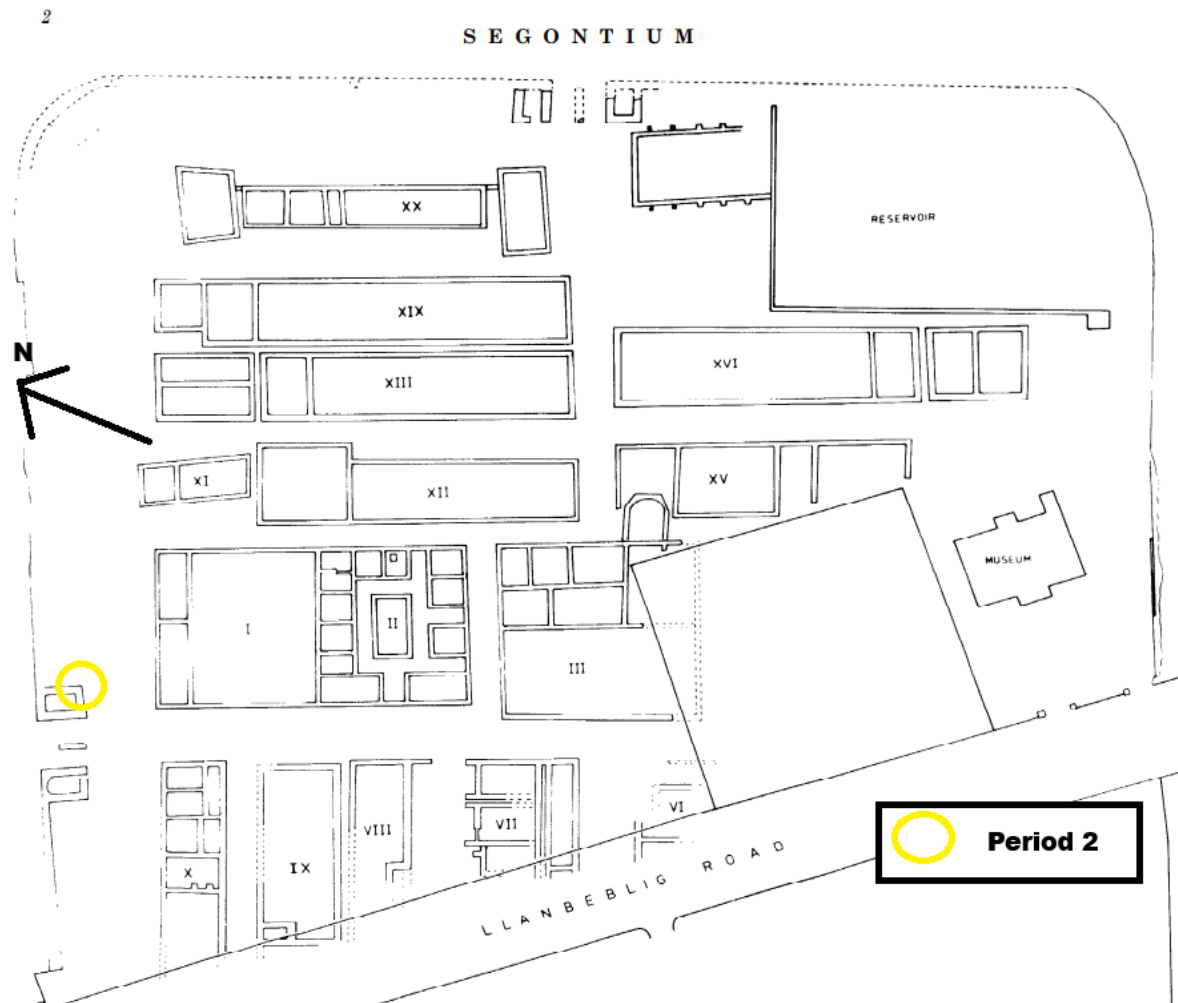


Figure 7.77: Location of Northumbrian penny at Segontium (Caernarfon)

### 7.5.2. Stray finds

Locations that Northumbrian pennies have been recovered from, through surface finds or as a by-product of non-archaeological excavations. These include sites of Luce Sands (Dumfries & Galloway), Meols (Merseyside), Keevil (Wiltshire), amongst others. Not metal detected, some have wider contextual information, but others do not. They are placed here to demonstrate the range of further locations of finds. They are listed in figure 7.78.

Site	Northumbrian coins	Discovery	Other associated finds	Period
Keevil, Wiltshire	1: Wigmund (Hunlaf)	Found by farmer in field known as 'Henleys' no other contemporary coins reported	No early medieval data on PAS; no sculpture for parish is ASCSS.	3
Meols	4: unknown	Gathered by antiquarians in the nineteenth centuries from eroding site of Dove Point	"curious hybrid of Viking and Anglo-Saxon elements" (Richards, Naylor and Holas-Clark 2009, sect.4.4.35)	uncertain
Merlewood Cave	7: Eanred, three Aethelred II, one Wigmund, two illegible	Children discovered cave in 1891 (Cowper 1892)	Human and animal bone (Wilford 2016)	2, uncertain
Sledmere	1: Aethelred II (Hunlaf)	Re-excavation of Kemp Howe barrow in 1968	Early medieval inhumations	3
Prior Rakes, Malham Moor	2: Eanred (Aldates, Monne)	Excavation in 1960	None contemporary (Wilford 2016)	2
Attermire Cave	4: Eanred (Wihfred), Aethelred II (Fordred, Leofthegn, Eardwulf)	19 <sup>th</sup> -century excavation	None contemporary (Wilford 2016)	2, 3, 4
Ribblehead	4: Wulfhere (Wulfred), AethelredII (Odilo); two derivative	1974-5 excavation (King 1978)	None	5
Castle Douglas	1: derivative	Excavations for pipeline, 1993	None	5
Kingscross Point, Arran	1: Wigmund (Coenred)	Viking boat burial	§2.3.1.	3
Kiloran Bay	3: Aethelred II (Eanred), Wigmund (Coenred), missing	Viking chambered burial	§2.3.1.	3
Baleshare, North Uist	1: Aethelred II (Eanred)	Chance find on beach, 1988	None	3

Park Road, Peterborough	1: Aethelred II (Wendelberht)	Excavations in 1962		3
Bury Road Allotment, Thetford	1: Aethelred II (Eanred)	Chance find whilst digging, 1975	None	3
Leicester Square, London	2: uncertain	Excavation	§2.3.7	uncertain
Bull Wharf (Queenshithe Estate), London	2: derivative (Group A, Group Dii)	Excavation	§2.3.7	2, 5
Rutupiae fort - Richborough, Kent	3: Eanred (Aldates), Aethelred II (Eanred, Fordred)	Excavation (Pearce 1940)	Uncertain, but significant that it is another Roman site	2, 3
Castle Hill, Castleton, Derbyshire	1: Aethelred II (Earduwlf)	Antiquarian find	§3.2	4
Bradwell-on- Sea	1: Aethelred II	Single find	Found close to early medieval church (Rippon 2023)	uncertain
Healam Bridge, Thirsk	1: Aethelred II	Excavation (Ambrey et al. 2017)	Metal-detected finds from Carthorpe, 1 km away	uncertain

Figure 7.78: List of additional sites where Northumbrian pennies have been recovered as chance finds but are of note in terms of location and/or context.

## 7.6. Conclusions

Finds of Northumbrian pennies from excavated sites can bring new information of the use of the coinage. However, archaeological investigations and their data are variable. The coin data too is variable; some could not be accessed or reconstructed for this thesis. Where detail is absent, sites cannot be re-excavated, but new research and new finds, for example at Bamburgh, could unlock new interpretations. Where detail is there, the periodisation presented in this thesis is able to demonstrate later dates for several sites, including Whithorn and Beverley. In future, this periodisation will enable archaeologists to reinterpret sites considering the new dating. This opens new scope for connection between events or activities that were previously considered out of scope due to coin dating, for example destruction of Beverley with potential Viking activity.

The revised periodisation in future will have a significant effect on new excavations and reinterpreting archaeological data. Detailed analysis of stratigraphy alongside periodised coin finds can also revise chronologies within sites, for example at Whitby. However, this is dependent of the quality of the data, for example at Flixborough where most coins are unstratified, this is not possible. Understanding the context of Northumbrian coinage is also important, for example coins of Eanred were also in the Torksey assemblage showing that circulation can last for several decades after production; this may be the case at Rousay.

All the varied case studies demonstrate the importance of detailed numismatic study, and the new periodisation of the coinage enables more nuanced interpretations of excavated data, which can reveal new information. In a similar manner to chapter 4, this chapter mainly refers to *belonging* and *creating* from Kemmers and Myrberg (2011). The chapter demonstrated that Northumbrian continue to be found in a range of contexts, where they may have been previously overlooked, their presence can now be questioned through a framework of Viking activity. That is not to say every Northumbrian penny outside Yorkshire is 'Viking', but that activities of the Viking Great Army provide a lens to ask new questions through. This question of the extent to which money is an expression or reflection of identity is repeated here. In terms of *creating*, excavation, recording and interpretation are the creative acts, just as reinterpretation

also is. Flixborough illustrates this well: with a revised lens – the finds signature of the Viking Great Army – possibility for a revision to interpretation is opened.

## 8. Hoarded and modified Northumbrian pennies

### 8.1. Introduction

This chapter pairs together hoarded Northumbrian pennies and others that have been adapted and re-used. Both are removed from normative circulation: hoards are intentionally concealed; modified pennies have been purposefully altered to create revised function and meaning. Section 8.2 of this chapter considers hoarded Northumbrian pennies and applies the periodisation from §4.3.5 to them; §8.3 considers modified pennies, both those that are on inlaid weights and those that are pierced. Both sections include spatial perspectives on the material.

### 8.2. Hoards

Accidental losses, ‘emergency hoards’, ‘savings hoards’ and abandoned hoards are four classifications developed to understand the practice of concealing wealth (Grierson 1975, 130–132). These ways of viewing hoarded material have been revised since, with Bland (2013) stating that there is little difference between an emergency or a savings hoard, further saying that the contents of the hoard rarely provide evidence for this. Indeed, post-Roman hoards are “generally assumed to be buried with the intention of recovery” (Bland 2013, 234).

Hoard studies for the period c. 973 – 1544 has been further developed by Andrews (2019), who advocates for an applied numismatics approach to be used for hoarded material. He argues for the adoption of three structures to be used to analyse hoards: chronological, regional and nominal structures. The first looks at production dates for material in the assemblage, the second uses mint data to undertake spatial analysis, and the third examines denominations with hoards. These can also be used for early medieval material, but the corpus of early medieval hoards has not been subject to similar holistic analysis. For Northumbrian pennies, only the first – chronological structure – is possible since the coins are all the same denomination and there is barely any definite evidence for multiple mint places. The periodisation developed in §4.3.5, enables chronological hoard structures to be compared.

Andrews also argues that in addition to this content-driven analysis of hoards, context-driven analysis must be undertaken (Andrews 2019, 7–8). This focus on context is done at a range of scales from the container the hoard was deposited in, the context it was excavated from, to the wider landscape context. For Northumbrian hoards contextual data varies. Excavated hoards, such as those from Bamburgh Castle and Beverley have good data for all contexts, but for hoards such as ‘Bath’ and ‘Lancashire’ only notional contextual information remains. The Portable Antiquities Scheme has had significant impact on the recovery and recording of hoards, expanding the corpus beyond the antiquarian material upon which most initial understanding of the coinage was based.

Beyond disparity in contextual information, there is also a significant difference in size of Northumbrian hoards. They vary from the smallest, the Harswell hoard of eleven coins, to the St Leonard’s Place hoard which may have comprised as many as 10,000 coins. In terms of dating Northumbrian hoards, Pirie dated the Hexham hoard to the reign of Aethelred II and the St Leonard’s Place and Bolton Percy hoards to the reign of Osberht (Pirie 1996, 17–19). Pagan (1969, 11) stressed that hoards were concealed, indicating the intention of recovery, rather than converted to another form of wealth which would indicate a cessation in the coinage. He associates this period of concealment with a date of c.867 coinciding with Viking invasion (Pagan 1969, 11). Comparison with assemblages from Torksey and Aldwark revises this view. Section 8.2.1 considers the spatial distribution of hoards and §8.2.2 periodises the assemblages. In §8.2.3 I summarise the findings so far and review dates of concealment.

### 8.2.1. Spatial distribution of hoards

Out of the twenty hoards examined in this chapter, only two have been found outside the kingdom of Northumbria. One of these, London Opera House (see §2.3.7) was excavated so there is excellent contextual data, as well as content. The other, the ‘Bath’ hoard, has a far more debatable provenance (see §2.2.5). However, Metcalf’s (1965) view that it likely represented a genuine assemblage means that it is retained here. The

other hoards here are all from within the kingdom of Northumbria, all bar one with relatively secure spatial data. The exception is the 'Lancashire' hoard (see §8.2.1.1).

Further hoards considered here range from antiquarian finds to excavated and metal detected assemblages. The most northerly of these are the three hoards from Bamburgh Castle and its vicinity, the westernmost is the Talnotrie hoard, the southernmost the 'Bath' hoard and the most easterly the London Opera House hoard. Beyond these the hoards concentrate in Northumbria, especially in York and its surrounding area. This chapter only considers hoards where there is enough data to enable a periodisation. This means that some hoards, such as Kirkoswald, which are significant in other ways, are not included in analysis but are shown in figure 8.1 for reference. Figure 8.2a shows concentrations of hoards, highlighting the area around York, and Bamburgh. Figure 8.2b shows the relative sizes of hoards, the majority of which have less than 100 coins. Hoards of every size are found in York, as shown in figure 8.2b, and the only other two larger hoards are further north at Hexham and Kirkoswald. Most hoards contain coins from period 5, but two do not, as shown in figure 8.2c: the York 'railway' hoard exclusively contained period 1 coins and Hexham's final issues date to period 4. Overall, hoarding practices concentrated in Northumbria, with two potentially found outside the kingdom. There are several hoards from the west of the kingdom, although the highest concentrations of hoards are found in York and Bamburgh and their environs.

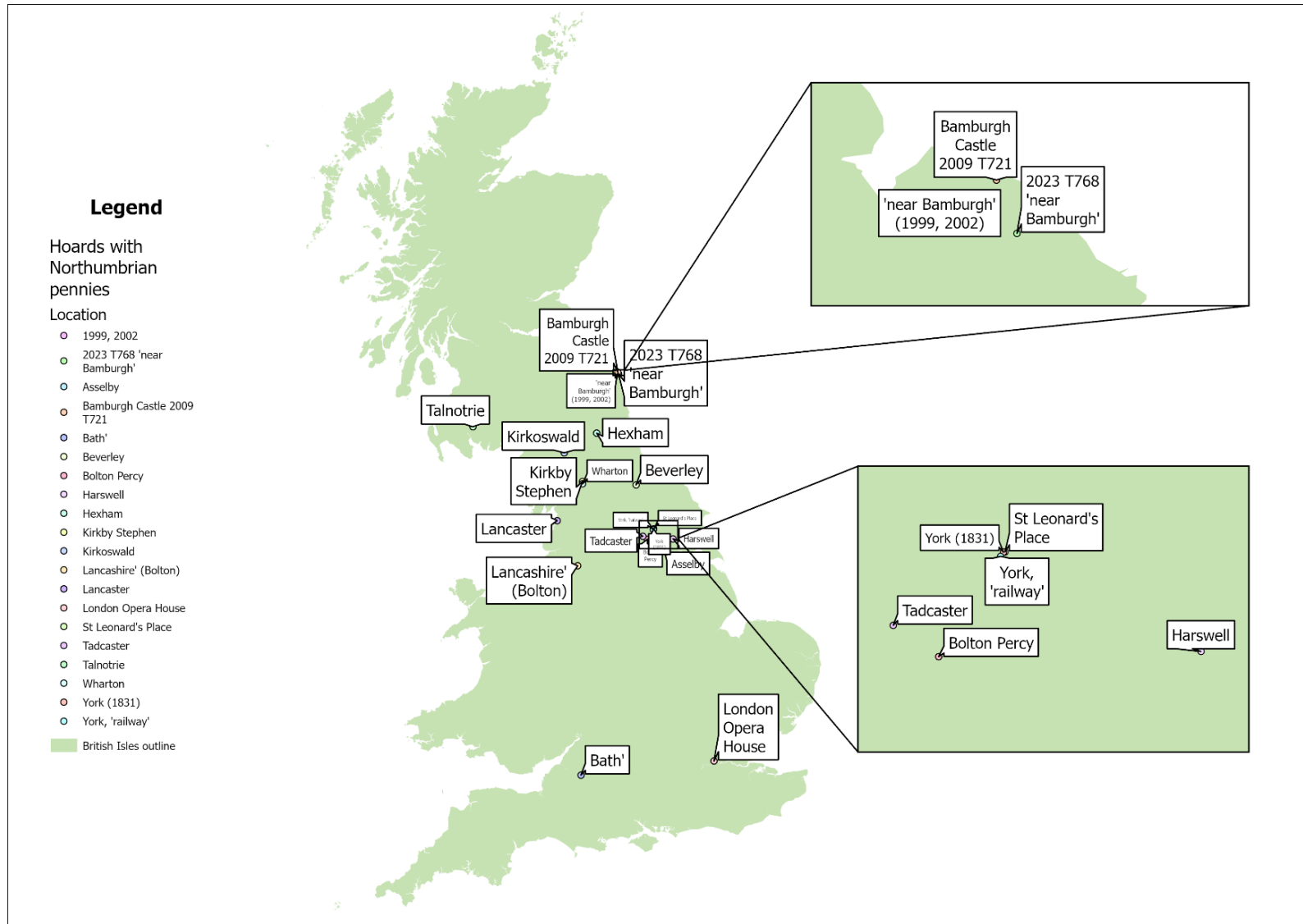


Figure 8.1: Map of Northumbrian coin hoards

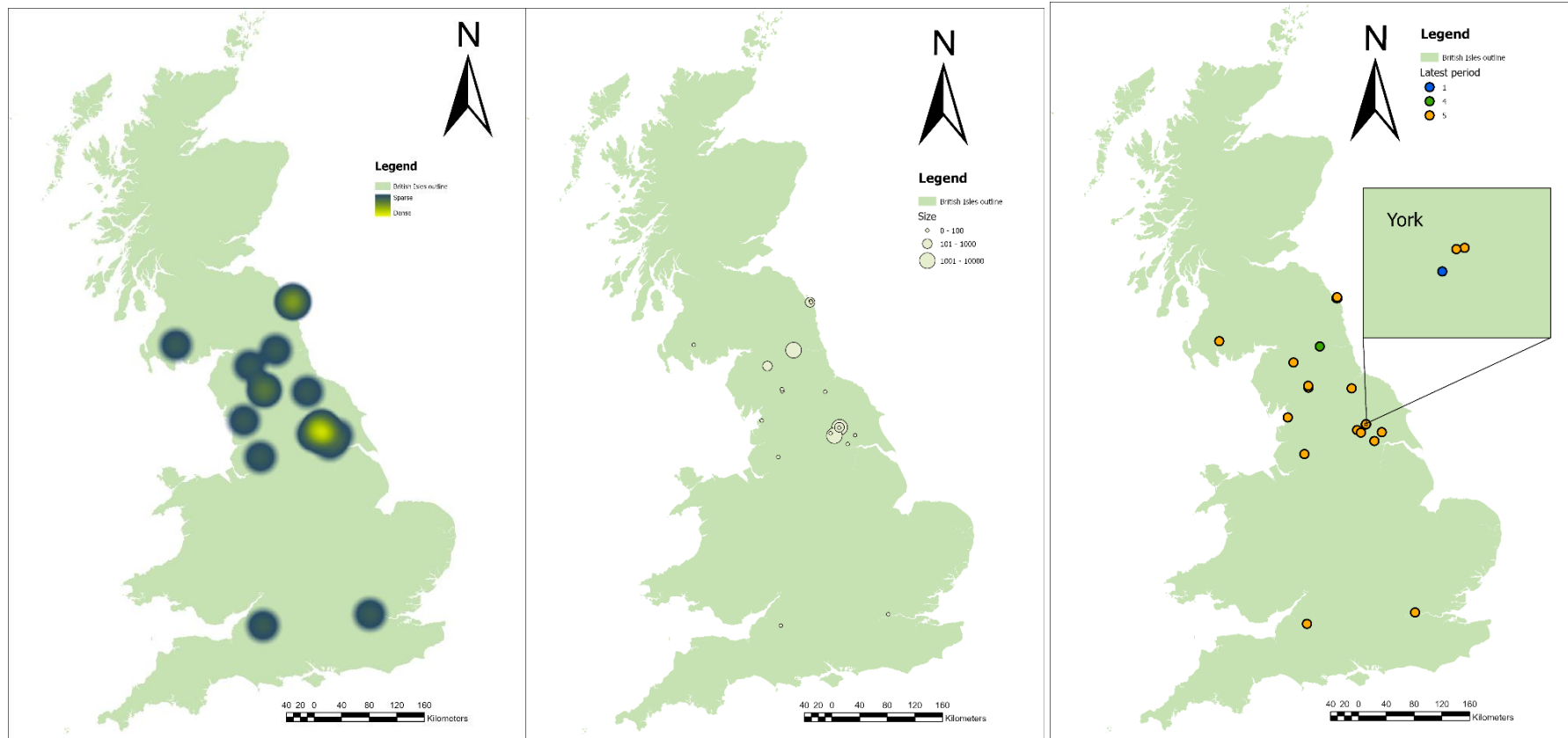


Figure 8.2: a) a heatmap demonstrating concentrations of hoards; b) figure showing relative sizes of hoards; c) map of hoards according to final period present in assemblage.

## 8.2.2. Periodisation of hoards

In §8.2.2.1 to §8.2.2.16 the periodised data from each assemblage is assessed according to the principles laid out in chapter 4. This addresses several questions. Firstly, what periods of production are dominant in each of the largest hoards (Hexham, Bolton Percy, St Leonard's Place), and what these proportions imply for hoard chronology. Secondly, by periodising smaller hoards, what chronology is established for their potential concealment. Thirdly, by combining all sizes of hoard into a relative chronology of concealment and comparing it to the assemblage profiles from Torksey and Aldwark, chronological comparison can be drawn between them. As discussed in chapter 5, estimates on assemblage chronology rely on the supposition that the later a hoard was concealed, the larger the proportion of period 5 material it will contain. The hoards analysed here are listed below in order of discovery. Section 8.2.3 summarises and addresses the chronology of concealment.

### 8.2.2.1. York, 1831

This hoard was discovered somewhere in the vicinity of St Mary's Abbey in 1831 (see §2.2.1.2). It subsequently was acquired for the collections of Stonyhurst College (Pirie 1994). The hoard includes coins from periods 1 to 5, with the highest proportion of coins from period 3, followed by period 5.

Period	No.	%
1	4	1.3%
2	47	14.9%
3	167	53.0%
4	29	9.2%
5	68	21.6%
0	7	
Total	322	
Periodised	315	

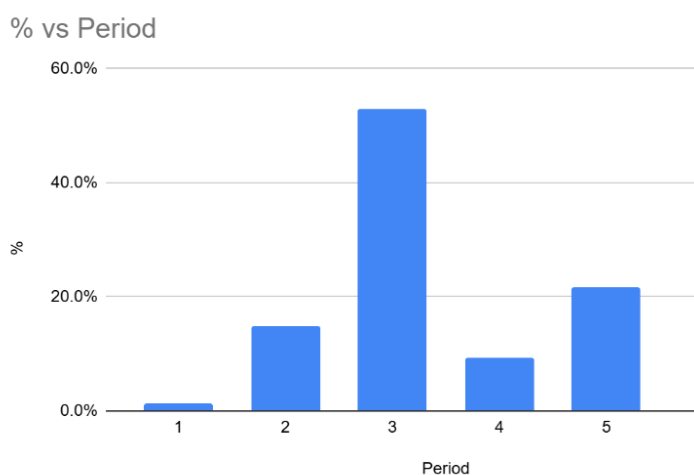


Figure 8.3: a) Number and percentage of coins from York, 1831; b) graph showing proportion per period.

### 8.2.2.2. Hexham, 1832

This section presents periodised data from both the Hexham coins in museum collections, as aggregated by Abramson (2018), as well as a periodised version of the data from Adamson’s illustrations (Pirie 1987a). The proportions of coins are broadly similar, with coins from periods 1, 2, 3 and 4 present. Period 3 is most represented in both the plates and extant coins in museum collections. The plates represent period 1 slightly more than collections data does, which might be due to selection bias, since these are silver, or silver-alloy issues, which may have been easier to read and more attractive. Significantly, there are very similar proportions of periods 2 and 4 between the different recorded datasets, which agrees with Pirie’s (1987a, 257) view that the illustrations are broadly representative of the hoard. The periodisation reinforces the evidence for dating laid out in §2.2.3 that this hoard was concealed during the second reign of Aethelred II, and the low numbers of period 4 issues indicate its concealment was perhaps c.855.

Period	Adamson plates		Museum collections	
	Number of coins	%	Number of coins	%
1	226	25.2%	25	16.0%
2	194	21.6%	34	21.8%
3	456	50.8%	92	59.0%
4	21	2.3%	4	2.6%
5	0	0.0%	0	0.0%
0	37		1	
<b>Total</b>	934		156	
<b>Total periodised</b>	897		156	

Figure 8.4: comparison of data sources for contents of the Hexham hoard (Adamson 1834; Pirie 1987a; Abramson 2018)

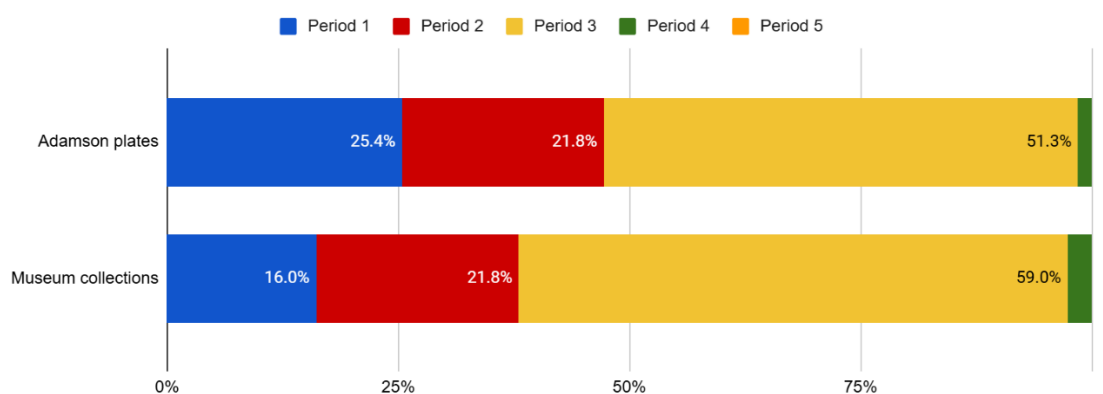


Figure 8.5: Chart comparing periodised material from the Hexham hoard.

### 8.2.2.3. St Leonard's Place, 1842

As discussed in §2.2.1.3. the St Leonard's Place hoard was discovered by workmen in York in 1842. The findspot was likely where the De Lacey Rooms in the city centre are now. There were originally estimated to be 10,000 coins in the find, but many were sold on quickly by the finders. However, several thousand were purchased by the Yorkshire Museum, and although some have become detached from their provenance whilst in museum storage, there is a corpus of 1914 coins to examine. All periods are represented in the hoard, with the highest proportion of material from period 3, followed by period 5.

Period	Number coins	%
1	21	1.1%
2	197	10.3%
3	979	51.4%
4	272	14.3%
5	437	22.9%
0	8	
<b>Total</b>	<b>1914</b>	
Periodised	1906	

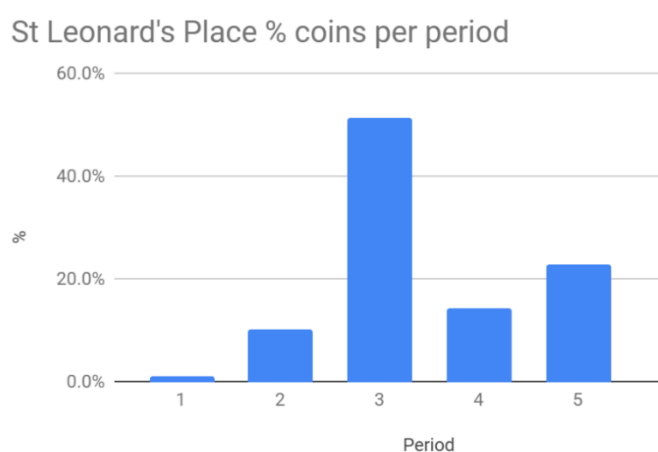


Figure 8.6a-b: a) coins from the St Leonard's Place hoard; b) comparison of periods represented in the hoard

### 8.2.2.4. Bolton Percy, 1846, 1967

The Bolton Percy hoard comprises two parcels of material that were discovered 121 years apart close to one another, close to the village of Ulleskelf, but within the parish of Bolton Percy in North Yorkshire; these circumstances are outlined in §2.2.1.4. This section uses a combined dataset of 1821 coins from the Yorkshire Museum, judging it to be representative of the assemblage as far as can be discerned. All periods are represented in the hoard, with the highest proportion of material from period 3, followed by period 5.

Period	No.	%
<b>1</b>	27	1.5%
<b>2</b>	292	16.1%
<b>3</b>	697	38.4%
<b>4</b>	190	10.5%
<b>5</b>	609	33.6%
<b>6</b>	0	0.0%
<b>Total</b>	1821	
Periodised	1815	

Bolton Percy hoard, % coins by period

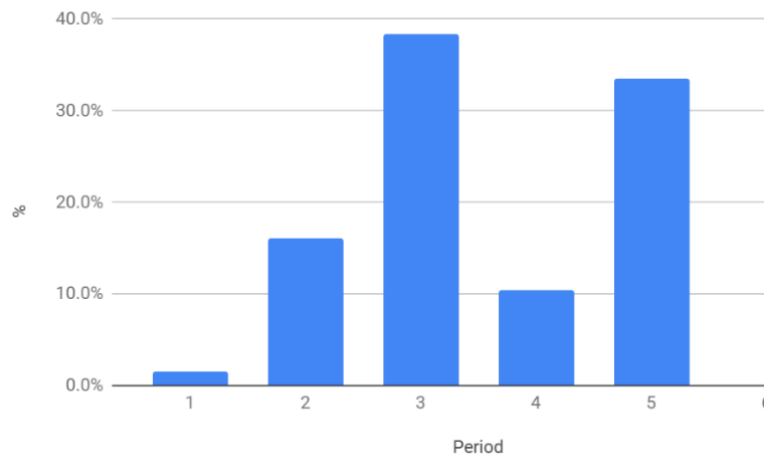


Figure 8.7a-b: a) coins from the Bolton Percy hoard; b) comparison of periods represented in the hoard

#### 8.2.2.5. 'Bath', 1867-68

Whilst full circumstances of the concealment of the 'Bath' hoard are unknown (see §2.2.5), its 25 coins have been fully described. The hoard features coins from periods 2 to 5, with the highest proportion of material from period 3, followed by period 2.

Period	Number	Proportion
1	0	0.00%
2	7	28.00%
3	12	48.00%
4	2	8.00%
5	4	16.00%
6	0	0
total	25	

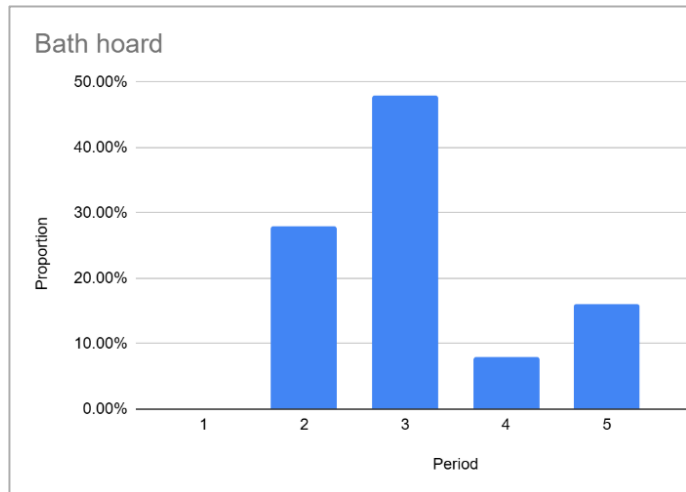


Figure 8.8a-b: a) coins from the 'Bath' hoard; b) comparison of periods represented in the hoard.

### 8.2.2.6. 'Lancashire' hoard, 19<sup>th</sup>-century

There are 56 coins described by Pirie (2000, 73). Coins from periods 2, 3, 4 and 5 are present in the assemblage, with the highest proportion from period 5, followed by period 3. Eighteen of the period 5 coins are derivative issues, but Pirie does not record which derivative groups they may belong to, and I have not been able to view the material.

Period	Number	Proportion
1	0	0.0%
2	9	16.1%
3	19	33.9%
4	6	10.7%
5	22	39.3%
Total	56	

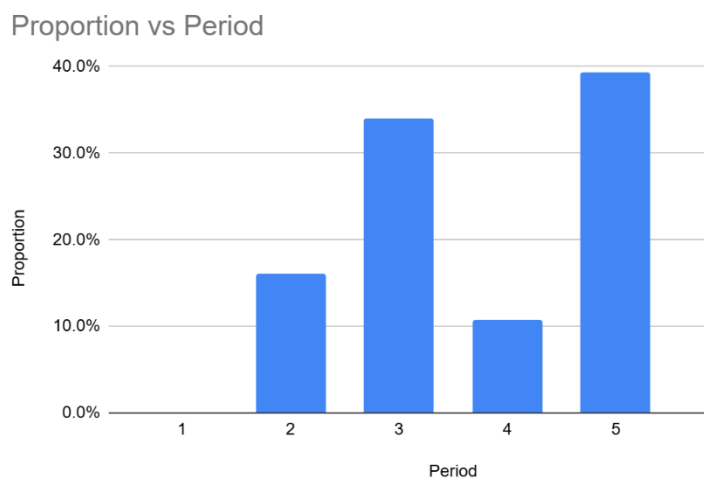


Figure 8.9a-b: coins from the 'Lancashire' hoard; b) comparison of periods represented in the hoard

### 8.2.2.7. Beverley, 1981

The Beverley hoard was recovered through excavation, and discussion of its orientation within the site is found in §2.3.6. and §7.4.8. This section deals with periodisation of finds from the hoard, rather than the wider archaeological context. Pennies from periods 2 to 5 are found, of which period 5 has the largest proportion of material.

Period	Number	Proportion
1	0	0.0%
2	2	8.7%
3	5	21.7%
4	1	4.3%
5	15	65.2%
Total	23	

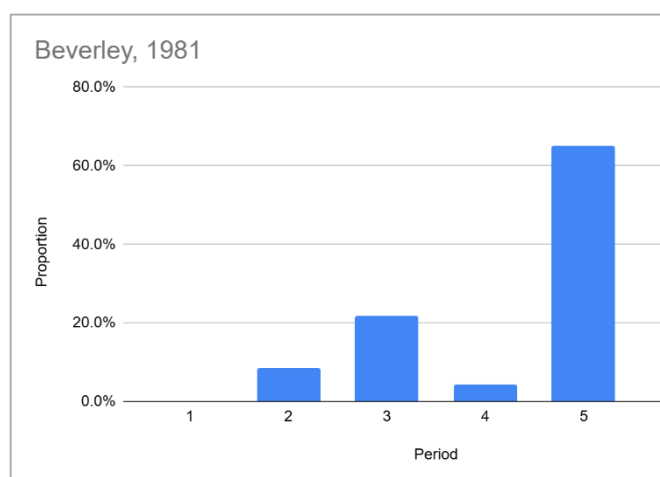


Figure 8.10a-b: a) coins from the hoard excavated at Lurk Lane, Beverley; b) periods represented in the hoard

### 8.2.2.8. London Opera House, 1996

Similarly to Beverley, another small hoard was excavated at London Opera House in Covent Garden in 1996 (see 2.3.7.). Coins from periods 2 to 5 are found in the assemblage, with the highest proportion from period 5, followed by period 3.

Period	No.	Proportion
1	0	0.00%
2	3	13.6%
3	5	22.8%
4	3	13.6%
5	11	50.00%
Total	22	

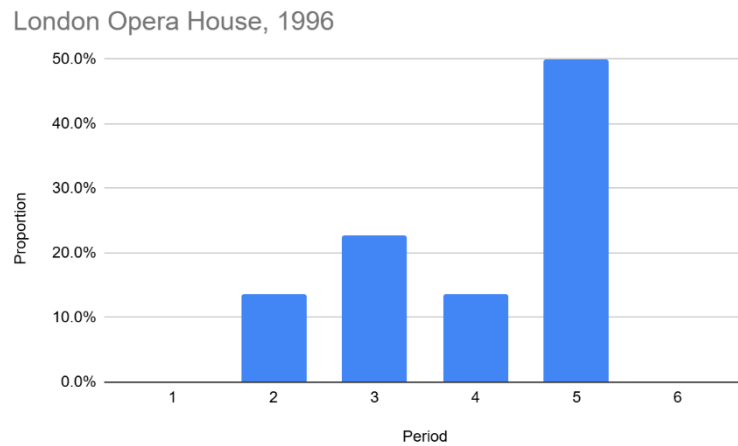


Figure 8.11a-b: a) coins from the hoard excavated at Opera House; b) periods represented in the hoard.



Figure 8.12: Hoard excavation underway (Malcolm et al. 2003, 130). Copyright Museum of London Archaeology.

### 8.2.2.9. 'near Bamburgh', 1999, 2002, [2004]

The 'near Bamburgh' hoard, which comprises three parcels of finds made by metal detectorists in 1999, 2002 and 2004 outside a village near Bamburgh (see §2.4.1.1), not within the castle itself. The dataset used here is from the 1999 and 2002 parcels, as data from the later parcel is not readily accessible. Nevertheless, this provides an assemblage of 263 periodised coins. Coins from all periods are part of the hoard, with the highest proportion of coins from period 3, followed by period 5.

Period	No.	%
1 (c.818-c.845)	1	0.4%
2 (c.845-c.850)	46	17.5%
3 (c.850 - c.854)	104	39.5%
4 (c.854 - c.859)	29	11.0%
5 (c.859 - c.866)	83	31.6%

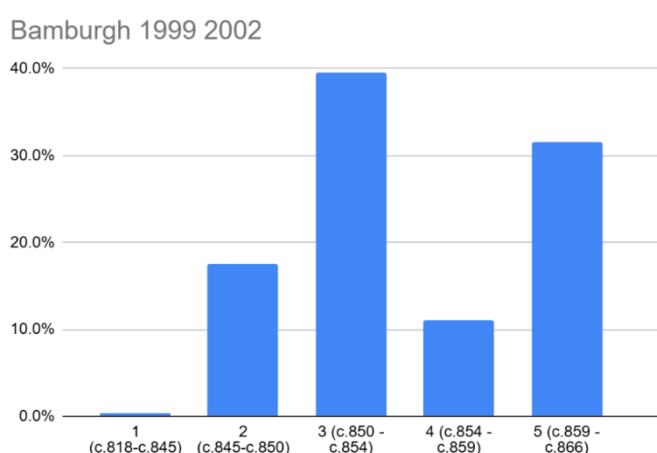


Figure 8.13a-b: a) coins from the hoard metal detected from the 'near Bamburgh' location; b) periods represented in the hoard.

### 8.2.2.10. Harswell, 2007

Harswell is the smallest hoard in this study, with only eleven coins. The hoard was found by metal detectorists. Coins from periods 2 to 5 are present in it, with the highest proportion from period 3.

Period	Number	Proportion
1	0	0.0%
2	2	18.2%
3	4	36.4%
4	2	18.2%
5	3	27.3%
total	11	

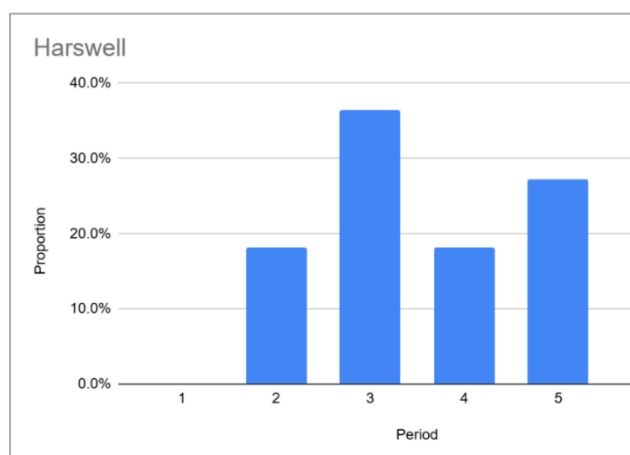


Figure 8.14a-b: a) coins from the hoard metal detected from Harswell; b) periods represented in the hoard

### 8.2.2.11. Bamburgh Castle hoard (2009 T721)

As discussed in §2.3.8 and §7.4.9 hoard was excavated at Bamburgh Castle in 2009. The hoard features coins from periods 2 to 5, with the highest proportions from periods 3 and 5.

Period	No.	Proportion
1	0	0%
2	8	14%
3	24	42%
4	6	11%
5	19	33%
0	20	
Total	77	
Periodised	57	

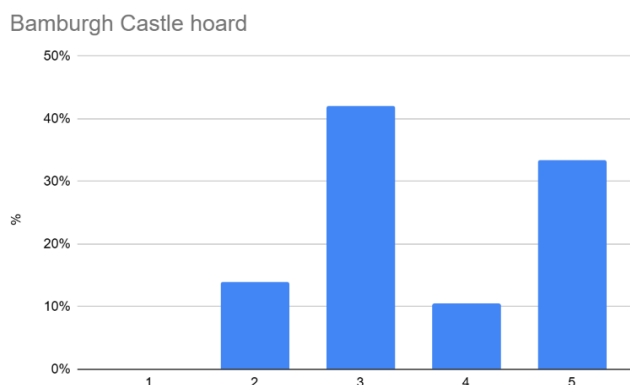


Figure 8.15a-b: a) coins from the hoard excavated at Bamburgh Castle; b) periods represented in the hoard.

### 8.2.2.12. Wharton, 2017

This hoard was discovered by metal detectorists in 2017 and was reported to the Portable Antiquities Scheme. With 31 coins that can be periodised, it features coins from periods 2 to 5, with period 3 featuring the highest proportion of material.

Period	Number	Proportion
1	0	0.0%
2	2	6.5%
3	13	41.9%
4	7	22.6%
5	9	29.0%
periodised	31	
overall total	32	

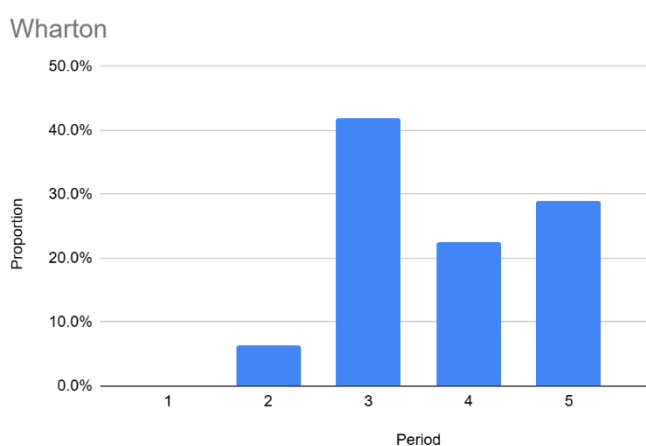


Figure 8.16a-b: a) coins from the hoard found at Wharton; b) periods represented in the hoard.

### 8.2.2.13. Tadcaster, 2018

This hoard was metal detected and recovered in 2018. Comprising 17 coins, 13 of which can be periodised. Periods 1 to 5 are represented in the hoard, which the highest proportion of coins from period 5, followed by period 4.

Period	Number	Proportion
1	1	7.7%
2	2	15.4%
3	2	15.4%
4	3	23.1%
5	5	38.5%
0	4	
total	17	
<b>Periodised</b>	<b>13</b>	

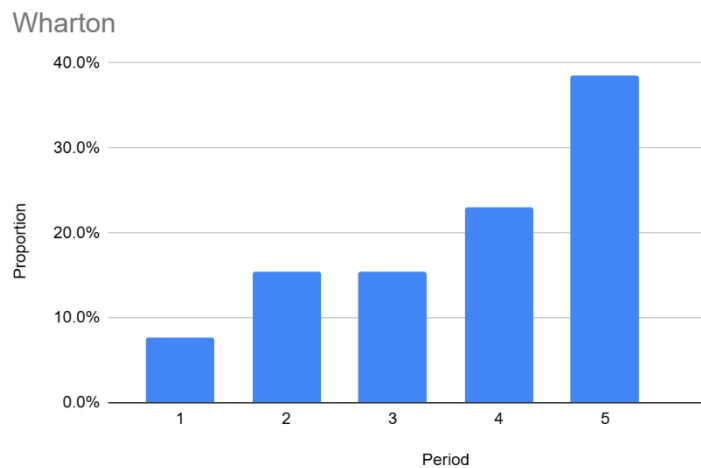


Figure 8.17a-b: a) coins from the hoard metal detected from Tadcaster; b) periods represented in the hoard.

### 8.2.2.14. Asselby, 2019

Asselby is another metal detected hoard discovered in 2019. Of the 24 coins in this hoard, 19 can be periodised. Coins from periods 3, 4 and 5 form the assemblage, of which period 3 has the highest proportion of finds.

Period	Number	Proportion
1	0	0.00%
2	0	0.00%
3	2	10.5%
4	4	21.1%
5	13	68.4%
0	5	
Total	24	
Periodised	19	

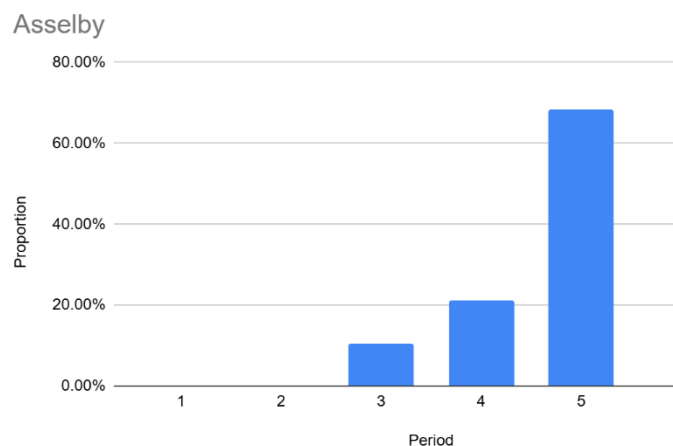


Figure 8.18a-b: a) coins from the hoard metal detected from Asselby; b) periods represented in the hoard.

### 8.2.2.15. Kirkby Stephen, 2019

This hoard was metal detected from a spoil heap as part of an archaeological watching brief in Cumbria. Periods 3, 4 and 5 are represented, of which period 3 has the highest proportion of coins. It is unusual in that no period 2 coins were part of it.

Period	No.	%
1	0	0.00%
2	0	0.00%
3	13	54.2%
4	1	4.2%
5	10	41.6%
0	12	
total	36	
Periodised	24	

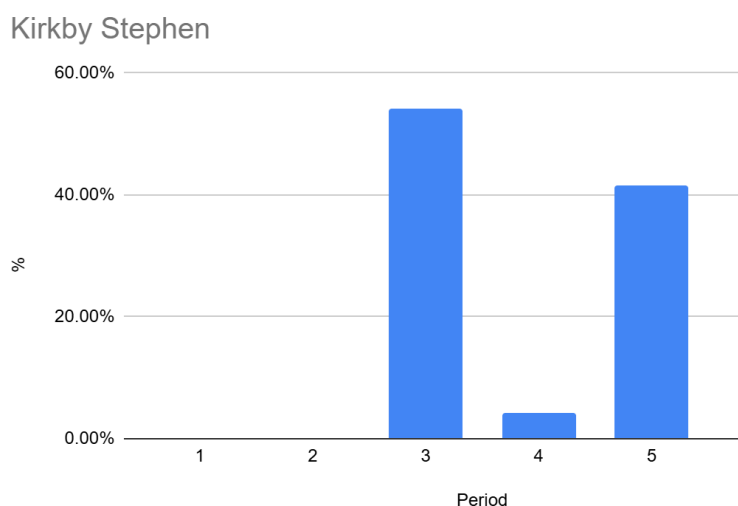


Figure 8.19a-b: a) coins from the hoard metal detected from a spoil heap at Kirkby Stephen; b) periods represented in the hoard.

### 8.2.2.16. 2023 T768, 2023

Known by the local Finds Liaison Officer as ‘north-east’ and ‘near Bamburgh’ this hoard was recovered by detectorists in 2023. There are 43 coins in the hoard, however the condition of many of them is poor, so 17 were able to be attributed to a period. Of these, periods 3, 4 and 5 were represented, with the highest proportion from period 3.

Period	No.	%
1	0	0.00%
2	0	0.00%
3	10	58.8%
4	4	23.5%
5	3	17.7%
0	26	
total	43	
total periodised	17	

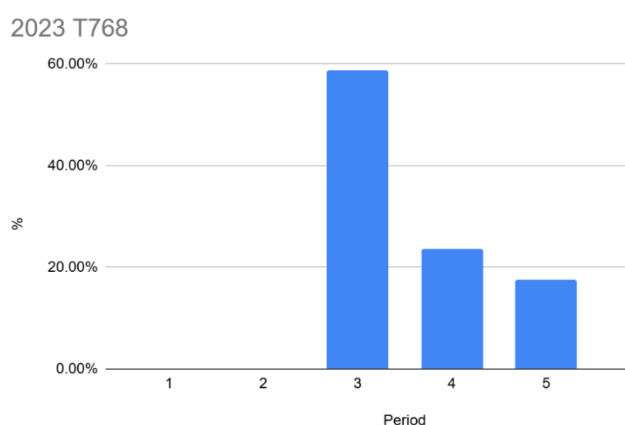


Figure 8.20a-b: a) coins from the hoard T768, 2023; b) periods represented in the hoard

### 8.2.2.17. Talnotrie hoard

In contrast to the preceding hoards, Talnotrie (see §2.2.6) is a mixed assemblage of coins, jewellery, raw materials, objects connected to metal working, and some raw materials. Coins in the assemblage include six Northumbrian pennies (see figure 8.21), four pennies of Burgred of Mercia, a fragment of a Carolingian denier and two dirham fragments (Maxwell 1913; Pirie 2000b). The jewellery includes a gold ring, a niello strap-end and disc-headed pins, alongside silver wire for jewellery making as well as agate, jet, glass and a wax. The assemblage has been dated to between 875-900 and connected Viking activity. As a mixed hoard containing Northumbrian pennies, it is practically unique, with the exception of the Kirkoswald hoard which contained a trefoil ornament as well as hundreds of coins (Williams 2020). The Hexham hoard blurs the distinction slightly: the thousands of pennies therein were contained in a copper-alloy bucket, which itself could be seen as an object whose value was also being hoarded.

Authority	Moneyer
Aethelred II	1: Eanred
Redwulf	1: Coenred
Osberht	1: Eanwulf
	2: Derivatives

Figure 8.21: Northumbrian pennies in the Talnotrie hoard

### 8.2.3. Summary of hoard chronologies

Figures 8.21 and 8.22 show the proportions periodised coins from sixteen Northumbrian hoards. Whilst there are significant differences in the sizes of assemblage and disparity in the completeness of the data used, a range of observations are possible. In this section I examine each period of production in turn, summarising the data and drawing conclusions on the relative chronology of the assemblages.

Period 1 (c.818-c.845) is the period least represented in Northumbrian coin hoards. The base silver pennies produced in period 1 are present in six hoards: York (1831), Hexham, St Leonard's Place, Bolton Percy, 'near Bamburgh' (1999, 2002) and Tadcaster. Hexham has the highest proportion of period 1 material, followed by the much smaller assemblage of Tadcaster. Hexham's date of concealment has previously

been recognised as earlier than that of the other largest hoards (see §2.2.3), so a larger proportion of period 1 material would be expected. Concealment might therefore date to c.854, very early in Aethelred II's second reign. York (1831), St Leonard's Place and Bolton Percy all have lower proportions of period 1 material which could reflect a later date of deposition.

Period 2 (c.845-c.850) reflects the change in the metal from a base silver to copper alloy under Eanred. Coins from this phase of production are present all hoards bar three: those are 'near Bamburgh' (2023), Kirkby Stephen and Asselby. None of these assemblages contain coins from period 1. Interpretations include: the hoarding of coinage was triggered for the owners of these assemblages during production of period 3; alternatively, the areas where these hoards were assembled (which may not be the same as the findspot) had coins from periods 3 to 5 in circulation. The presence of material produced in period 2 varies across hoards, from 6% in the Wharton hoard to 28% in the 'Bath' hoard.

Period 3 (c.850- c.854) reflects the changes in production and new moneyers used after the accession of Aethelred II to the throne. It is the period with the highest levels of coin production, under Aethelred II, Redwulf and Archbishop Wigmund of York. All hoards include material from period 3, with the lowest proportion in hoard structure in Asselby with 15%, and the highest of 59% in 'near Bamburgh' (1999, 2000). For the Hexham, 'Bath', North-east 2023 T768, Bamburgh (1999, 2002) and Kirkby Stephen hoards the highest proportions of material in these assemblages are from period 3.

Period 4 (c.854-c.859) is marked by a change in production shortly into Aethelred II's second reign. Like period 3, all hoards have material from period 4, with the lowest proportion in the Hexham hoard at 2%. Kirkby Stephen and Beverley have similarly low numbers of coins from this period. The hoard with the highest representation of material is 'near Bamburgh (1999, 2000) where it comprises 24% of the assemblage.

Period 5 (c.859-c.867) is potentially the final phase of production of Northumbrian pennies. All hoards, apart from Hexham, contain period 5 material. The lowest proportion is in the 'Bath' hoard at 16% and the highest proportions are in the Asselby and Beverley hoards at 65%. Whilst caution should be observed when using

proportional analysis for smaller hoards, it is striking that the number of period 5 coins in some hoards is higher than at both Torksey (36%) and Aldwark (54%).

<b>Period</b>	<b>Hexham</b>	<b>Bath</b>	<b>near Bamburgh' 2023 T768</b>	<b>York, 1831</b>	<b>St Leonard's Place</b>	<b>Harswell</b>	<b>Wharton</b>	<b>near Bamburgh' 1999, 2002</b>	<b>Bamburgh Castle</b>	<b>Bolton Percy</b>	<b>Tadcaster</b>	<b>Lancashire'</b>	<b>Kirkby Stephen</b>	<b>Opera House</b>	<b>Asselby</b>	<b>Beverley</b>
<b>1</b>	25%	0%	0%	1%	1%	0%	0%	0%	0%	2%	8%	0%	0%	0%	0%	0%
<b>2</b>	22%	28%	0%	15%	10%	18%	6%	18%	14%	16%	15%	16%	0%	14%	0%	9%
<b>3</b>	51%	48%	59%	53%	51%	36%	42%	40%	42%	38%	15%	34%	54%	23%	15%	22%
<b>4</b>	2%	8%	24%	9%	14%	18%	23%	11%	11%	11%	23%	11%	4%	14%	20%	4%
<b>5</b>	0%	16%	18%	22%	23%	27%	29%	32%	33%	34%	38%	39%	42%	50%	65%	65%

Figure 8.21: Comparison of hoards according to percentage of coins per period.

### Comparison of periodised hoard profiles

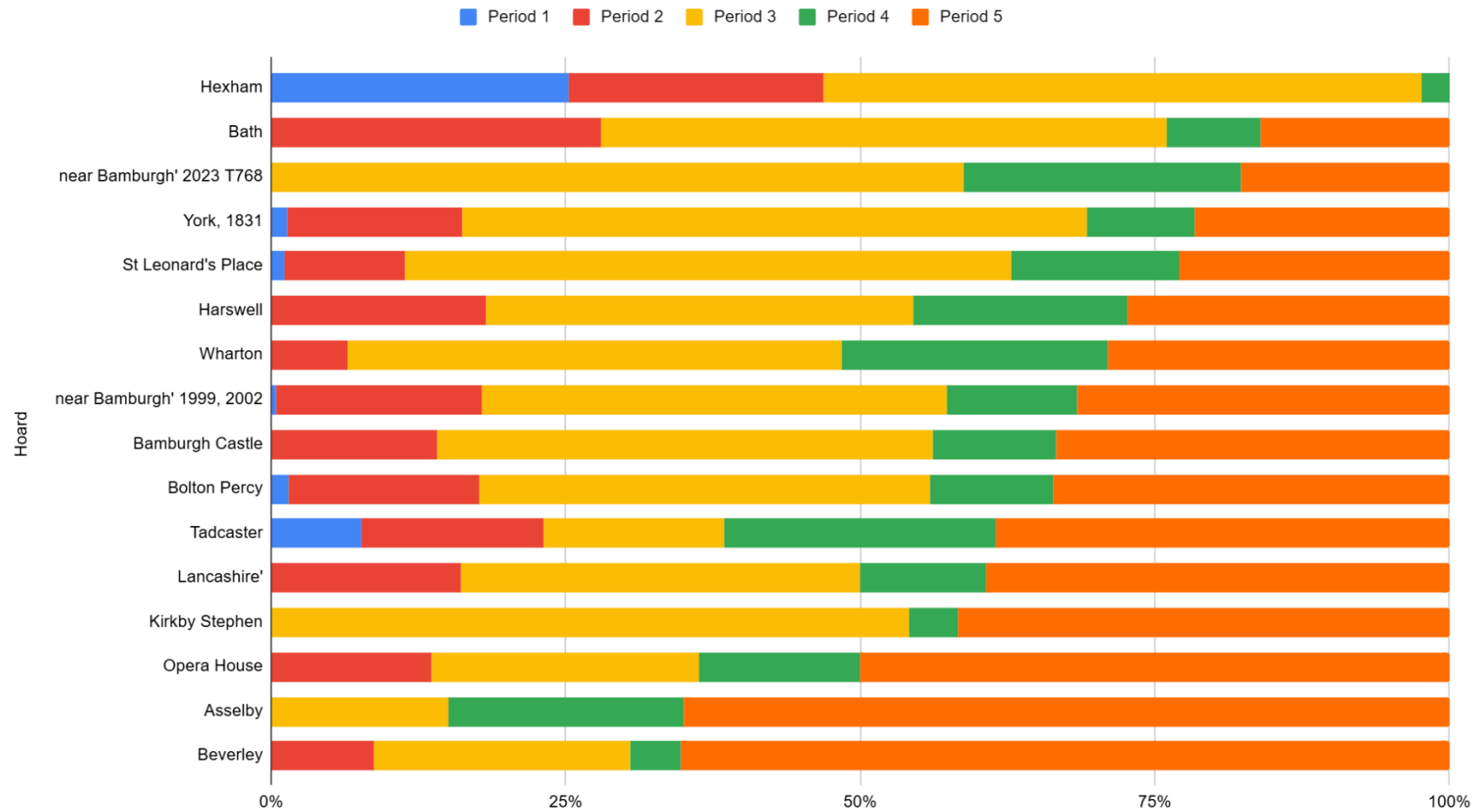


Figure 8.22: Diagram comparing proportions of coins by period across hoards

Returning to the premise that the higher the proportion of coins from later periods, the later the date of the assemblage, the dates for Torksey and Aldwark can be used as anchors to connect the relative chronology of hoarded material with more absolute chronology. This is shown in figure 8.23. It indicates that if these hoards are compared to the Viking Great Army assemblages, and if those reflect the coinage that was in circulation, then the hoards of Bolton Percy, Tadcaster, ‘Lancashire’, Kirkby Stephen, London Opera House, Asselby and Beverley may be contemporaneous to the period from c.872-c.875, or later. They also therefore provide evidence for the continued circulation of Northumbrian coinage, and its concealment, several years after cessation has previously been proposed. This strongly suggests that circulation was continuing well into the 870s.

<b>Name of Viking camp</b>	<b>Date of occupation</b>	<b>% of period 5 coins</b>	<b>Hoard</b>
		34	Bolton Percy
<i>Torksey</i>	<i>872-873</i>	36	-
		38	Tadcaster
		39	‘Lancashire’
		42	Kirkby Stephen
		50	London Opera House
<i>Aldwark</i>	<i>874-875</i>	54	-
		65	Asselby
		65	Beverley

Figure 8.23: comparing percentages of period 5 coins against the Torksey and Aldwark assemblages

Relative chronology can also shed light on the hoards in the York area, which were assumed to be concealed in c.867 with Viking takeover of York. Indeed York (1831) and St Leonard’s Place hoards have similar proportions of period 5 coins at 22% and 23% (see figure 8.21) and were concealed close to each other in the city, suggesting they were concealed at a similar time in response to the same external stimulus. However, the Bolton Percy and Tadcaster hoards have similar period 5 profiles too at 34% and 38% and are both to the south-west of York on the River Wharfe. The Bolton Percy hoard parcels were found within metres of the river, whereas the findspot for the Tadcaster

hoard is within 300m of the present-day waterway. Perhaps these hoards continued to be added to before deposition.

Whilst acknowledging the increasing presence of coins produced in period 5, it is also important to review the presence and absence of coins from periods 1 and 2 in certain hoards. Coins from period 1 are present at Torksey in low numbers but are absent at Aldwark. This suggests either some limited continuation of circulation, or perhaps that the hoards that contain period 1 coins were aggregated over longer periods than the others. Thinking back to Grierson's classifications of hoards, perhaps the presence of period 1 coins indicates a function related to longer-term 'savings'. Of the six hoards - Hexham, York 1831, St Leonard's Place, Bolton Percy, 'near Bamburgh' and Tadcaster - the first four, which have been associated with ecclesiastical wealth due to findspots, could be examples of institutional wealth. Hoards where periods 1 and 2 are absent are 'north-east' 2023 T768, Kirkby Stephen and Asselby. Explanations for why this might be are twofold: that the assemblers of the hoards only began to save during period 3 production, or that the only coins circulating when the hoards were concealed were periods 3 to 5. The latter is more doubtful since the Kirkby Stephen hoard was concealed close to Wharton, and it does contain period 2 material.

Another feature of the profiles of the hoards is that those in different regions can have similar profiles, for example the Wharton (Cumbria) and Harswell (East Yorkshire). Similarly, Beverley and London Opera House also have similar profiles to each other, and there are die-linked coins between the assemblages. Whilst hoards can of course travel considerable distances prior to concealment, and it is likely this is the case for London, it does also support the evidence from chapter 6 that Northumbrian coinage circulated at a high velocity. Once coins are struck, they appear to very swiftly be exchanged. This speed is also apparent in the number of hoards concealed within a very short chronology. Hexham aside, the fifteen other case studies here were all likely concealed between the mid-late-860s and the mid-870s. This means that there was a gap in hoarding activity between the deposition of the 'Railway' hoard in York in the first decades of ninth century, to c.854 and the deposition of Hexham (see figure 8.24). The figure also demonstrates that hoard chronology also aligns with the potential impact of Viking activity and provides further evidence that hoarding continued into the mid-870s.

Dates	Percentage of period 5 coins	Northumbrian hoards	Great Army activities
c.854	0	Hexham	
mid-late-860s	< 30%	'Bath', 2023 T768, York 1831, St Leonard's Place, Harswell, Wharton	Vikings attack York c.866; Osberht and Aelle killed c.867
early-870s	30-50%	'near Bamburgh', Tadcaster, Bamburgh Castle, 'Lancashire', Kirkby Stephen, Bolton Percy, London Opera House	Vikings over-winter in London, 871-872; Vikings overwinter at Torksey 872-873
mid-870s	>50%	Asselby, Beverley	Viking Great Army at Aldwark c.874-875.

Figure 8.24: comparison of dates for potential hoard concealment alongside percentage of period 5 coins and activities of the Viking Great Army.

#### 8.2.4. Derivative issues

Derivative issues are present in all hoards. Continuing the focus on the chronology of Northumbrian hoards, this section examines relative numbers for hoards that have 10 or more coins from period 5 in them. These hoards are York (1831), St Leonard's Place, 'near Bamburgh' (1999, 2002), Bamburgh Castle, Bolton Percy, 'Lancashire', Kirkby Stephen, London Opera House, Beverley and Asselby. As discussed in §8.2.3. the hoards compared vary in size, so some caution is required, but we can still make comparisons if this is born in mind. Figure 8.25 shows the proportion of period 5 material that is also a derivative issue. 'Near Bamburgh' (1999, 2002) has the lowest proportion of derivative material at 65%, followed by Asselby at 69%. For Kirkby Stephen and Beverley, derivative issues comprise 100% of the coins from period 5. The average across the hoards is c.82% of derivative issues. Most obviously this shows that derivative issues were hoarded alongside official issues, which emphasises that there was no difference in terms of value for coin users. Figure 8.26 also shows that, aside from 'near Bamburgh' and Asselby the proportion of derivative issues is relatively stable, since the hoards along the x axis are shown in order of potential chronology based on proportions of period 5 material.

<b>Hoard</b>	<b>Total no. period 5 coins</b>	<b>Di</b>	<b>Dii</b>	<b>Other</b>	<b>Total derivative</b>	<b>% of group 5 that is derivative</b>
York (1831)	68	8	45	0	53	78%
St Leonard's Place	441	24	339	0	363	82%
near Bamburgh (1999, 2002)	99	18	46	0	64	65%
Bamburgh Castle	19				16	84%
Bolton Percy	436	92	267		359	82%
Lancashire'	22				18	82%
Kirkby Stephen	10	1	6	3	10	100%
London Opera House	11	4	4	1	9	82%
Beverley	12				12	100%
Asselby	13	0	2	7	9	69%

*Figure 8.25: comparison of numbers and percentages of derivative issues in Northumbrian hoards*

## % of group 5 that is derivative

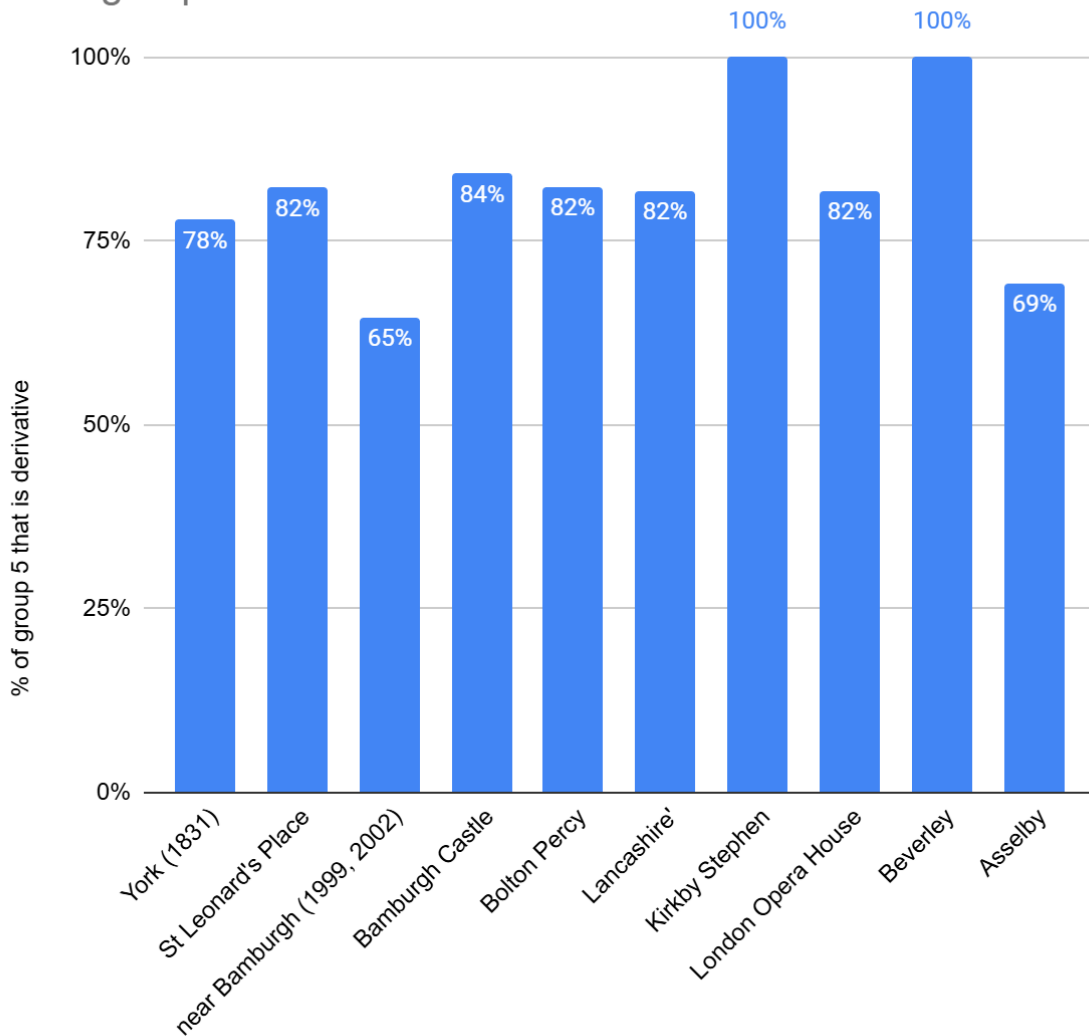


Figure 8.26: comparison of the proportion of derivative issues in Northumbrian hoards from mid-860s to mid-870s

For some of the hoards it has been possible to look further at the proportions of derivative material. This analysis has been dependent on either access to published data, or images of the coins themselves. Hoards where this was possible are York (1831), St Leonard's Place, 'near Bamburgh' (1999, 2002), Bolton Percy, Kirkby Stephen, London Opera House and Asselby. Results in figure 8.28 show variation between proportions of Di and Dii material between hoards, with London Opera House having the higher proportion at 44 % and St Leonard's Place at 7% the lowest of coins from group Di. For Dii coins, the picture continues to vary, with Asselby having no Di and 22 % Dii, but St Leonard's Place derivatives were 93% Dii. Three hoards had coins which

could not be attributed to either Di or Dii, and at Asselby this was most of the derivative material. If these are compared to derivative assemblages at Torksey and Aldwark, Torksey had 5% Di, 40 % Dii and 55% other, whereas Aldwark had no coins of Di, 20% Dii and 75% other (see §5.3). The proportions at Aldwark are similar to that of the Asselby hoard, but there is no clear comparator to Torksey’s derivative assemblage.

<b>Hoard</b>	<b>% Di</b>	<b>%Dii</b>	<b>% other</b>
York (1831)	15%	85%	
St Leonard's Place	7%	93%	
near Bamburgh (1999, 2002)	28%	72%	
Bolton Percy	26%	74%	
Kirkby Stephen	10%	60%	30%
London Opera House	44%	44%	12%
Asselby	0%	22%	88%
<b>Viking winter camp</b>			
Torksey	5%	40%	53%
Aldwark	0%	20%	75%

Figure 8.27: comparison of percentages of period 5 derivatives in hoards and winter camp assemblages

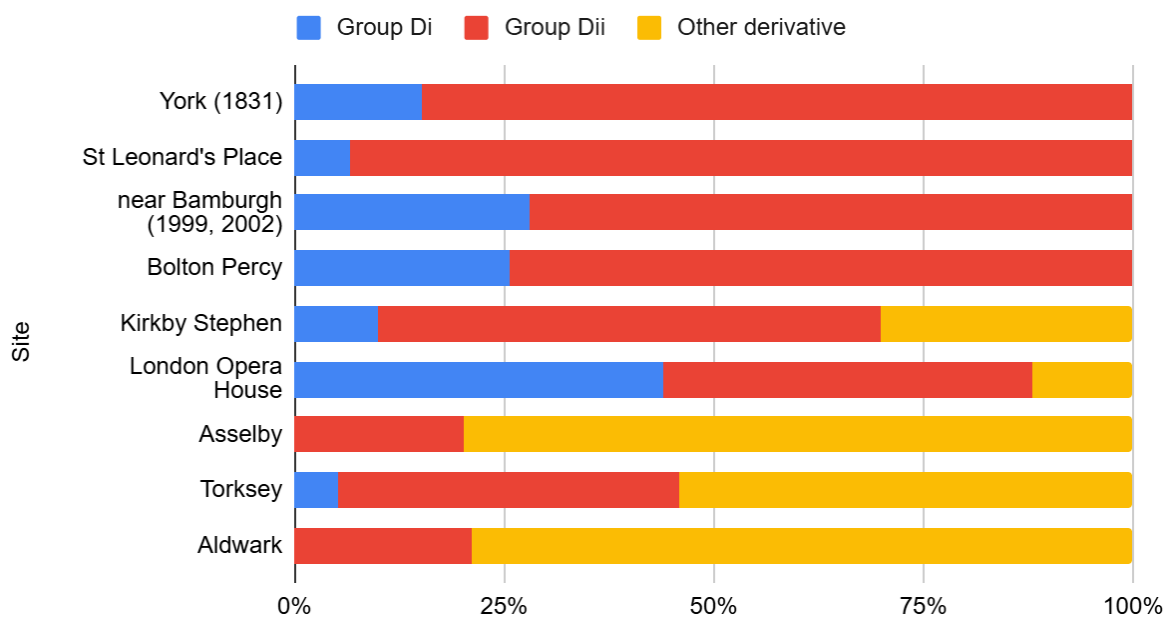


Figure 8.28: figure representing proportions of period 5 derivatives between hoards and winter camps.

## 8.3. Modification and re-use

This section examines Northumbrian pennies that have been altered or have been used in non-monetary ways such as inlaid weights and pierced coins. Where pennies are inlaid into weights, they form composite objects, which are part of a different means of attributing value. Rather than the value of the penny, the inlaid weight has a bullion value. Similarly, pierced pennies take a new form once attached or suspended from an object. For pennies that are pierced in the centre, these may have been attached to weights (Williams 1999), but for those pierced with a hole near the edge this use is less likely. Weights are first considered in §8.3.1 followed by pierced coins.

### 8.3.1. Weights

Weights inlaid with examples of insular metalwork are recognised as an artefact type associated with the activities of the Viking Great Army in the ninth century. They are one of several types of weight that have been found on sites associated with their overwintering, such as Torksey and Aldwark, and are part of the set of artefacts whose combined presence can be used to potentially identify a Great Army site (Hadley and Richards 2016). Weights can be divided into two groups: the first groups are copper-alloy and comprise two shapes, cubo-octahedral and oblate-spheroid weights; the second group, lead, have a much wider variety of forms (Williams 2020, 20). Whilst there is overlap between the groups, the former cubo-octahedral and oblate-spheroid ones appear to be linked to Islamic weight standards, and therefore indicate international trade relationships, whereas lead ones may reflect a range of, and potentially changing, Viking weight standards (Williams 2020, 21). In Scandinavia lead weights may have a punch-marked design, but in Britain more common are weights inlaid with a variety of objects, including glass; fragments of insular metalwork; coins, such as Northumbrian pennies.

Finds of weights inlaid with Northumbrian pennies have been published since the 1990s. Williams (1999, 24-25) recorded six weights inlaid with these coins, two from Norway and four from Britain. He also suggested that the coins associated with the Kiloran Bay boat burial (see §2.3.1) could have been part of inlaid weights (Williams

1999, 24). Pirie (2000, 282) recorded what she suggested was a weight from Sancton (now recognised to be from South Newbald) in 1981. The Portable Antiquities Scheme has also had an impact on the level of recording of this sub-type of inlaid weight, with 16 recorded on the database as of January 2025. These weights are listed in figure 8.29. This dataset only includes weights with spatial data and does not include unprovenanced material (Williams 1999, 26).

There is considerable variation in the condition and surviving detail of the coins inlaid into the weights. This includes examples where the coin is inlaid and legible, and, at the other extreme, where weights show only a space that looks like a Northumbrian penny has been removed. Between are a few weights where what remains is a worn copper alloy disc, which is likely to have originally been a Northumbrian penny. The weights also vary in shape, including: plano-convex, rectangular, cylindrical, discoid and ovoid forms, which are shown in figure 8.30.

Whilst there has been work on categorising and interpreting inlaid weights, there has been no recent analysis of them within the context of Northumbrian coinage, but rather with reference to their Viking context (Williams 1999). The highest proportion of weights have a plano-convex shape, and the distribution of weight forms is in figure 8.30. For some weights, where the coin is visible, we can compare whether obverse or reverse faces are used, or in figure 8.31 whether certain central motifs were more popular than others. Looking at metrology broadly, figure 8.32 examines weight according to spatial distribution and shows that heavier weights are found to the west and south of Britain, whereas lighter weights tend to concentrate towards the east. There are also concentrations of inlaid weights in Yorkshire and East Anglia. Considering distribution of central motifs in figure 8.31 the central cross appears in Yorkshire and to the east. The two examples of pellet in annulet are found in East Anglia, however the sample size is very small. More weights display reverses, and shape is evenly distributed in the areas where weights are present, apart from the rectangular weights (which are also the heaviest ones) which are found to the south and west.

No.	Weight (g)	Parish	County	Shape	Inscription	Central motif	Obverse/Reverse
BNJ 1999 GW No.10	16.43	Lowestoft	Suffolk		Eardwulf	Pellet in pelleted circle	Reverse
BNJ 1999 GW No.11	15.99	Torksey	Lincolnshire		VVEIREX		
BNJ 1999 GW No.8	18.25	Faversham	Kent		MONNE	Cross	Reverse
BNJ 1999 GW No.9	15.62	Colchester	Essex		Aethelred II + Eanred	Pellet in annulet	Reverse
CKN A4	20.42	South Newbald	East Riding	plano-convex	-	Worn	-
DENO-FC3487	20.17	Cotham	Notts	Plano-convex	Triangular D in legend	Worn	-
HESH-07F155	152.1	Colton	Staffs	Rectangular	-	Worn	-
KENT-3FBD73	32.9	Leeds (Kent)	Kent	Rectangular	-	Worn	-
LANCUM-4AF424	24.9	Salesbury	Lancs	Plano-convex	-	-	Inlay fallen out
LANCUM-4EDD1E	22.57	Roosecote	Cumbria	Plano-convex	-	pellet	-
LIN-3DFD27	10.11	Bardney	Lincs	cylindrical	ERDERL(?V)DEX	cross	Obverse
<a href="#">LIN-956197</a>	unknown	Lissington	Lincs	discoid	-	Cross in circle	-
LVPL-5E4310	16.5	Skirpenbeck	East Riding	cylindrical	EDILRED REX	Pellet in circle	Obverse
NMS-0D47D0	11.36	Barnham Broom	Norfolk	cylindrical	+VVLFLIXV	cross	-

<a href="#">NMS-6786FC</a>	25.5	Long Stratton	Norfolk	Plano-convex	E__ER +	Pellet in annulet	-
NMS-8F3C0C	13.9	Coltishall	Norfolk	Plano-convex	-	Corroded	-
SUSS-5FCEDB	95.15	Patching	West Sussex	rectangular	-	Worn + partial	-
SWYOR-D00CF2	23.97	Walton, Leeds (near Thorp Arch)	West Yorks	Plano-convex	EDELHELM	cross	Reverse
<a href="#">YORYM-01F580</a>	5.7	Buttercrambe +Bossall	East Riding	plano-convex		Cross in circle	
YORYM-086AAB	27.9	Beswick	East Riding	cuboid	-	Worn	-
<a href="#">YORYM-8054B2</a>	16.4	Bagby	North Yorks	Plano-convex	+X_N__	Cross	

Figure 8.29: list of examples of Viking Age weights, inlaid with Northumbrian pennies

## Proportion of weight shapes

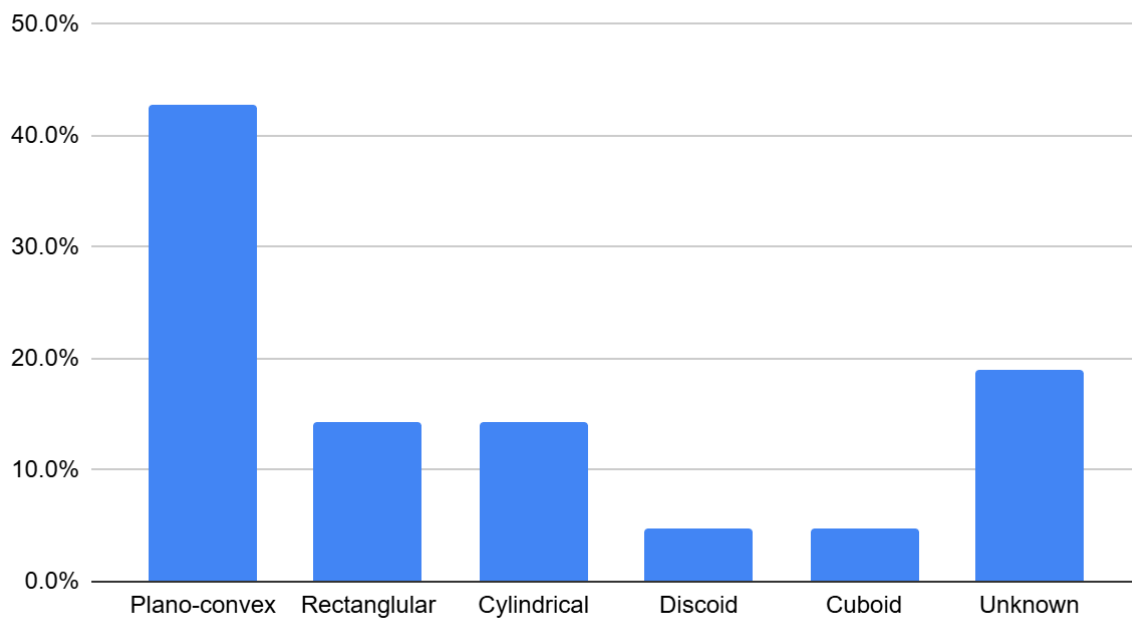


Figure 8.30: figure comparing percentage of shapes of each weight

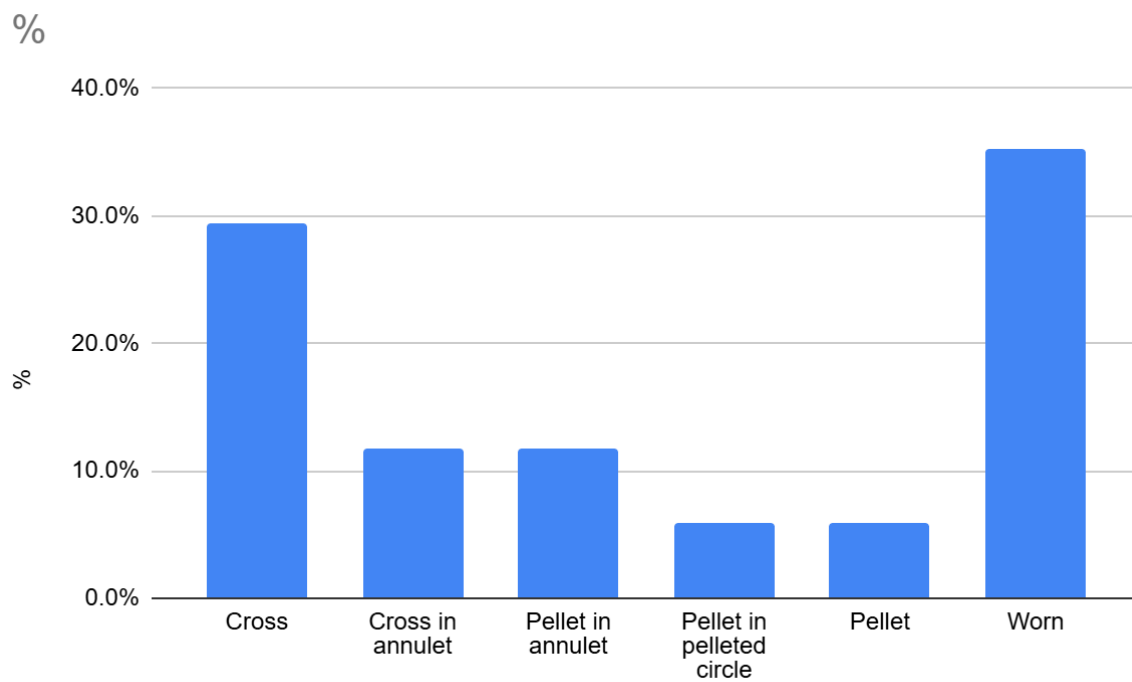


Figure 8.31: figure comparing percentages of central motif facing outward from weight.



Figure 8.32a-c: distribution maps showing a) inlaid weight by weight (g); b) inlaid weights by central motif; c) inlaid weights by shape.

### 8.3.2. Pierced pennies

The number of Northumbrian pennies that are pierced is lower than the number of weights inlaid with them. I found five examples using the Portable Antiquities Scheme and *Thrymsas*, *Sceattas* and *Stycas*, which are described in figure 8.33. These five examples have either been metal detected or excavated; there appear to be no examples from published hoarded material. With such a small number of finds, analysis is limited. However, we can look at spatial distribution and compare that to the location of the piercing in the coin, or the period of production that the coin dates to. A piercing at an edge perhaps makes suspension more likely, than attachment to a weight. Periods 2, 3 and 5 are represented in these pierced coins, which might tentatively indicate that period, or the date of the coin didn't matter.

ID number	X	Y	Obverse	Reverse	Parish	Piercing
<a href="#">YORYM-DDF225</a>	45792 6	44473 0	Illegible		Acaster Malbis	Centre
<a href="#">WMID-836844</a>	42568 1	21734 9	Derivative		Milton-under-Wychwood	Edge
<a href="#">DENO-002FC6</a>	48511 5	37835 1	Eanred	Monne	Torksey	Edge
Kiloran Bay 1	14016 8	69798 8	Aethelred II		Colonsay	Centre
Kiloran Bay 2	14016 8	69798 8	Wigmund		Colonsay	Centre

Figure 8.33: list of pierced Northumbrian pennies



Figure 8.34: example of pierced Northumbrian penny (DENO-002FC6), from close to Torksey (Atherton 2006)

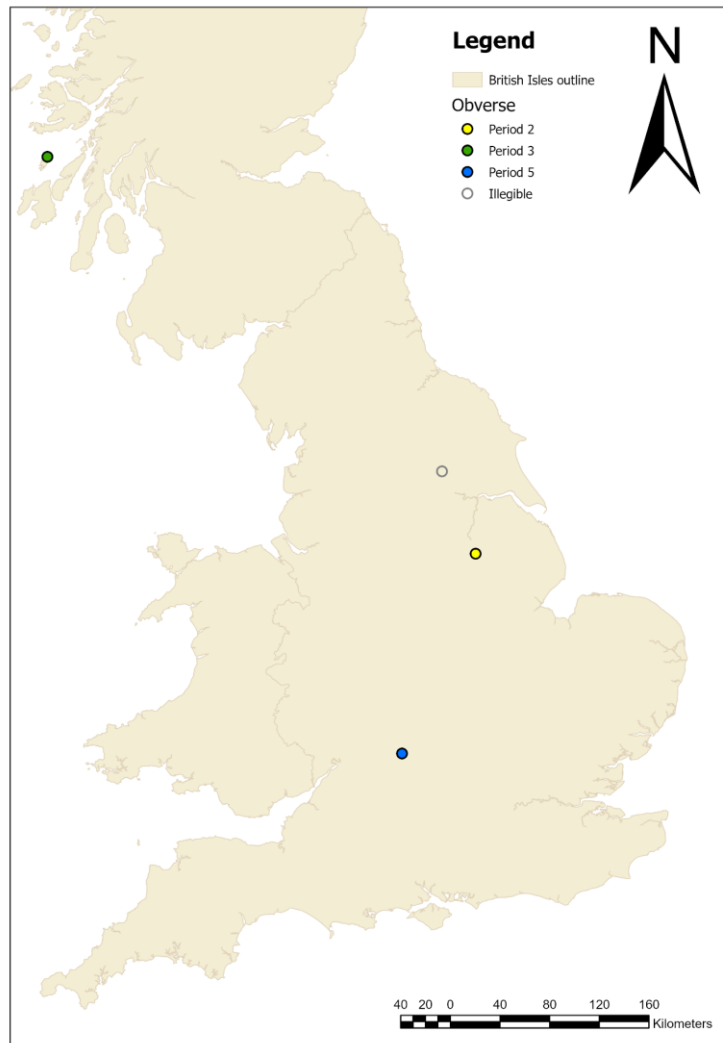


Figure 8.35: inlaid weights according to period of production for inlaid coin

There is one further Northumbrian issue that is also pierced and that is a gold coin, 20mm in diameter, modelled on the solidus which features a facing portrait of Archbishop Wigmund of York, with the reverse legend MVNVS DIVINVM. This a commemorative issue, in a similar manner to the silver Eanred penny (see §4.3.3), that would not have been part of a monetary economy. It is unique, and as figure 8.36 shows was pierced at some point during its object history, not necessarily contemporary to its creation.



Figure: 8.36: 1848,0819.171 - gold solidus in the name of Archbishop Wigmund of York. © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\)](https://creativecommons.org/licenses/by-nc-sa/4.0/) licence.

## 8.4. Summary

Hoarding and transforming practices removed Northumbrian coinage from circulation. For hoards, by comparing relative chronologies based on periodisation developed in this thesis, and then by comparing these to the assemblages from Torksey and Aldwark, we can revise the relative dating for some of these assemblages and demonstrate that coinage continued to be used contemporaneously to its use at Viking camps. The Hexham hoard also provides an absolute date, and this is used, alongside the Torksey and Aldwark data in chapter 9. Whilst there are issues with comparing hoards with such a range of sizes, there is a need to work with the data that is available, and metal detection has increased the number of known hoards in recent years, many of which are smaller. There are more of these smaller assemblages now known than the larger ones upon which the discipline was based, and their significance is key. Naismith (2012, 247) suggested that the number of large hoards might support evidence for inflation, but I think the corpus of smaller hoards does not support inflation in the period.

Returning to Kemmers and Myrberg's (2011) themes, *feeling* and *acting* emerge from this chapter. Firstly regarding *feeling* for inlaid coins, there does not appear to be a pattern as to which Northumbrian coins were used, or on what basis they were chosen. To me this demonstrates that the basic premise was that a Northumbrian penny was

chosen, regardless of authority or central motif. This suggests that it was the physical appearance and the general impression of the coin that was important for those who inlaid them into weights, rather than a more detailed understanding of the individual coins. This contrasts to the *acting* premise of the Kemmers and Myrberg article; no particular orientation was habitually used, and whilst crosses appear prominent that it is because they were integral to the designs and couldn't be avoided. I would argue it is not the Christianity of the pennies bearing crosses that was important, but a Northumbrianity that could be recorded by its incorporation into a weight. Whilst the pennies are dark coloured in museum collections today, it is important to remember that they would have been a much brighter colour reflecting the alloy when new. However, I think it is important to consider both these ways of re-using Northumbrian pennies, since they demonstrate that they had additional non-monetary purposes likely associated with the Viking Great Army. Taken alongside the revised chronology for Northumbrian hoards this shows that these weights and further interventions were also contemporary to the coinage being used, so rather than being a souvenir they perhaps have a more practical function.

## 9. Discussion

Chapters 2, 3 and 4 established the data, historiography and methodology that this study is based on, and chapter 5, 6, 7, 8 analysed that data according to method of recovery. This chapter builds on the preceding ones to address broad scale issues that are relevant to this thesis. It returns to the research questions set out in §1.3 and provides suggestions for avenues for future research.

### 9.1. Introduction

Kemmers and Myrberg (2011) argue that the separation of numismatics from other fields, such as archaeology and material culture studies, fails it. They emphasise the importance of contextualisation for the study of coinage, describing how coins “were never minted, used, deposited, retrieved or studied in a vacuum” (Kemmers and Myrberg 2011, 89). This is particularly applicable to the study of Northumbrian pennies, where research has been stifled by an over-emphasis on typology, disenfranchising the coins from their contexts. Kemmers and Myrberg define these contexts as primary, secondary, tertiary and quaternary. A primary context focused on production, a secondary on use, a tertiary on loss, and the quaternary on retrieval and study. This framing of production, use, loss and further study will be familiar to anyone who works on material culture, and I use it here to discuss in turn how this thesis has furthered understanding of Northumbrian coinage in §9.2, §9.3, §9.4 and §9.5.

Kemmers and Myrberg also think beyond these contexts, arguing that coins have agency and this can be viewed thematically, through the actions of feeling, belonging, acting and creating. Feeling, they argue is based on trust, through both visual and tactile recognition of the coin. This then “passes through a cultural filter” where interpretation and transformation create further meaning (Kemmers and Myrberg 2011). Interactions between Vikings and Northumbrian pennies show this through the re-use of these pennies and other coins within inlaid weights. Belonging speaks to how coinage can be used to construct, or reflect, identities from the local to the international. The article draws on the Euro and Roman provincial coinage as examples

for how one side of a coin can remain distinctive whilst the other becomes part of a wider polity. Kemmers and Myrberg argue that whilst it is commonly held that it is the issuing authority that uses coins to construct identities and those identities reflect the current or intended status quo, coinage can also be a tool to actively distinguish those who use it from others. Indeed, a Northumbrian exceptionalism has been suggested as a partial motivation for the use of copper-alloy for the coinage.

Acting - as a theme of agency - relates to the roles that coins can have in making statements and the changes that coinages can drive when outside their usual areas of circulation. For Northumbrian coinage, both aspects of acting can be seen, from the popularity of Christian crosses on the coins to make a religious statement, to the consideration of what extent they influenced activity outside Northumbria. Creating is the final theme of their paper. By this Kemmers and Myrberg refer to the use of coins as part of offering practises, of which hoards, and other depositions are a part. It also refers to roles that coinage can have as part of a votive practice. Whilst the latter is perhaps less relevant for Northumbrian pennies, they certainly are hoarded with differences in scale. These themes of feeling, belonging, acting and creating are returned to in §9.7, after discussion of production, use, loss, and retrieval and study.

## 9.2. Production

When considering production as the primary context in the biography of a coin, five familiar question words are apt to use: who, what, where, when and why. Namely, who was involved in production, what form did it take, where did it take place, when was this and why were coins produced at all? This thesis has predominately addressed the 'when' of production through the development of a new periodisation for the coinage. Here I briefly address what, who and where, before turning to when and why.

In terms of what, Northumbrian pennies are one denomination, and from c.845 late in Eanred's reign copper-alloy is used rather than increasingly debased silver. The quantities produced suggest that their value was lower than the silver pennies produced in neighbouring kingdoms. Northumbrian pennies generally feature the naming of the issuing authority – a king or an archbishop – on the obverse, and the

name of a moneyer on the reverse. The exceptions to this are many of the derivative coins, which were made from dies that imitate to varying degrees naming conventions from literate dies. Both sides have a central motif, with several variants from a single pellet to stars and concentric annulets, but most common of all is a single central cross.

This standardisation of design suggests that there was agreement between those who had the authority to commission dies, as well as die-cutters and moneyers, as to what a Northumbrian penny should look like. However, sources that describe coin production are sparse in the early medieval period, and what we can infer about who was involved in the process is deduced from contexts beyond that of ninth-century Northumbria. Naismith (2020) describes how for coins to be minted, demand for coin is a prerequisite, and for there to be trust in the coinage, traceability to those who were responsible for the manufacture the coins – the moneyers – is required. Pirie (1996) and Metcalf (2012) both suggested that the moneyers were also the die-cutters. However, in Naismith’s discussion, drawing on the coinage of Offa, Alfred and later early medieval coinages, he argues that these named moneyers were acting more like middlemen, accessing separately produced dies and then employing metalworkers to mint coinage. This is supported, with one potential exception, by Lyon (2017). The exception is the moneyer Leofthegn, whose name features on coins with particularly fine die-cutting, and one rare coin – depicted in figure 9.1 - with the only figurative motif in the coinage.



Figure 9.1: 1838,0202.261, coin of Leofthegn, with backward-looking animal; this coin is a singular design. © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\)](https://creativecommons.org/licenses/by-nc-sa/4.0/) licence.

Die-cutting itself was not a full-time occupation for any of those making dies, rather they were likely to be highly skilled artisans “in the service of a particular patron, such as a secular lord or ecclesiastical institution” (Naismith 2020, 497). None of the die-cutters can be identified, since no names are known, although it seems they were largely literate up to c.859 – able to write letters backwards to create dies. Smart (1987, 245) also connects die-cutters to wider literate cultures, describing how the designs must have been written down by scribes for the die-cutters to follow, and that the letter forms are part of an “orderly established convention” which is seen elsewhere in manuscripts such as the Durham Liber Vitae, which was written c.840 probably in Lindisfarne. The names of the king or bishop and the moneyer are all Old English forms, with one exception, that of the moneyer Odilo, whose name derives from Old French (Smart 1987, 248). This suggests that the majority of the moneyers were Northumbrian enough to have names that were already known in the region.



Figure 9.2: Coin of moneyer Odilo, minted on behalf of Aethelred II. © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\) licence](https://creativecommons.org/licenses/by-nc-sa/4.0/).

One further note to be explicit about is that all the names of moneyers are masculine, from this it can be inferred therefore that those who most likely held monetary control were men. However, as Elina Screen has argued, an absence of women’s names does not mean that coin production was done through exclusively male agency, and she contends that women may have been part of wider networks of coin production and circulation (Screen 2022). For Northumbrian pennies, the dual house of Whitby Abbey

and its assemblage connects to this nascent theme on gender, as well as the fact that some Northumbrian pennies are also found in Viking graves attributed to women, for example at Kingscross Point, Arran (see §2.3.1).

Even less understood are the die-cutters and moneymen who coined the derivative issues in the coinage. These coins demonstrate a reduction in the literacy of the die-cutters, mostly after c.859. This either means that existing die-cutters were disconnected from scribes supplying text, or that new die cutters were creating dies, but these figures did not have the same degree of “pragmatic literacy” as earlier ones (Naismith 2020, 497). That said, the legends on the derivative issues do form a spectrum, from known names to texts where letterforms bear just enough resemblance to literate ones for trust in the use of the coinage to continue. They show that it was important that dies were made that created coins that could still be believable to, and the large amounts used suggest that they were widely accepted as such, especially since most people would not have been literate at all.



9.3: 1869,0104.9 – derivative Northumbrian penny © **The Trustees of the British Museum**. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\) licence](https://creativecommons.org/licenses/by-nc-sa/4.0/).

Relating to **where** coin might be produced, Naismith describes three potential scenarios for the access to dies, which were not necessarily mutually exclusive. The first is that a single die-cutter supplied dies to moneymen in one minting location; the second that multiple die-cutters supplied moneymen in a single place; the third that a

die-cutter sent dies to multiple minting locations (Naismith 2020, 498). For Northumbrian coinage, die analysis provides evidence for the second scenario, since there are examples of coins where different moneyers used the same obverse die. This implies that moneyers were geographically close enough to pass the die between them; examples are known for some coins of moneyers Leofthegn, Brother and Wulfred (Pirie 1996, 32). This supports further argument that the coining of money took place in York; it was also an administrative centre for both the king and the church (§2.3.10). Laurence (1925) had argued for separate locations for regal and ecclesiastical mints, but there is no archaeological basis for this, nor is it supported by our understanding 100 years of how we estimate coining money functioned in the ninth-century.

Hoard evidence can also indicate that York was the centre for minting – it has by far the highest concentrations of hoarded Northumbrian pennies. §8.2.2. discussed the copper-alloy hoards, and York is also the location of the only known Period 1 hoard of earlier silver Northumbrian pennies (the ‘Railway’ hoard). The idea of workshops coining money in York was discussed by Lyon (2017, 28), who stated there was no further pattern that pointed to moneyers based elsewhere than York – but with the caveat that a “York moneyer” could move and sometimes strike coins elsewhere. What Lyon could not clarify was whether the range of spellings used on Northumbrian coins represented parallel die-cutting workshops, accessed by moneyers, or whether they showed chronological changes in a single workshop.

Pirie favoured an interpretation that there were multiple mints that were geographically widespread, but this view is little supported by her own evidence of closely interlinked dies. Since coining and die-cutting are separate undertakings, indicators of alternative locations for even temporary die cutters might be seen through more circumstantial evidence. Torksey has already be suggested as location where Northumbrian pennies might have been minted (see §5.2) based on a lead impression of a lunette penny of Burgred with a blundered inscription, a lead die impression of a solidus, two contemporary forgeries, as well as the high number of Northumbrian derivatives and the wider association with metalworking at the site (Hadley and Richards 2016, 50). Whilst chapter 5 did identify the proportion of derivative issues in the assemblage those

that had dies visible in CKN, a future study die study of derivation issues should isolate coins from Torksey that use dies that are not seen elsewhere. The blundered inscription on the Burgred penny could also indicate that dies were being modified at the camp.

Bamburgh has also been suggested as another potential location for a mint, and as at Torksey, there are strong associations with metalworking, and therefore potentially die-cutting, including the hoard concealed beneath a smithy. Like York, there are three hoards from the area, so if hoard concentration is potentially associated with a mint, however temporary, this provides a further indicator. Future collaboration with the Bamburgh Research Project and its subsequent publication will bring new evidence to light. In addition, a comparison of the dies used in the Bamburgh assemblages may be revealing. In §7.4.3.1 the association of industry and metal working in Building D at Jarrow noted that Northumbrian pennies were also found there. This may be relevant to the discussion of multiple sites for coining or die-cutting, considering the point that die-cutters may have been in ecclesiastical or secular patronage. Both Bamburgh and Jarrow could have provided that. With all three sites, it is not explicit that either Northumbrian dies or coins were produced there, but it is important to consider how a range of factors might indicate this practice.

The assumption is that the coins were minted in York, since it was the centre of royal and ecclesiastical power, however there is not yet any archaeological evidence for a ninth-century mint in York, and there a relatively low number of the coins excavated in York – a comparable number to Carlisle, as we saw in §7.4.2. There are sites where the coins have been found in association with metal-working evidence, at Jarrow, Bamburgh Castle and at Torksey. Bamburgh Castle has been previously mooted as a potential site for an additional mint, and at Torksey there is evidence for the imitation of coins other than Northumbrian pennies. Pirie was certainly a proponent of a multiple-mint hypothesis for the coinage, citing what she saw as a ‘Hexham style’ of die-cutting as evidence of this. However, this interpretation of multiple mint places has little further to evidence it. Another possible interpretation might be to look for peripatetic model for minting, which has been recognised in seventh-century Suffolk. However, that scale of coin production vastly smaller than in Northumbria, and the amount of

resource required for Northumbrian minting to move would have been considerable (Woods 2021, 53).

The question of **when** the coins were produced is a major element of this thesis. Integrating the relative and absolute chronologies to create a periodisation to enable comparison has revealed that there were five changes in production across the coinage (see chapter 4). Within these periods, there are various levels of precision, for some, such as period 1, die links assist in creating a relative chronology within the period, but for others, such as period 3, there is no discernible relative chronology, beyond an assumption that Redwulf would have minted after Aethelred II. From the corpus of extant coins, we know that the most numerous periods of production was period 3, and period 4 was the least. Once a period of production changed, the coins were not recalled and continued to circulate alongside new issues (see §9.3 and §9.4). We know that coins minted in Eanred's reign c.845 are found in the Torksey and Aldwark assemblages of 872-c.875. We can also say that it is highly probably that some production continued into the 870s: differences in between the Bolton Percy hoard and the winter camps show that the number of derivative issues was increasing. We also see through excavated material at Beverley and metal-detected hoards, such as Asselby. This means that the periodisation offered in chapter 4 also alters and period 5 therefore extends from c.859 – 870s.



Figure 9.4: YORYM-031F7A - penny of Osberht and Monne, part of the Asselby hoard (no. 13) (Griffiths 2019a)

The final question is **why** the coinage was produced. From the 830s onwards coinage in north-western Europe underwent debasement, evidenced by the reforms of Charles the Bald in 864 to restore the Frankish coinage, as well as reductions in silver content in silver pennies in Britain (Naismith 2017, 13). This debasement was gradual in the 830s but accelerated in the following decades. In parallel to this, Northumbria, under Eanred, from c.845 takes a deliberate decision to pursue this debasement and issue entirely copper-alloy coins. This policy would have had two effects: one to increase income for institutions who had the power to mint, in Northumbria the monarchy and the church; two, to facilitate exchange at, with and between wider range of levels of society. Exchange here would not always be goods, but increased tax and tithe. Group A derivatives indicate some loss of ‘official’ control; this could be viewed against a background of increased incursions to the kingdom. There is evidence that Eanred paid off Wessex in the early 800s, as well as Viking pressures, so a supply of money required on several fronts. This ‘Eanredian reform’ is arguably just as significant as reforms made to coinages by other authorities of the era. Another view on this, which future metallurgical research may be able to answer, is that copper alloy was adopted as a medium for exchange because it could – even partially – be sourced from within mines within Northumbria.

### 9.3. Use

This secondary phase in Kemmers and Myrberg’s model focuses on coin use. Some reasons for why coins were produced were outlined at the end of §9.2. Whilst §9.4 focuses on the circulation of Northumbrian pennies, based on patterns of coin loss, this section uses insight from case studies in chapters 6 and 7 to examine aspects of coin use. There are no documents from the period that state what the value of a Northumbrian penny was, so there is no way of reliably knowing what their purchasing power might have been. Abramson (2018, 94) attempted to provide an estimate, based on an estimate for “illustration only” that one Northumbrian penny might be worth 3 loaves of oaten bread, but this is a speculative proposal based on a series of

assumptions and the proposal has not been adopted elsewhere. Whilst we can't say what the coins were used to buy, information from excavated and metal detected sites can show what kinds of places purchasing was potentially occurring.

Northumbrian pennies have been excavated from a range of ecclesiastical and monastic sites, including Carlisle Cathedral, Monkwearmouth and Jarrow, Tynemouth, Whitby, Whithorn, Dacre, Lindisfarne, Hoddum and York Minster. For most of these sites, coins have not been excavated from within the churches. The exception to this is at Whithorn, where coins have been recovered from the site of the early church (see §7.4.5). For the remainder, coins are mostly clustered close to churches. Tynemouth, Whitby and Dacre have coins to the north of the church, whereas at Monkwearmouth and Whithorn coins are to the south, and at Hoddum the single coin is close to the east end. Transactions with coins do not appear to occur at the western side of churches. Blair (2005, 260) suggested that the coins at Whithorn were lost during transactions with stallholders set up in the precinct. At Whitby, Woods (2022) has suggested that the coins use there could be connected to tithe or other taxation. Spatial analysis of periodised coins can also suggest where points of exchange (whether for debt or for goods) might have moved. At Whitby coins from later periods concentrate to the north-west. At Whithorn, shift is to the south-east. This is not always the case, at York Minster, coins are used across the site, whereas at other locations finds are residual, so original contexts are lost, this is especially true for Black Gate at Newcastle where coins are residual finds in graves. Where coins are found further from churches, such as at Jarrow or at Green Shiel, Lindisfarne, they are perhaps more associated with industrial activity. Hoards are another way in which Northumbrian coins were used; all the hoards of one thousand plus coins are associated with church activities. However, what §8.2 highlighted was the range of sizes of hoard that have been discovered; this demonstrates that there was a spectrum of wealth that was considered hoardable.

Chapter 5 discussed the presence of Northumbrian pennies at the Viking camps of Torksey and Aldwark. Both had significant assemblage of Northumbrian pennies, with large proportions of derivative issues present (see §5.2 and §5.3). Their presence at the camps indicates that through some means, the inhabitants likely mostly people

associated with the Viking Great Army, had reason to keep and use them. The coins from Torksey were potentially from the edge of a zone of circulation that extended outside the traditional borders of Yorkshire (see chapter 6). The coin assemblage is also accompanied by an ingot assemblage, so whilst the coins we see are survivors, some may have been melted at the site. We know that bullion economies were central to Viking wealth transfer, and at Torksey there are examples of ingots in silver, gold and copper-alloy. They indicate that multiple bullion economies were in use in parallel, and in parallel to coin economies. This suggests that Northumbrian pennies were still required for use, either within or without the camp. Use within the camp is determined by the wide spatial distribution across the site. The inlay of Northumbrian pennies into weights, and the inclusion of these in the burials at Colonsay and Arran, and the hoard at Talnotrie, show that new uses and new meanings could also be created around the coins, within new cultural contexts.

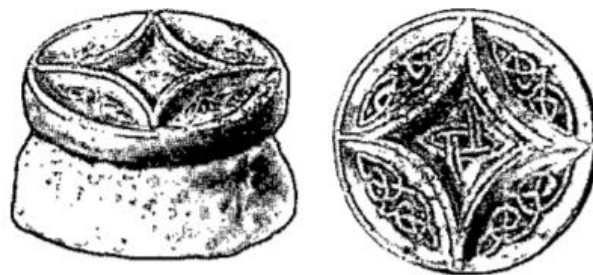


Fig. 1. Leaden Weight with ornamented top from Talnotrie. ( $\frac{3}{4}$ .)

*Figure 9.5: Illustration of a weight inlaid with insular metalwork from Talnotrie (Maxwell 1913)*

## 9.4. Loss and circulation

This tertiary phase in Kemmers and Myrberg's model is loss. By this they mean the accidental losses of daily usage which can be used as a proxy for understanding coin circulation (Newton 2006). These losses can be used to determine how influential the coinage was from Northumbrian and Viking perspectives. Section 9.4.1 examines how coin loss demonstrates how the extension of Northumbrian economic influence discovered in chapter 6 is confirmed and compounded with the inclusion of coins

recovered via other methods. The second question to what extent did the use of the coins by the Viking Great Army influence circulation (§9.4.2), and how encounters with the Northumbrian coinage affected those who used it in return.

#### 9.4.1. Extended Northumbrian economic influence

Chapter 6 used data from metal detected single finds to determine distribution patterns for Northumbrian coinage. Spatial analysis demonstrated that whilst loss of single finds was concentrated in the Yorkshire region, finds from south Yorkshire and Lincolnshire had significance. Optimised hotspot analysis used single finds to calculate an area (hotspot) where Northumbrian pennies are statistically significant finds. This area covers an area of Yorkshire that is recognised as a core area of circulation but also covered areas south of the Humber. Running analysis for all finds, and for each period, and for coins that may or may not be associated with the Viking Great Army; all brought similar distribution patterns. This is interpreted as the presence of an expanded zone of economic influence that remained relatively stable from period 2 onwards. This shows that the economic interaction across the Humber took place and is more significant than previously realised.

This pattern continues to be borne out by the addition of Viking camp and excavated data to that of metal detected finds (see figure 9.6). Kernel density analysis highlights clusters in Yorkshire, as well as Carlisle in Cumbria and Torksey in Lincolnshire, as areas with the highest densities of finds (see figure 9.7). Hoards in this section are recorded as a findspot, rather than by individual coins, to not skew the data unduly. Optimised hotspot analysis again demonstrated this sphere of circulation, and it is broadened by the inclusion of additional data (see figure 9.8).

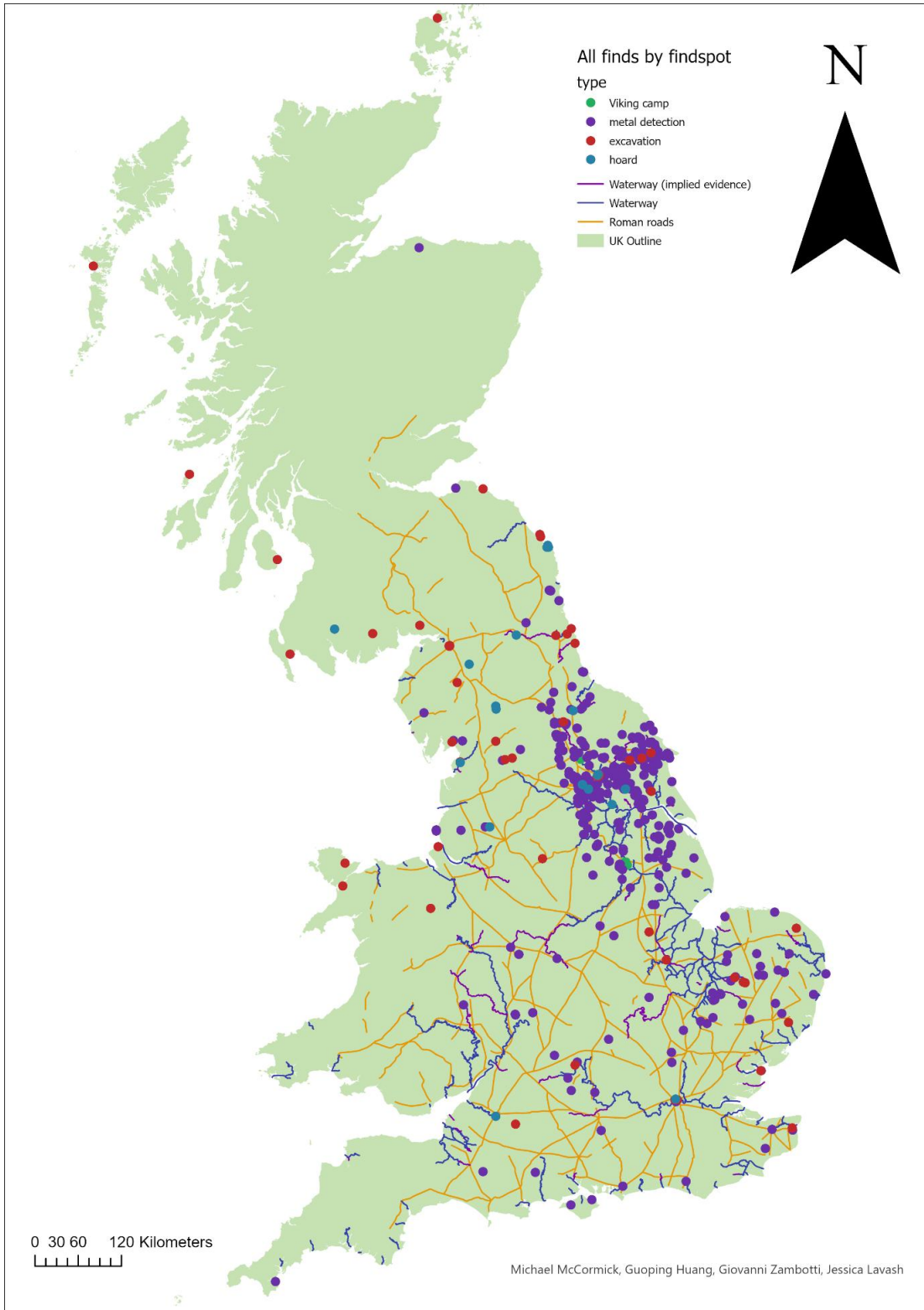


Figure 9.6: map of locations of findspots of Northumbrian pennies according to method of recovery.

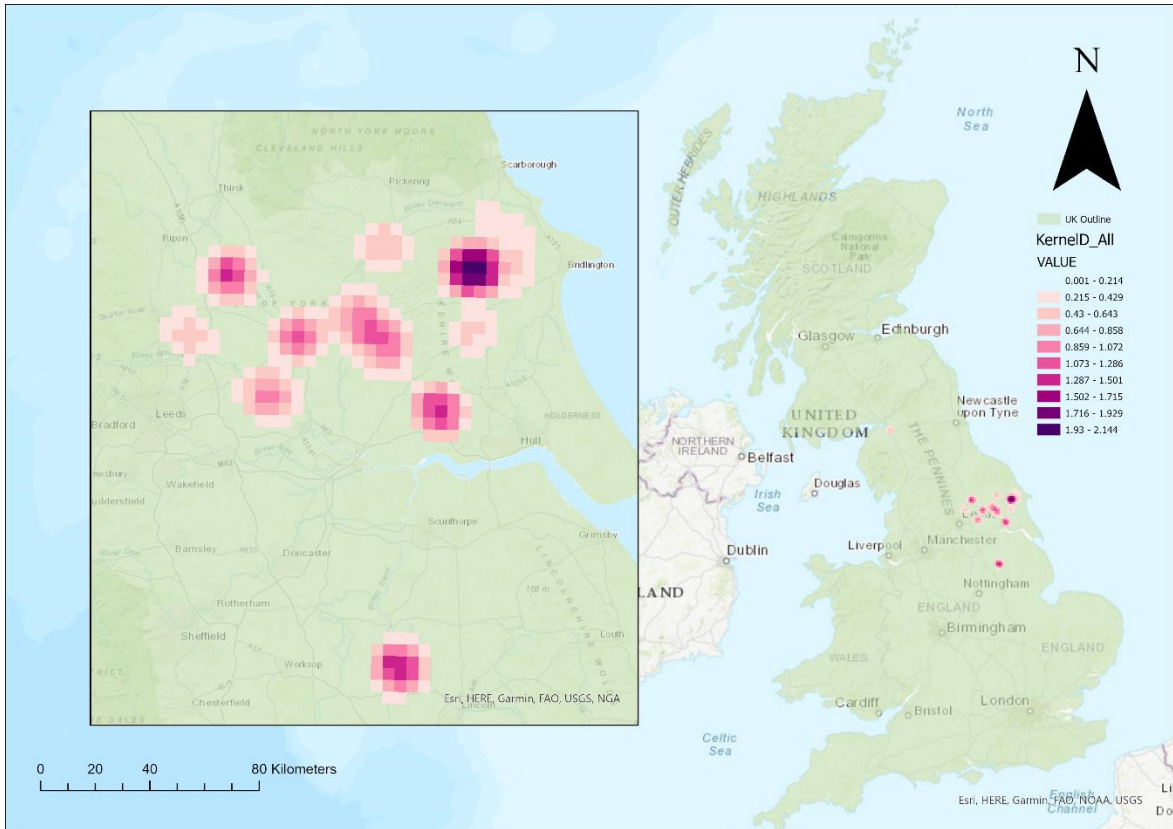


Figure 9.7: Kernel density map of all coin finds from all methods of recovery

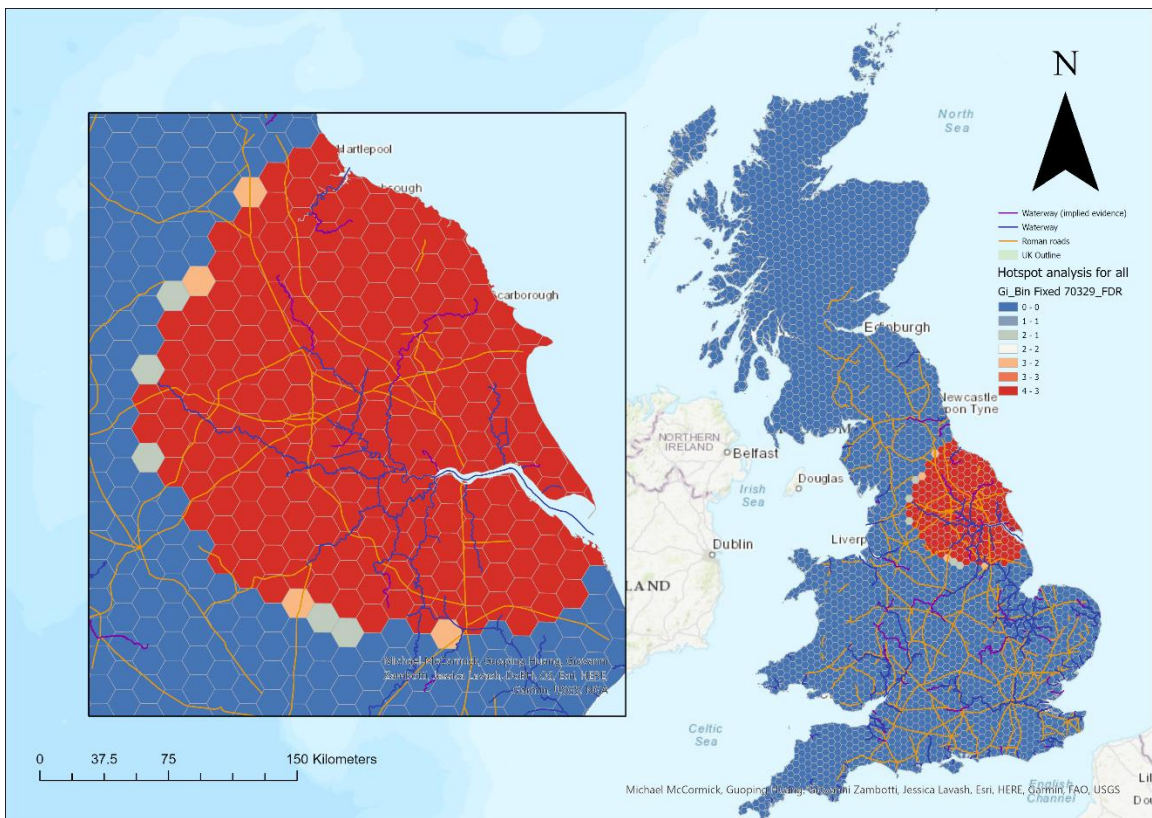


Figure 9.8: optimised hotspot analysis of Northumbrian pennies; hotspot highlights area in hex grid where coins are or are likely to be statistically significant

#### *9.4.1.1. Periodisation*

Re-examining the aggregated corpus of Viking camp, metal detected and excavated material according to period of production adds to understanding of circulation in period 1. This shows that it is very similar to previous analysis for periods 2 to 5. Finds from period 1 are illustrated by a map of findspots and of hotspots. It is the latter that is different to analysis in chapter 6. Here, with the inclusion of excavated material, a second hotspot is apparent in the south-west of Scotland, focussing on the finds from Whithorn Priory and others from the area. For periods 2 to 5, the hotspot remains focussed on Yorkshire and areas south of the Humber. The addition of new finds expands the hotspot and therefore the statistical likelihood that Northumbrian coins could circulate in the area. This expansion is shaped by the influence of Torksey and Flixborough, and their finds, but remains remarkably stable, indicating that whilst the mixture of material in circulation may have changed, its extent remained relatively stable.

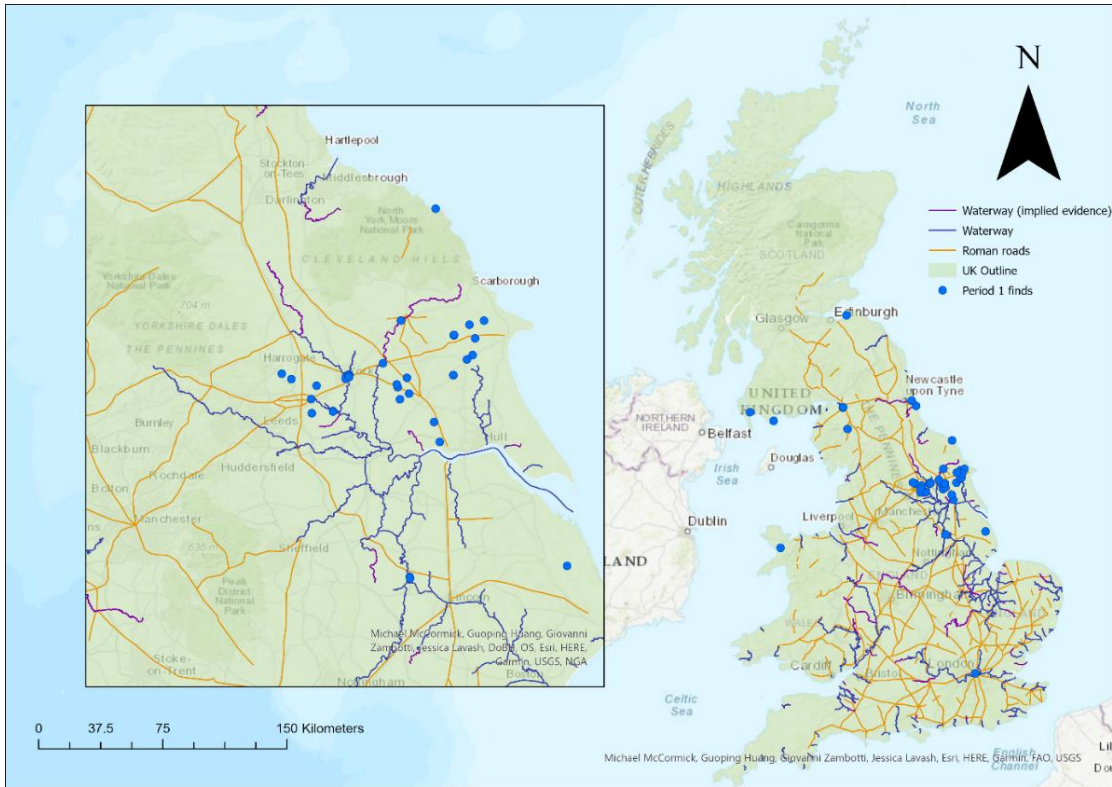


Figure 9.9: map of period 1 Northumbrian pennies alongside Roman roads and early medieval waterways

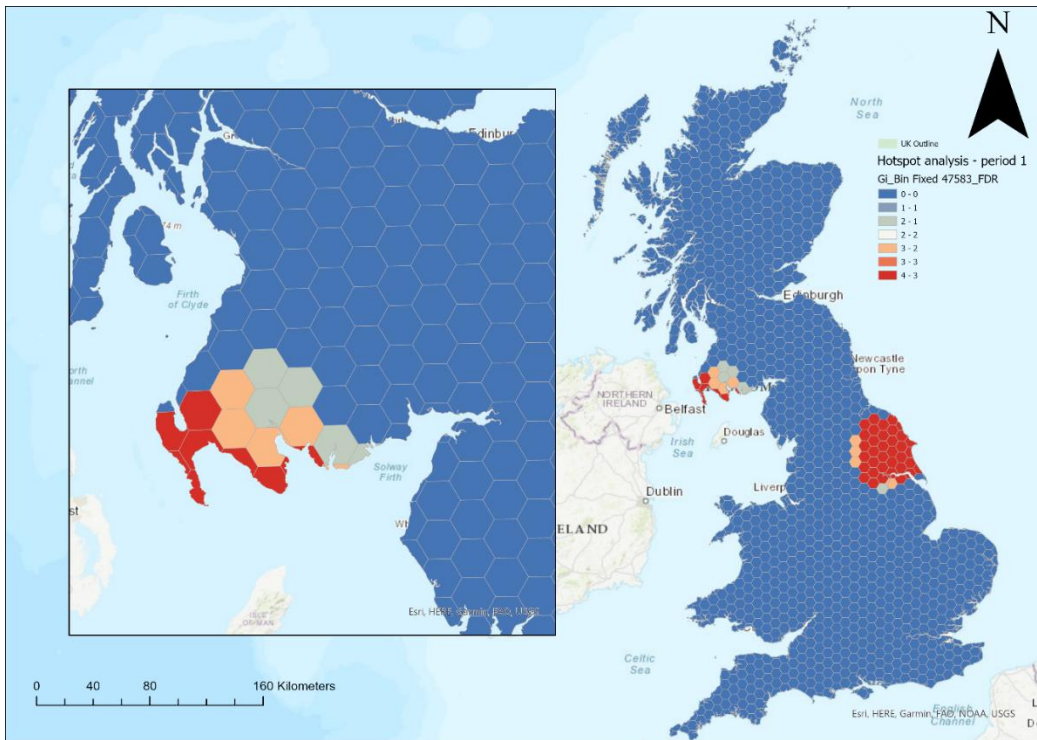


Figure 9.10: optimised hotspot analysis of all period 1 finds

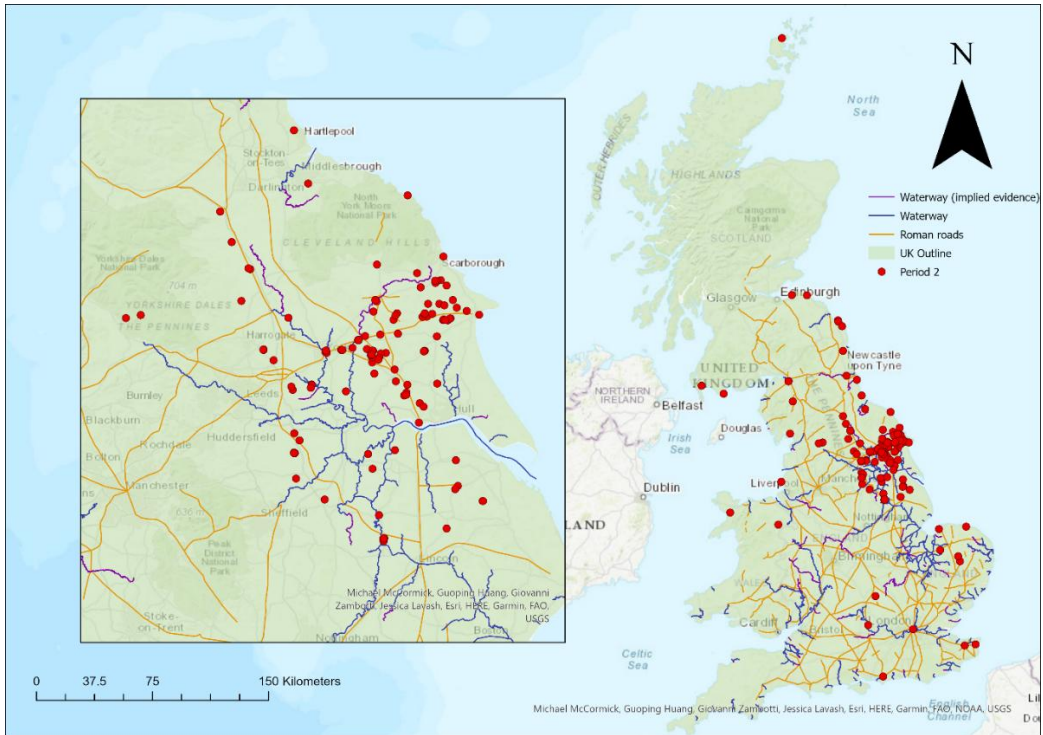


Figure 9.11: map of period 2 Northumbrian pennies alongside Roman roads and early medieval waterways

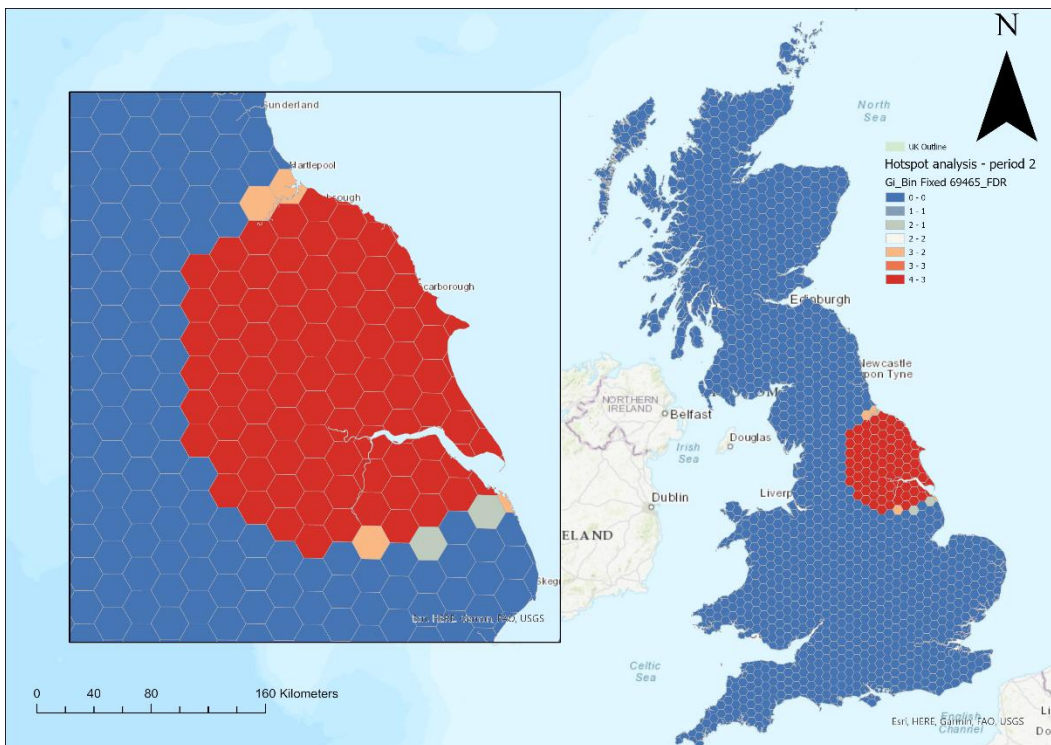


Figure 9.12: optimised hotspot analysis of all period 2 finds

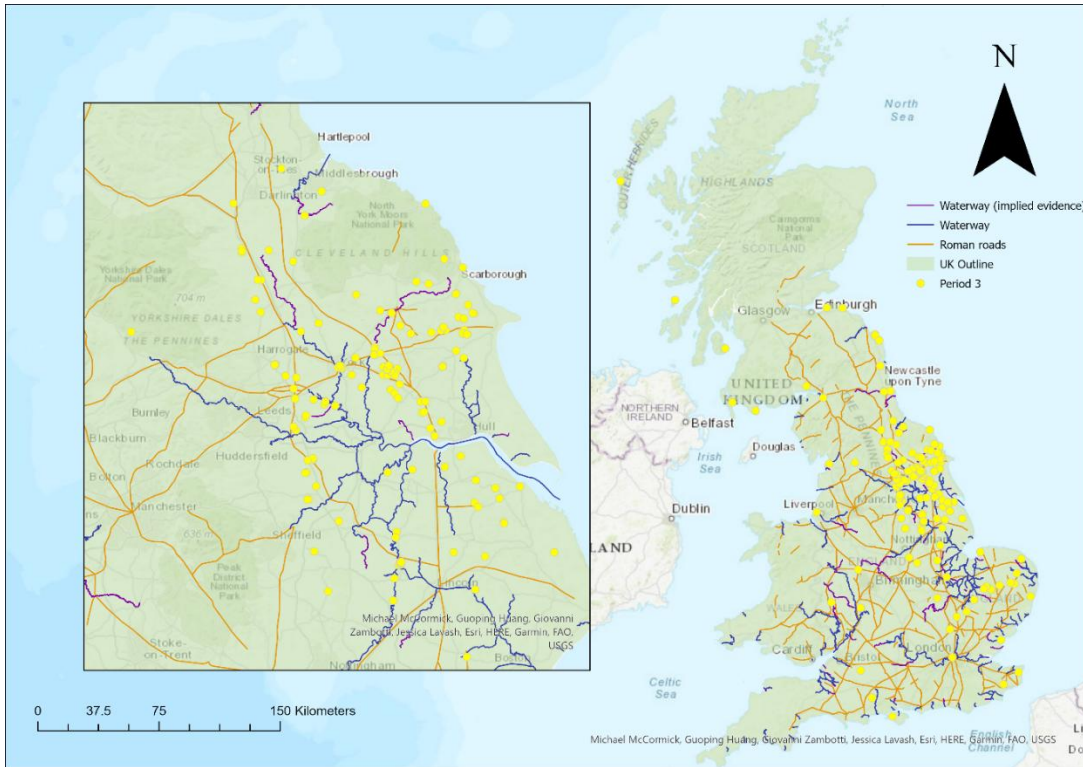


Figure 9.13: map of period 3 Northumbrian pennies alongside Roman roads and early medieval waterways

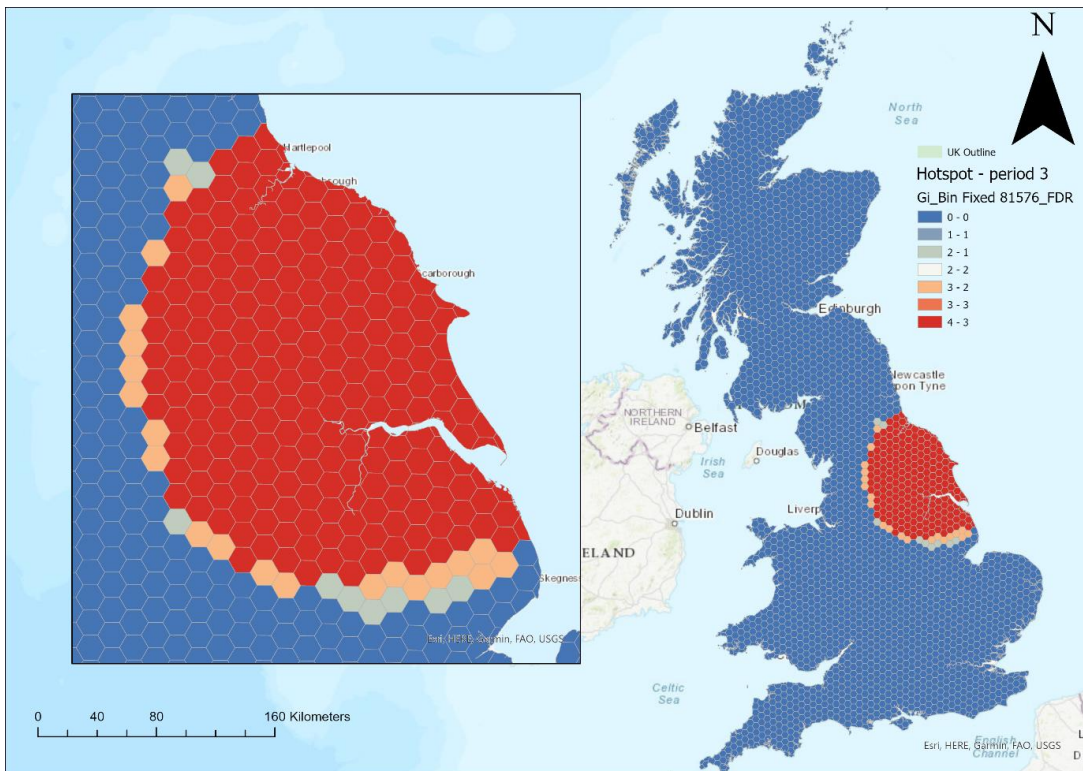


Figure 9.14: optimised hotspot analysis of period 3 finds

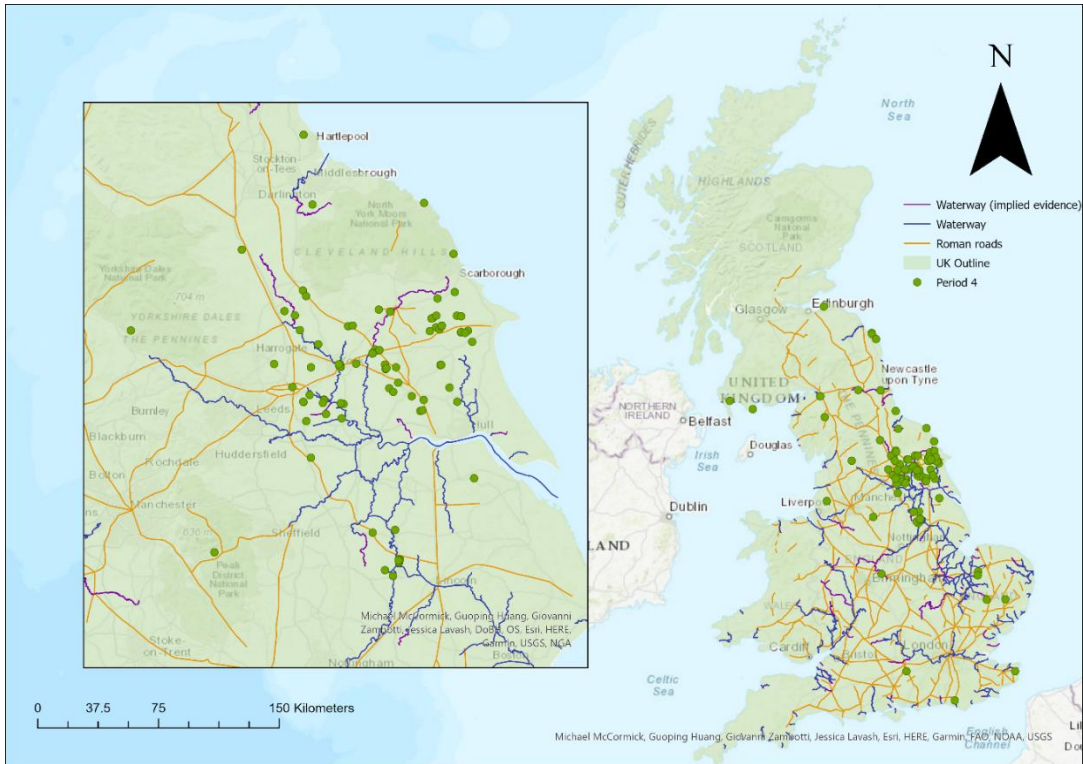


Figure 9.15: map of period 4 Northumbrian pennies alongside Roman roads and early medieval waterways

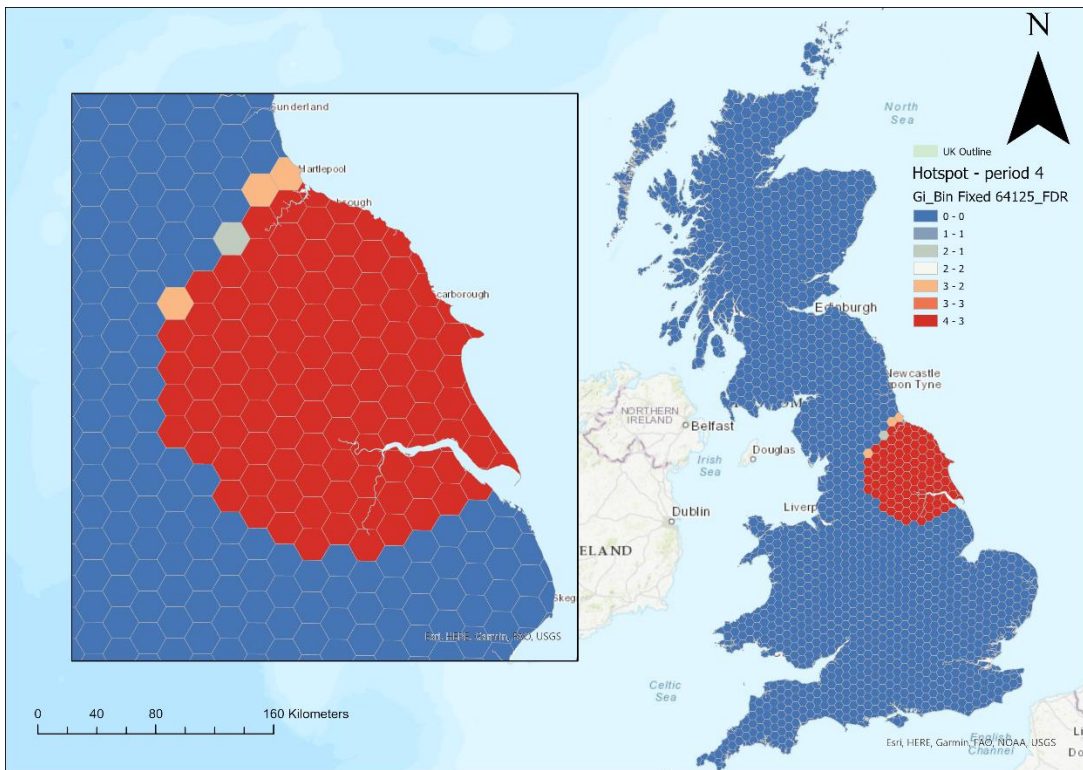


Figure 9.16: optimised hotspot analysis of period 4 finds

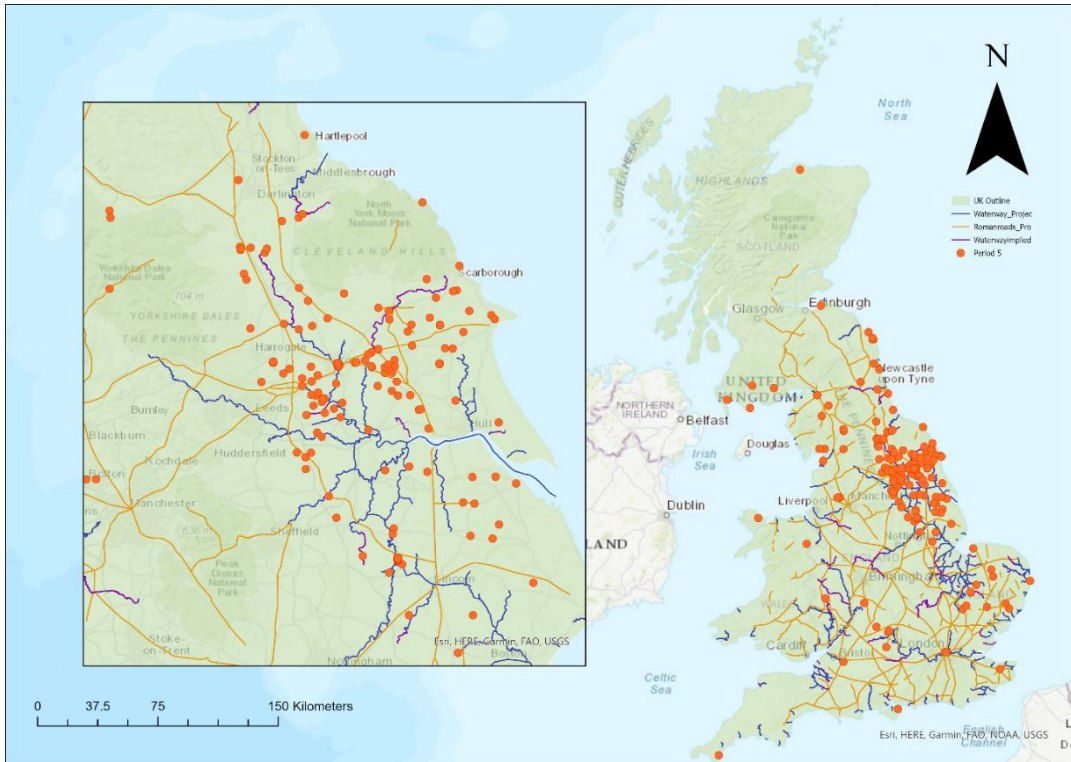


Figure 9.17: map of period 5 Northumbrian pennies alongside Roman roads and early medieval waterways

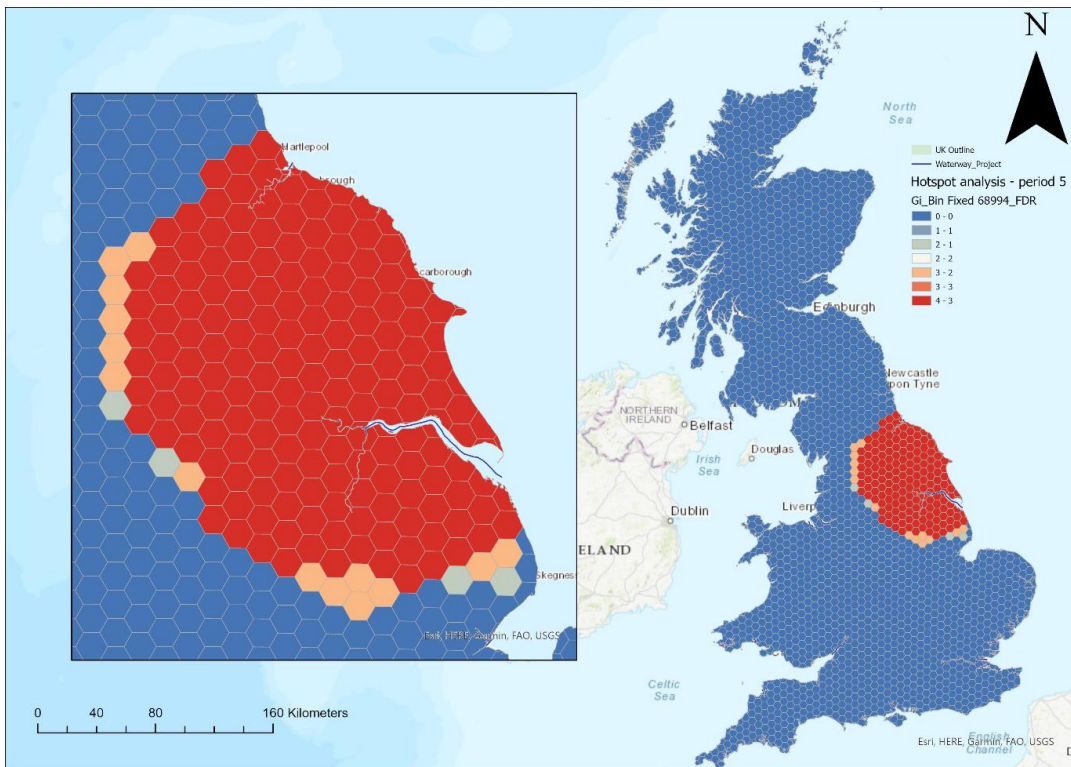


Figure 9.18: optimised hotspot analysis of period 5 finds

### 9.4.1.2. Derivative coinage

Derivative coins also show an extended area of circulation. This is conveyed in figures 9.19 and 9.22 which look at all derivative issues, which has a similar extent to periods 2 to 5. Comparison between derivative Group Di and Dii, shows that both have a hotspot that straddles the Humber. Dii has an expanded hotspot into Lincolnshire, but also north of the Tyne. This indicates that the coins from within the group circulated more widely than those of Di. Indeed Di, as discussed previously is not a die-linked group, but one where Pirie placed material outside the Dii die chain. Pirie did further define Dii into Reflective and Background groups, but further research is required to connect these sub-groups with available spatial data.

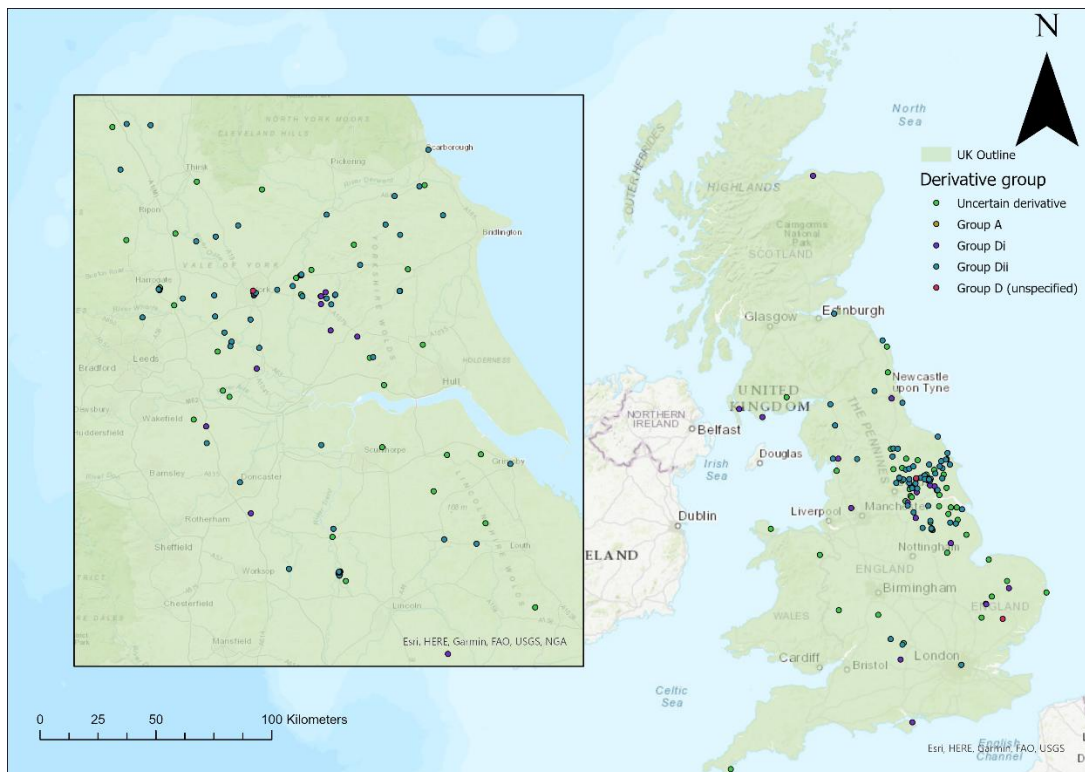


Figure 9.19: map of distribution of derivative issues by group

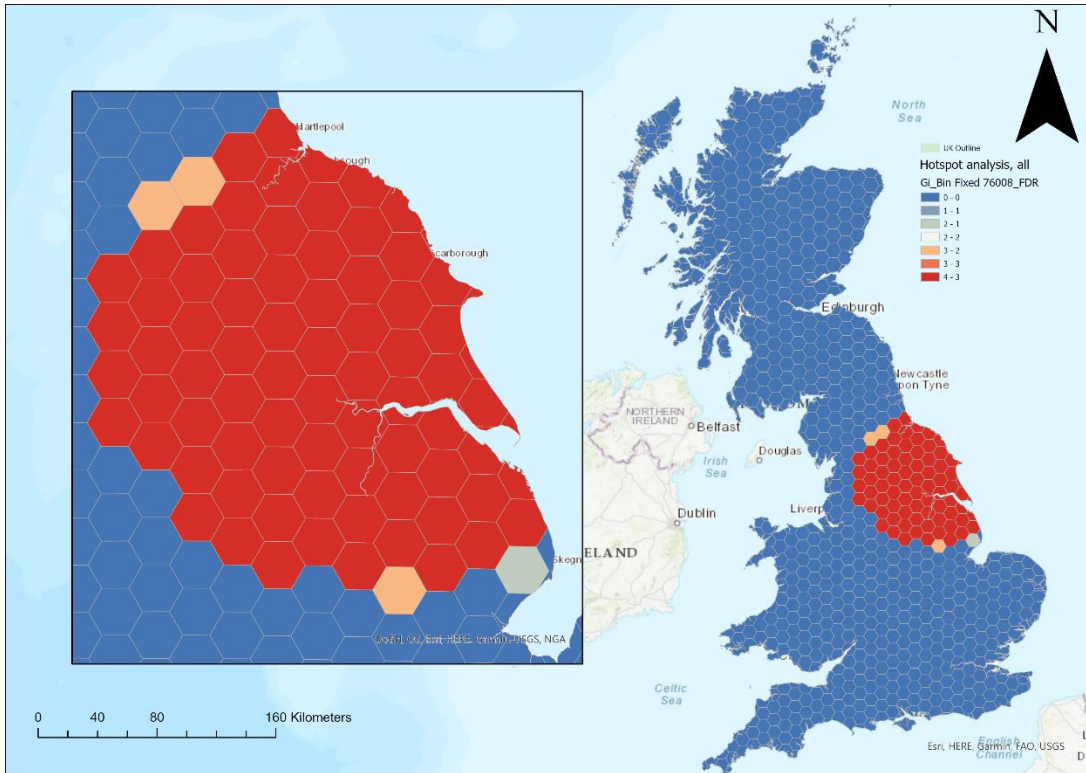


Figure 9.20: hotspot analysis of all derivative issues

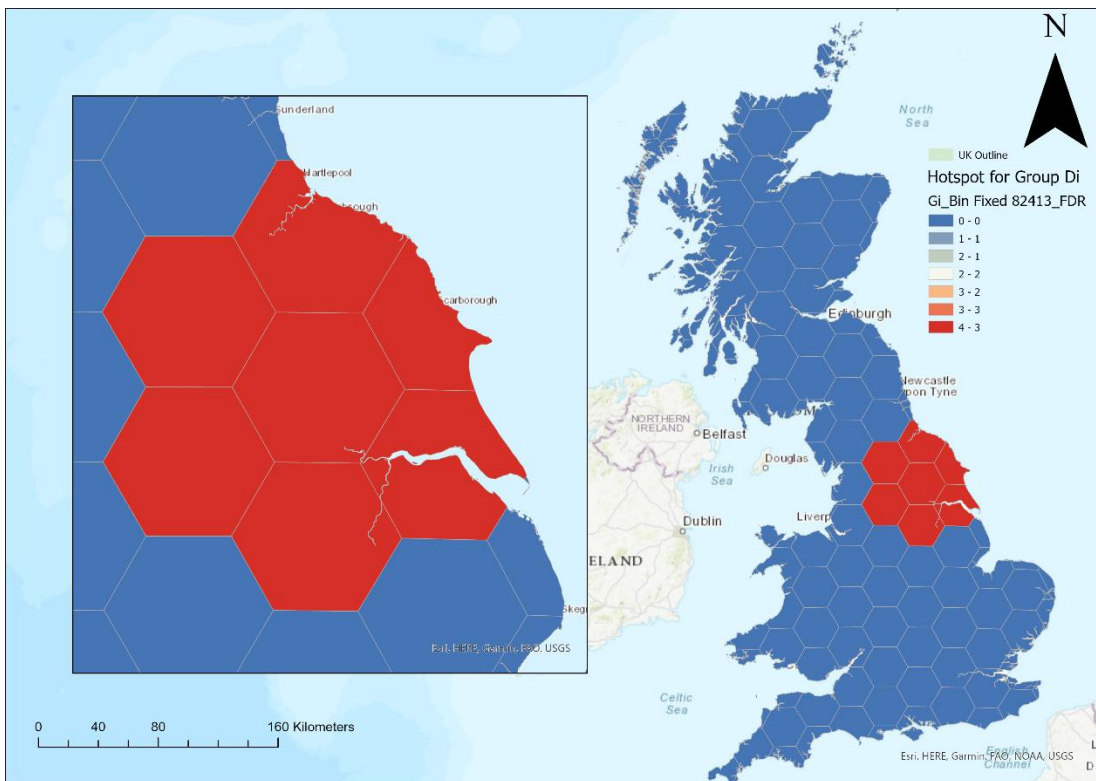


Figure 9.21: optimised hotspot analysis of Group Di

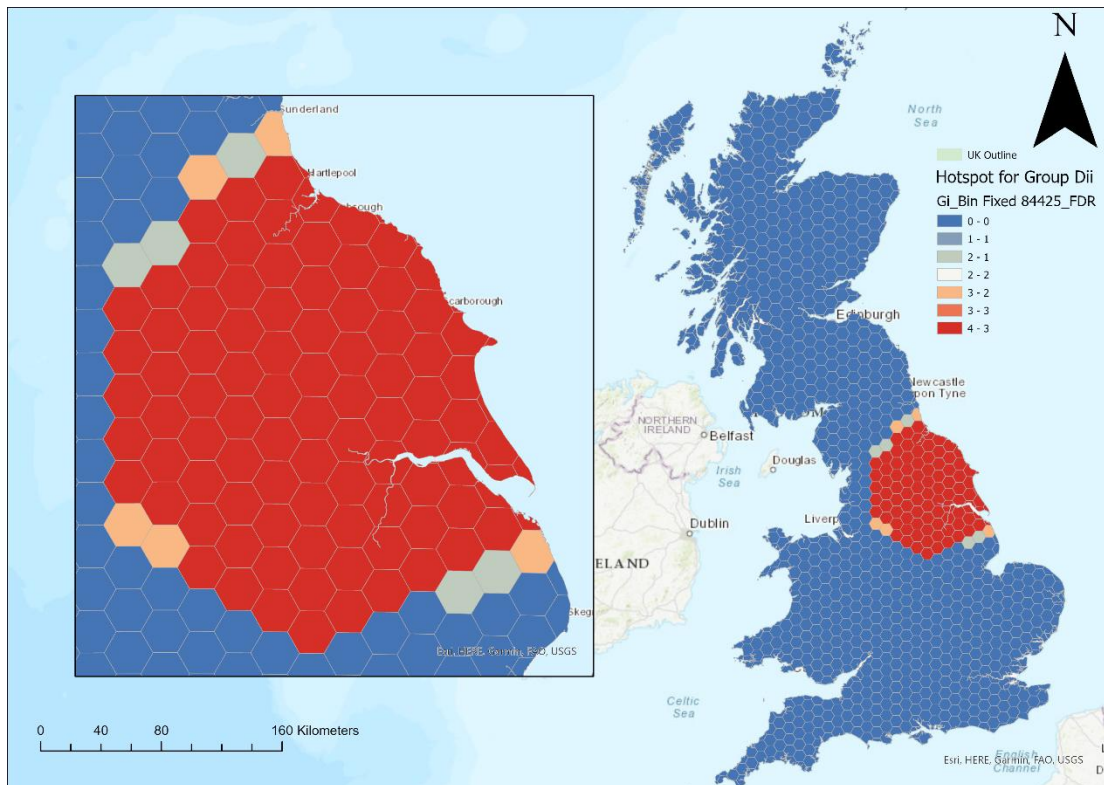


Figure 9.22: optimised hotspot analysis of Group Dii

#### 9.4.1.3. Travel and the Northumbrian coinage

In §9.2 York as a centre of production of Northumbrian coinage was discussed. From the extensive analysis of the finds we know that these coins did not remain in York and were taken and subsequently lost at a wide range of locations. How these coins moved through the landscape can be a challenge to see, but we can use this dataset to address whether factors such as use of an extant Roman road network, travel waterways or on the coast can be estimated (Naylor 2007). Figure 9.23 shows a map of finds according to proximity to these three features. 1km was chosen as a suitable distance to measure nearness with as it is a ten-minute walk. By plotting these features in Arc GIS Pro and using the program to measure how near coins are to these features, according to period, we can also discover if one method of transport is more connected on average to losses from a particular period than others. Figure 9.24 shows the numbers of coins within 1km of each feature by period, and figure 9.25 compares these. Proportions of finds within 1km of the coast and Roman roads are very similar across all periods. For waterways, a higher proportion of period 5 coins are found within

1km of them. This may be due to the proximity of Viking camps to waterways, such as Torksey and the River Trent. Figure 9.26 shows the per centage of finds within 1km of each feature out of the 1988 coins overall. Of the three features, 28% of Northumbrian coins are found within 1km of one, whereas its 18% for Roman roads and 14% for the coast.

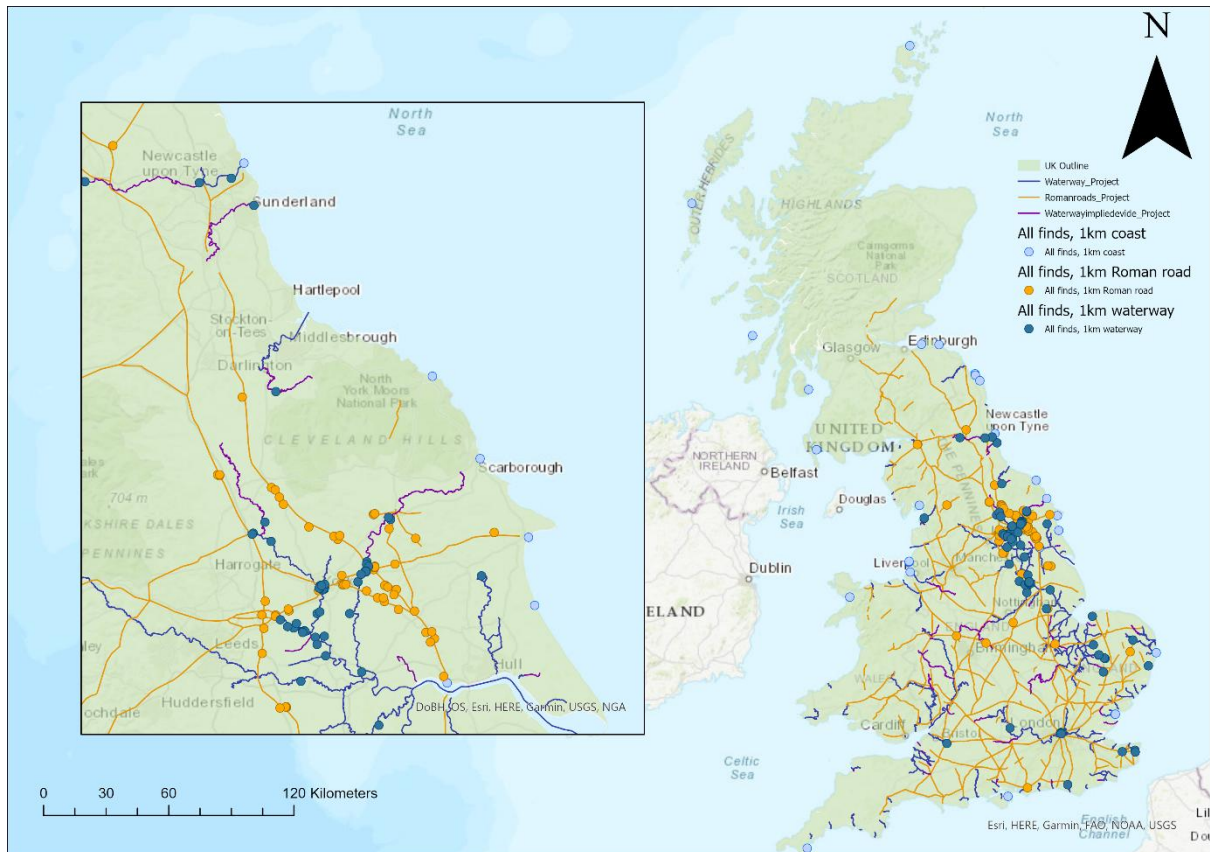


Figure 9.23: map of locations of all finds within 1km of coastline, Roman road or early medieval waterway

	Number of coins within 1km ...			% of coins within 1km		
	Coastline	Roman roads	Waterways	Coastline	Roman roads	Waterways
Period 1	22	25	25	8%	8%	5%
Period 2	61	72	63	23%	22%	13%
Period 3	96	111	168	35%	34%	36%
Period 4	32	48	63	12%	15%	13%
Period 5	60	69	151	22%	21%	32%
Total	271	325	470			

Figure 9.24: comparison of numbers and percentages of coin within 1 km of coastline, Roman road or early medieval waterway

### Proportions of coins per periods with 1km of the UK coastline, Roman roads or waterways

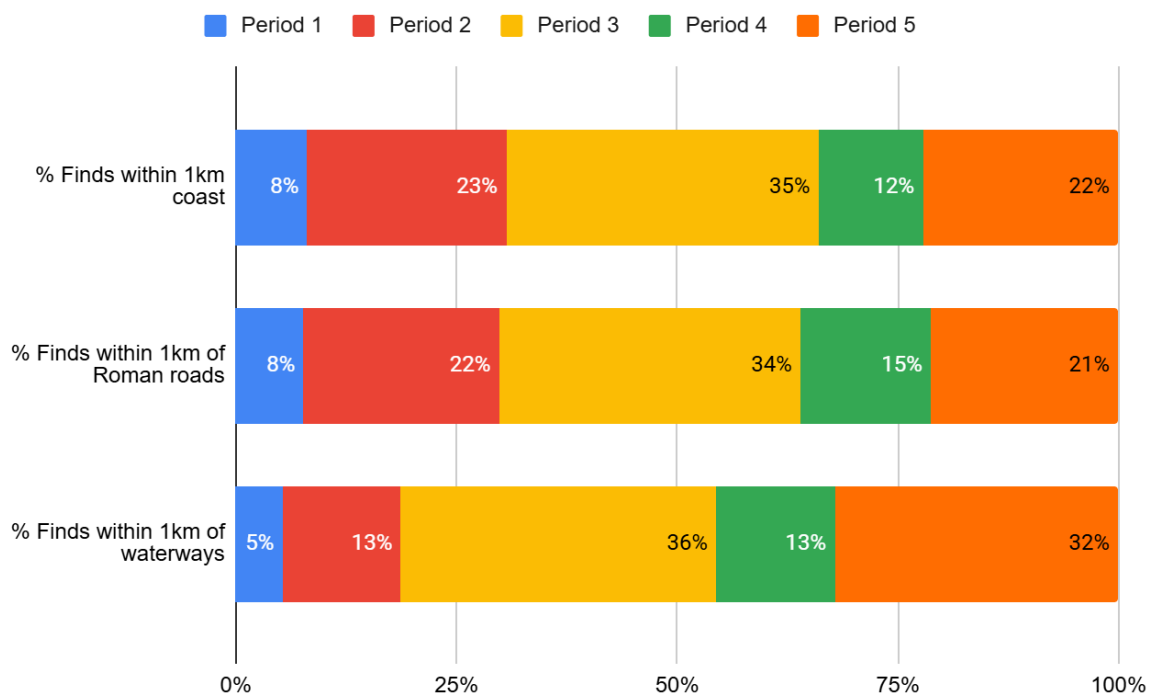


Figure 9.25: comparison of coins near coastline, Roman road or early medieval waterway according to period of production

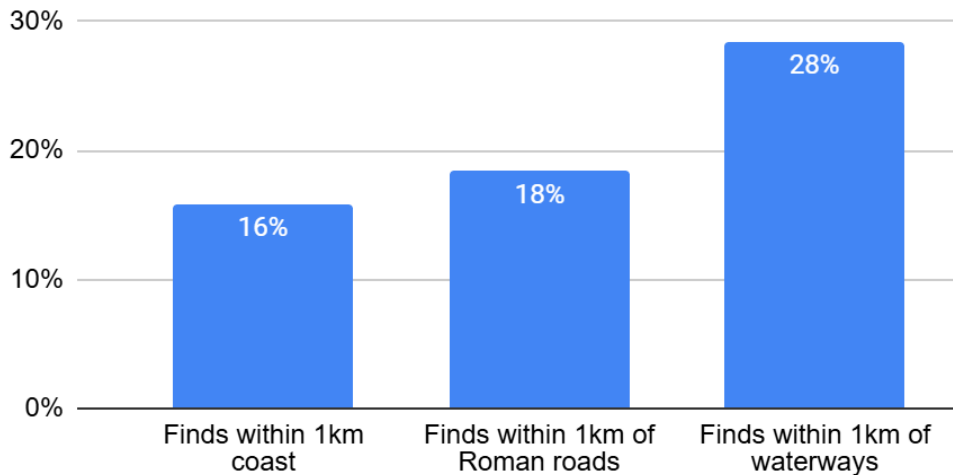


Figure 9.26: comparing proportions of finds with 1km of features; some finds are with 1km of more than one feature, so overlap is expected

#### 9.4.1.4. Chronological comparison

Figures 9.27 to 9.31 compare all the major assemblages discussed in chapters 5 to 8 according to period of production. These sites include excavated sites, Viking winter camps and hoards. They show a decline in period 1 coins in assemblages until the concealment of the Bolton Percy hoard, after which they do not appear in hoards. Periods 2, 3 and 4 remain in relatively similar proportions, although there are four sites where there is no period 2 material. For metal detected finds from Malton, this might reflect two phases of coin loss, the first focussed on period 1 with a break before resuming in period 3. However, the hoards of Asselby, Kirkby Stephen and ‘near Bamburgh’ only contain finds from 3, 4 and 5, reflecting a later date of concealment. Every site has material from period 3, demonstrating that it is the most widely circulated of periods of production. Barnby Moor, Spofforth and Flixborough have no period 4 material in the assemblages, Whilst Flixborough is an excavated site, the other two are metal detected assemblages.

As discussed in §9.2 period 5 coins are key to understanding Northumbrian chronology. Figure 9.31 illustrates how the percentage of period 5 material appears to increase over time. This hinges on period 5’s absence from Hexham and increasing presence at Torksey and Aldwark. In figure 9.31, the sites below them are likely to be chronologically

later, showing that the finds from Torksey (872-873) and Aldwark (c.875) are part of a continuum of sites that can demonstrate coin loss into the 870s. This also indicates that rather than coin loss at Viking winter camps being the final phase of the coinage (see §3.7), they are 'known' dates within a relative chronology of hoards, sites and assemblages recovered through a range of means.

Comparison of all sites orientated on period 1

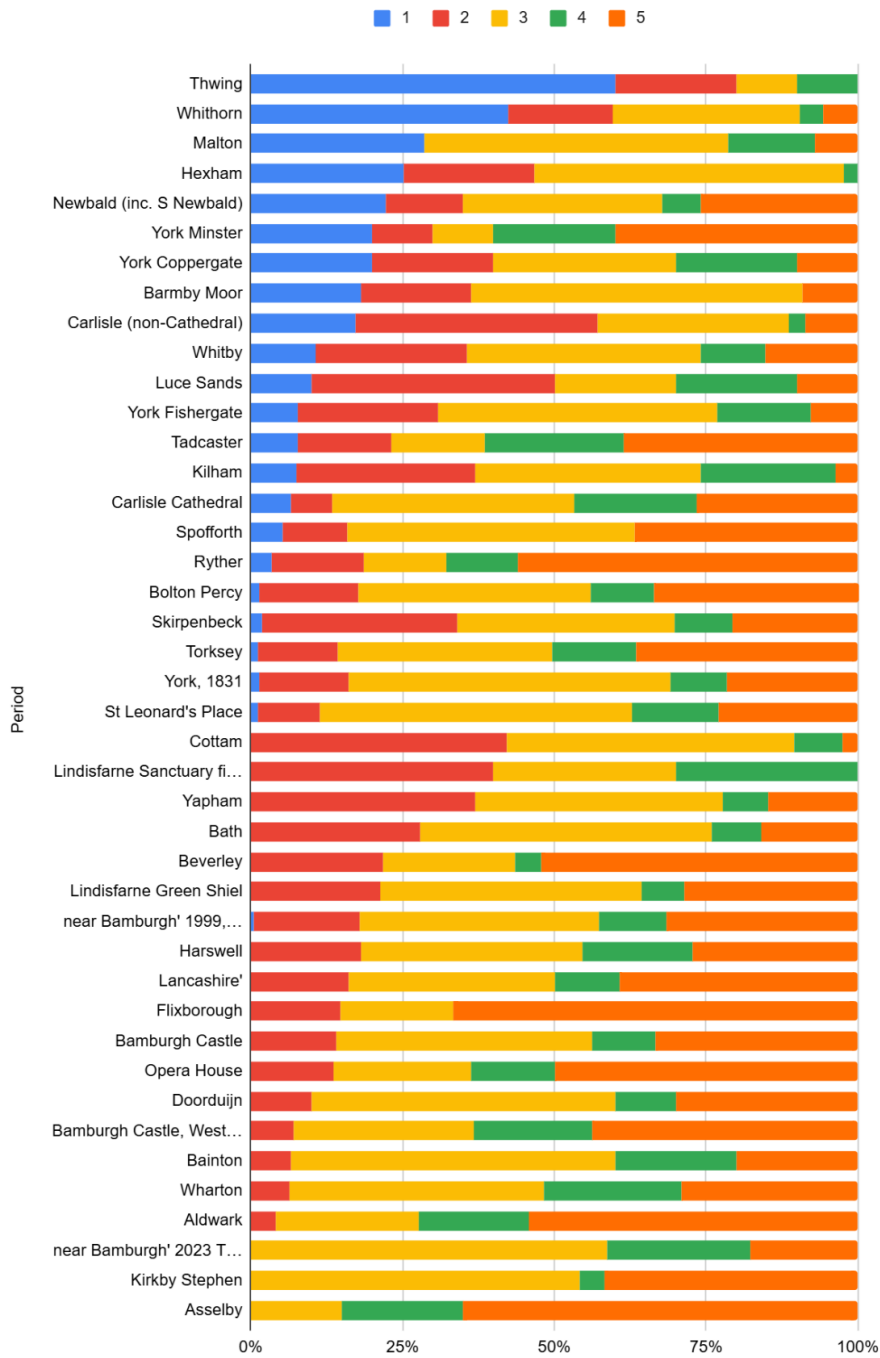


Figure 9.27: all sites and assemblages displayed with descending numbers of period 1 coins (earliest to latest)

## Comparison of all sites with a focus on period 2

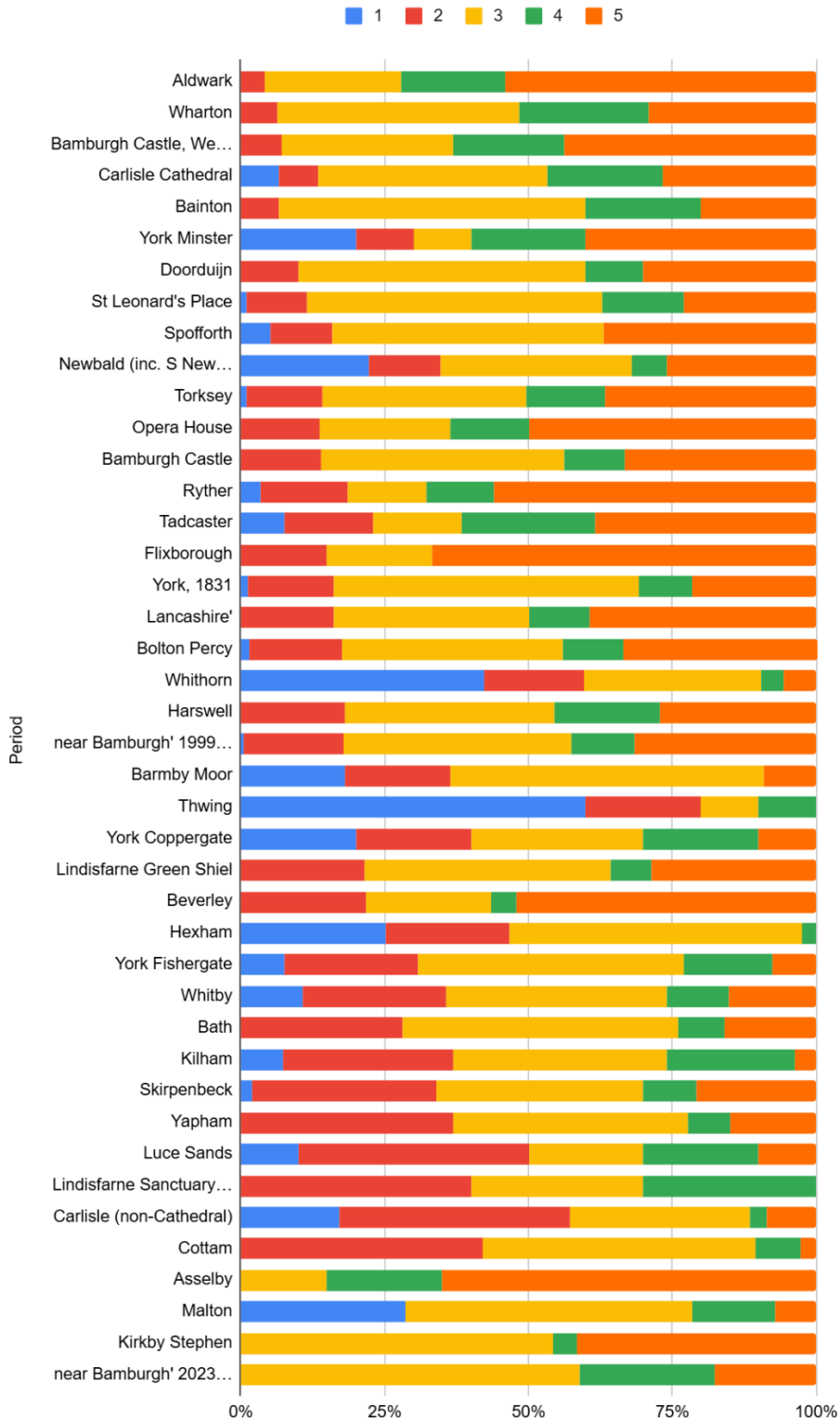


Figure 9.28: all sites and assemblages displayed with descending numbers of period 2 coins

### Comparison of all sites with a focus on period 3

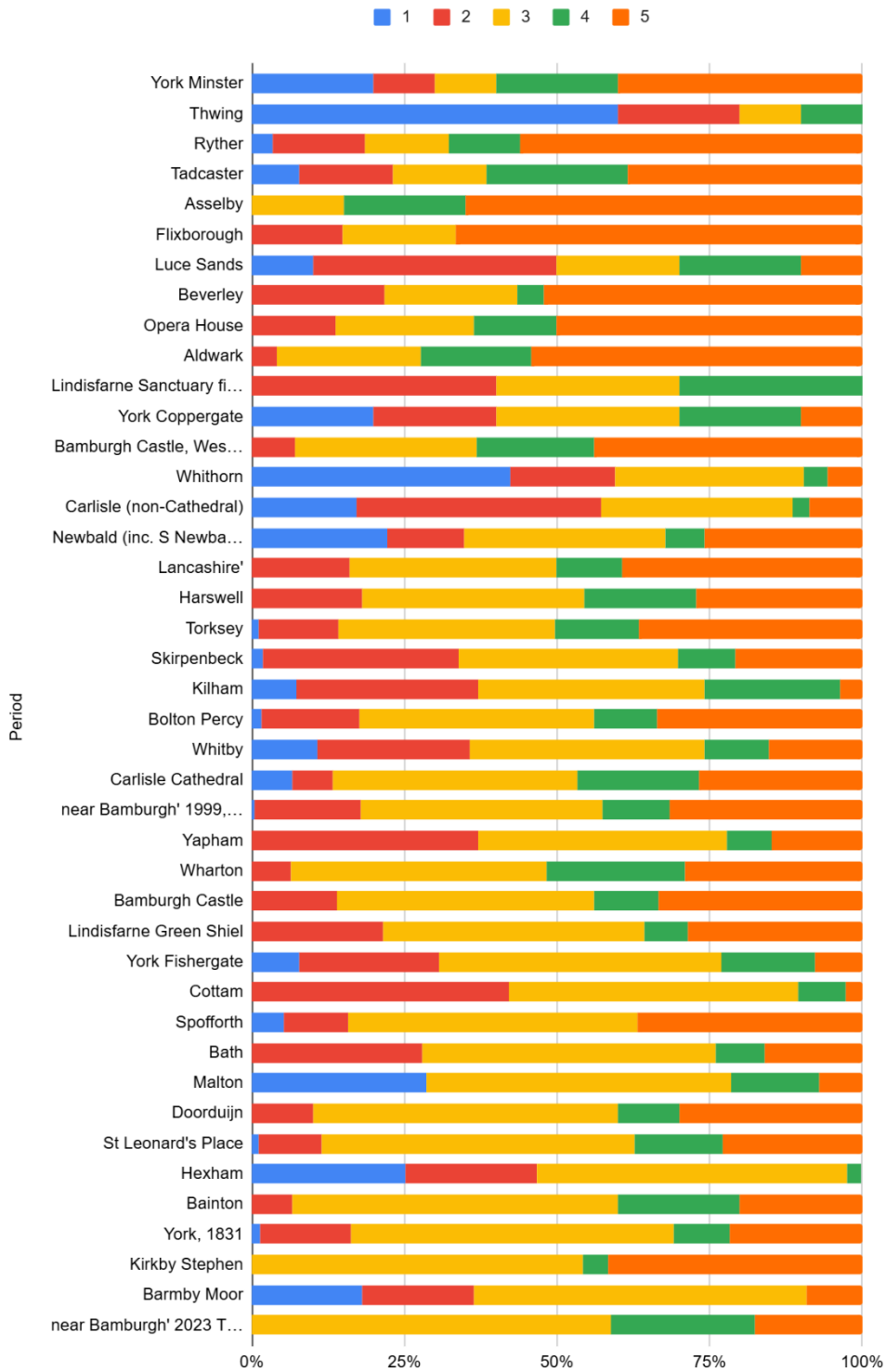


Figure 9.29: all sites and assemblages displayed with descending numbers of period 3 coins

### Comparison of all sites with a focus on period 4

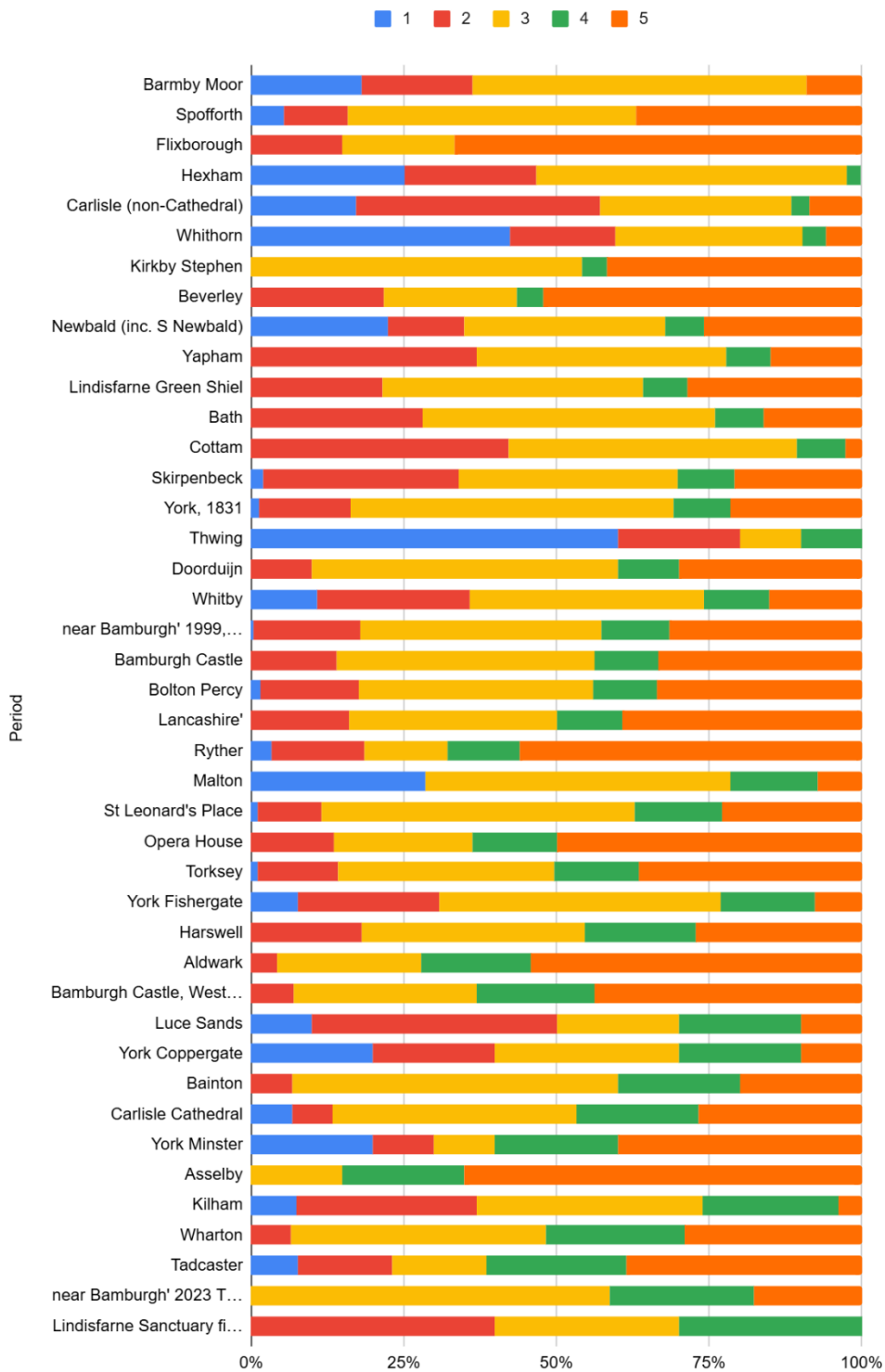


Figure 9.30: all sites and assemblages displayed with descending numbers of period 4 coins

Comparison of all sites with a focus on period 5

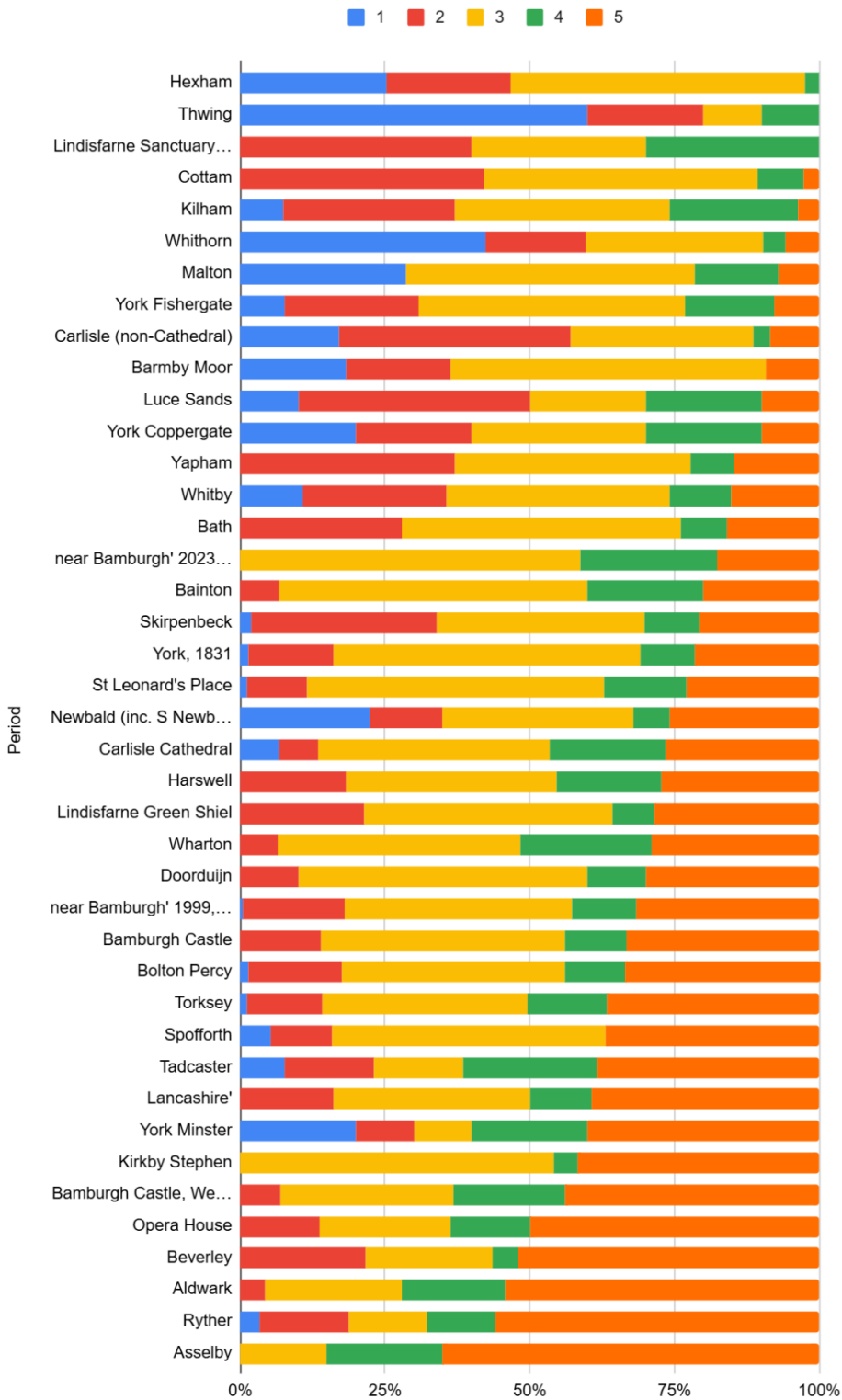


Figure 9.31: all sites and assemblages displayed with descending numbers of period 5 coins

## 9.4.2. Influencer or influenced: Viking encounters with Northumbrian coinage

### 9.4.2.1. *Vikings in Britain*

Whilst there is a definite and undoubted correlation between the presence of Northumbrian coinage and activities of the Viking Great Army, determining broader influence is more opaque. This was discussed in chapter 6 at a parish level where results for the impact of the army on the distribution of Northumbrian pennies were ambiguous. This demonstrates that whilst it might be tempting to attribute every Northumbrian coin outside the kingdom to Viking activity, this correlation is not the case for all finds. One example of where the correlation is assumed as definite is in wider contextual discussion of the Watlington hoard, where Northumbrian pennies in the locality are cited as a reflection of the trail of the Viking Great Army from Oxfordshire to East Anglia (Naylor and Standley 2022, 161). As outlined in chapter 6, the presence of one coin outside Northumbria does not a Viking camp make.

Contextualisation of Northumbrian pennies is necessary. Finds from East Anglia illustrate this well: a Viking camp at Thetford is historically attested, and there are other objects from the Viking Great Army finds signature from there. Together these support an interpretation that the Northumbrian pennies from the area are connected to a Viking presence. In contrast, coins from Blythburgh (Suffolk) are not associated with a finds signature, Great Army or otherwise, and the limited history of the area suggests an earlier ecclesiastical site. Without further evidence or investigation, an assumption that the Blythburgh coins must also be Viking should not be made (see §6.31). It is also important to remember that contextualisation can be ambiguous – coins from many areas were also found alongside copper-alloy pins, but neither alone is diagnostic. If a Northumbrian penny is found with a dirham, or an inlaid weight, or an ingot, then it can be viewed within a Viking context, but without this they must be viewed with some ambiguity.

#### *9.4.2.2. Northumbrian pennies abroad*

Whilst the focus of this thesis has been on finds of Northumbrian pennies from Britain, there is also a growing corpus of coins that have been found at sites across Europe, especially in the Netherlands. Their distribution is linked to the range of ways in which different countries approach handling and recording of finds. Where there is a more restrictive approach, such as France and Germany, there are far fewer finds. This contrasts to countries such as the Netherlands and Norway, where metal detection is more accepted. However, a detailed comparison of European metal detecting practices is beyond the scope of this section.

The 44 finds of Northumbrian pennies have become known through both excavation and metal-detection and stretch from Dublin in Ireland (figure 9.32) in the west to Staraja Ladoga in Russia to the east. The southernmost finds are from either Spain or Italy, but no findspot is known to this author; the northernmost is the find from Hjelle, Sogn og Fjordane. These finds are described in figures 9.33 and 9.34. All are coin finds, apart from the two finds from Vik near Fjaere which are coins inlaid into weights and excavated from graves (Williams 1999; Pirie 2000b). The two coins from Birka were also excavated from graves (Bogucki 2009).

However, it is more common for these coins to be excavated, or metal detected from settlements that have been variously interpreted as wics, as in Hedeby, Ribe, Dorestadt, or more closely associated with Viking Age activity, such as Janów Pomorski, Schuby, Ballyfermont and Staraja Lagoda (Pirie 2000b; Kirpichnikov 2004; Bogucki 2009; Giacometti et al. 2024). These finds show that Northumbrian coinage was taken by people who were travelling into and across Europe. For the finds from Vik and Birka, the coins had moved beyond solely a function of exchange. Once transformed into inlaid weights, the Northumbrian penny became a marker of identification, although we do not know how it was perceived. In a grave, whether at Birka, or at Colonsay or Arran in Scotland, the coins also have an alteration in meaning. They are no longer recoverable, and they become a symbolic object as part of someone's afterlife.



*Figure 9.32: Northumbrian coin from Ballyfermot, Ireland*

For the coins associated with settlements, many are significant finds: for example, the two from Ballyfermot are the earliest coins from Ireland associated with Viking activity. They have mostly been found by detectorists, especially in the Netherlands, and reported. The majority are single finds, but the site of Doorduijn has an assemblage of ten coins. The corpus is now of 44 published coins, a number that is expected to rise due to metal detecting. All periods are represented, but with a noticeably smaller number of sites with period 5 coins (see figure 9.35). One of these is from Ballyfermot, Ireland, the other three are in the Netherlands. The Torksey assemblage contains coins from period 1 to 5, so we can determine earlier issues remained in circulation.

At Doorduijn ten Northumbrian pennies have been found as part of a significant assemblage of coins and other objects (Salomons and de Koning 2020). The site itself seems to have been an eighth century trading site which is perhaps then re-used in the mid-to-late ninth century. Its assemblage is compared with the wider assemblage from the Netherlands in figures 9.37 and 9.38. The site of Doorduijn is the only one with a large enough assemblage for comparison, here I have compared it to the rest of the finds in the Netherlands, using them as a ‘background’ signature. This data has the caveat that there are 8 coins from the country-wide sample that are not yet identified to their period. Interestingly both the wider Netherlands assemblage and that of Doorduijn have c.30% coins from period 5 (see figure 9.31), which suggests that Doorduijn could date to c.872.



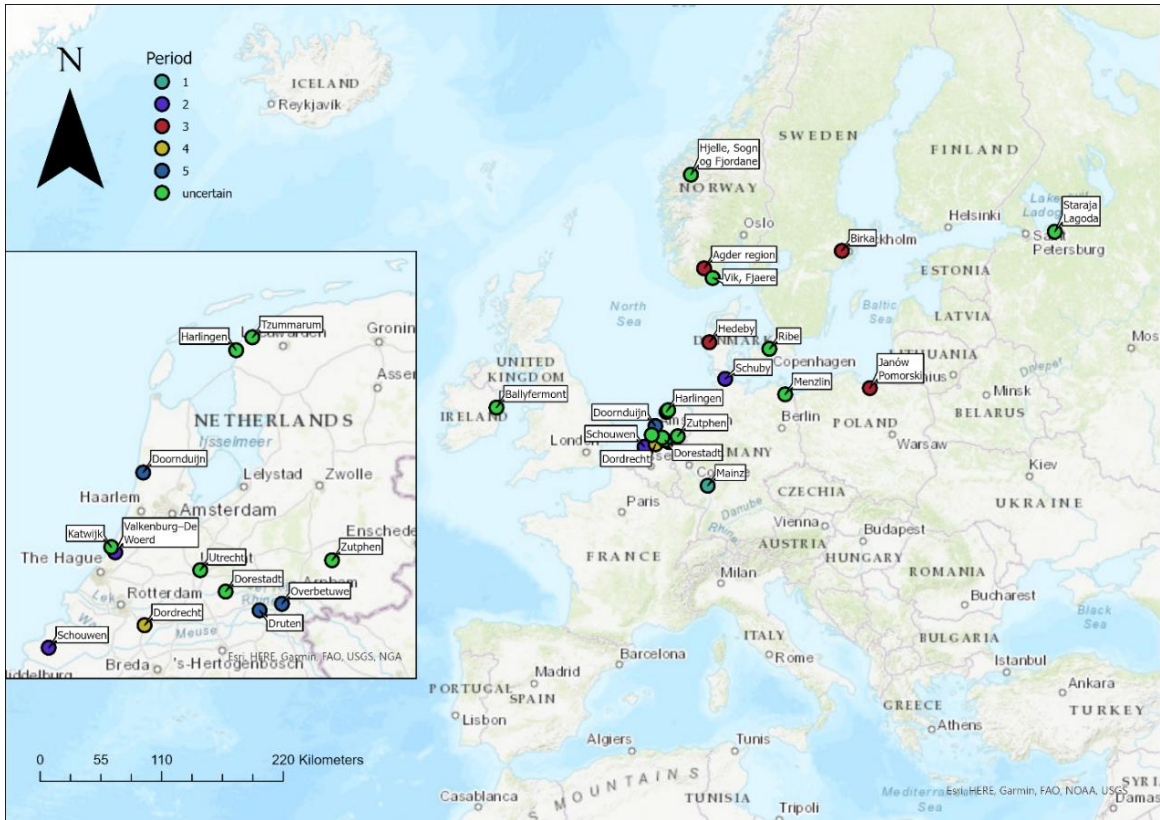


Figure 9.34: map of Northumbrian coins in Europe according to period of production

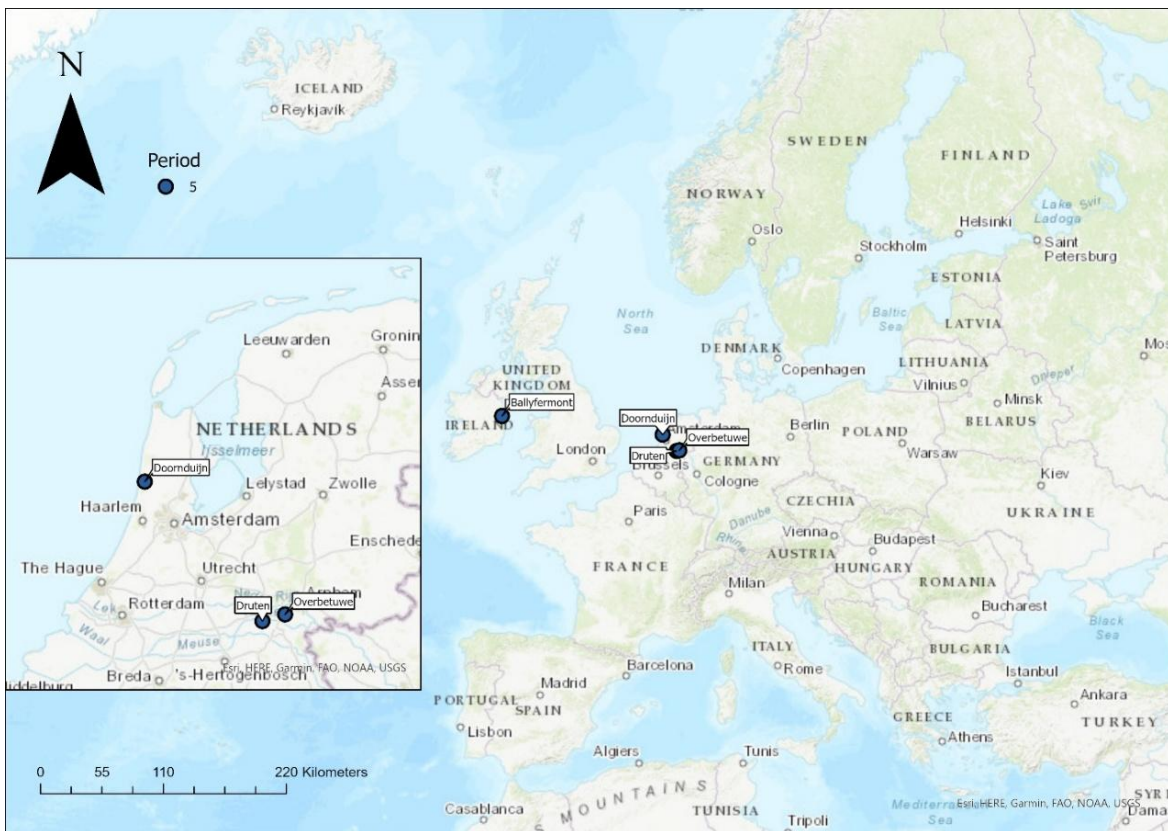


Figure 9.35: map of findspots of period 5 coins in Europe

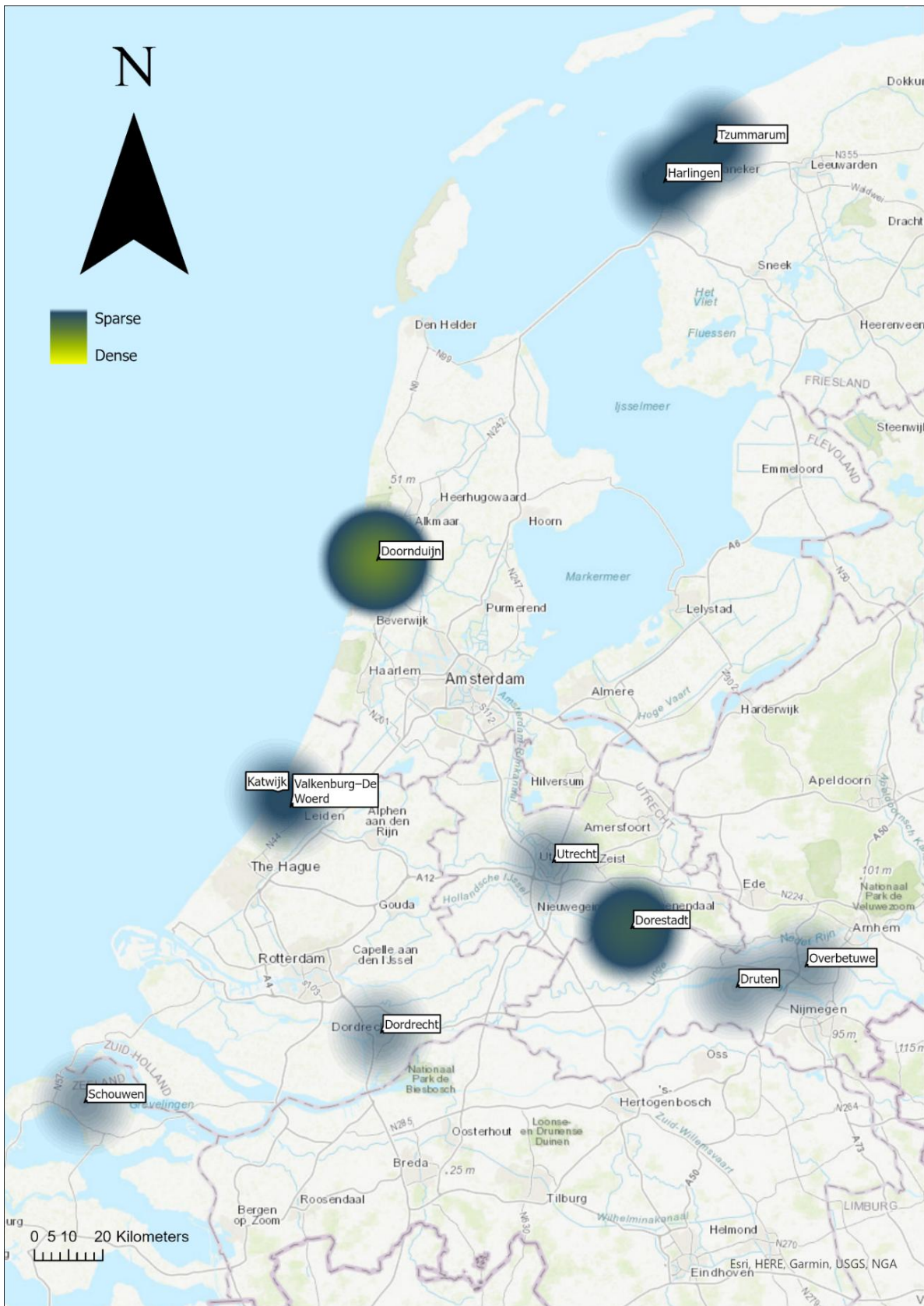


Figure 9.36: heat map of Northumbrian pennies in the Netherlands

Period	No. in Netherlands	Netherlands %	Doorduijn	Doorduijn %
1	1	6%	0	0%
2	5	29%	1	10%
3	5	29%	5	50%
4	1	6%	1	10%
5	5	29%	3	30%
total	17		10	
overall total	25			

Figure 9.37: proportions of Northumbrian coins from the Netherlands

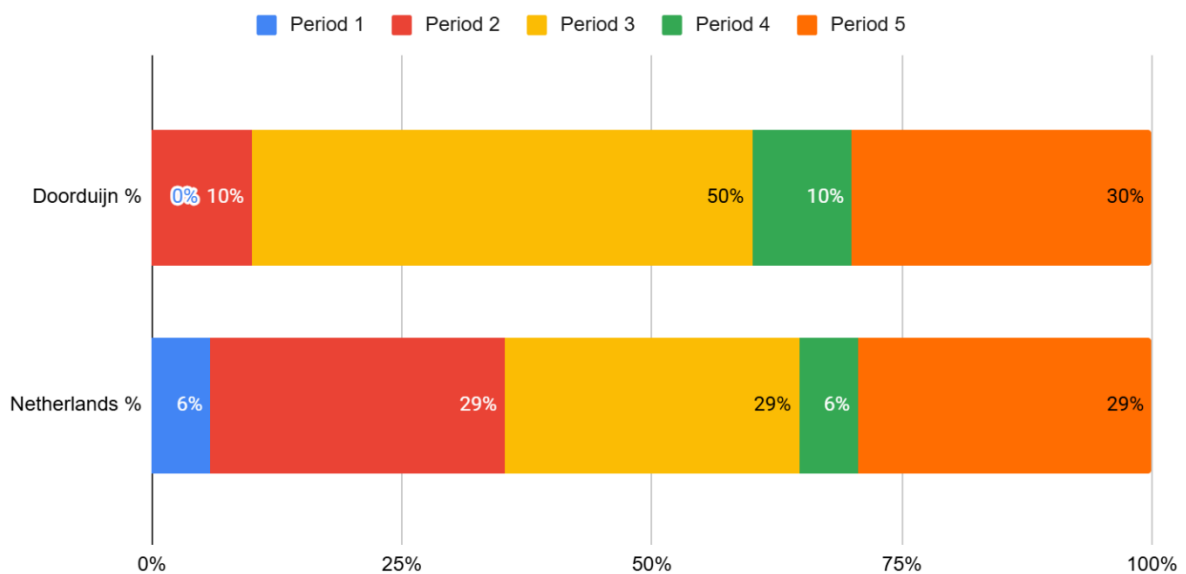


Figure 9.38: comparison of Doorduijn assemblage against the rest of the finds from the Netherlands, according to period of production

## 9.5. Retrieval and study

This quaternary phase in Kemmers and Myrberg's model examines the retrieval of coins from their archaeological contexts and their life through study afterwards. This thesis was organised according to method of recovery to emphasise the impact that a range of archaeological practices can have on the quality of data. The capacity and resources of archaeological teams is of course a significant issue, and introduces its own variability, as shown in the difference in data quality between Torksey and Aldwark for

Northumbrian pennies. The strength of the investigations such as Torksey and Aldwark is that they focus on a specific site and try to understand it from a holistic perspective. For the coins, this means that they are viewed as intrinsic to the wider assemblage. This contrasts somewhat to finds from excavations, where there is a sense that a coin find, since often coins are relied on for dating, becomes set apart. Excavation can provide greater contextual information about a coin, but this is dependent on the circumstances – more understanding comes from a coin excavated from a secure context than one metal detected from a spoil heap, but both do have value.

Metal detected material provides evidence for coinage at a macro scale – it is through the aggregation of data from a range of single finds that comparison can derive context. For coins from hoards, their significance is driven through comparison with the rest of the assemblage. This is highly dependent on how well hoard is recorded, the Hexham hoard despite being discovered in 1832 has very good data recorded, but other hoards have not been so fortunate. Hexham is unusual for the level of recording for an antiquarian assemblage; in contrast the lack of recording of data about finds from Kirkoswald means that it cannot be compared to other assemblages, and, tantalisingly, Hexham would be the geographically closest. Whilst all methods of recovery have constraints, this thesis has shown that with careful consideration all methods can be used together to further understanding of Northumbrian coinage.

Expanding knowledge about Northumbrian pennies has been a goal since Adamson's 1832 paper on Hexham, by a range of authors who have drawn on the coinage in a range of ways. These were all discussed in chapter 3, but, reflecting on the study aspect of this fourth phase, the numismatist who has had the greatest influence on it is undoubtedly Elizabeth Pirie. As discussed in §3.5, her work was not adopted by the field, and through the records of the Leeds Philosophical and Literary Society we gain insight into how acrimonious the situation was at times. It is also clear that for Pirie, some of the circumstances she found herself trying to defend her research in, were extremely discomfiting. It would be no wonder, if, as the documents attest, your work was publicly humiliated that one response would be to become intractable on it.

Academic courtesies and personalities aside, Pirie was an expert on the dies used on the coinage, and a dedicated cataloguer, recorded a wide range of finds assiduously. Despite her arrangement of the coins not being adopted, Pirie still wrote practically every assessment of the coinage throughout the 1980s, 1990s and early 2000s. This demonstrates that her recognition of individual dies was valued. How Pirie interpreted the coinage is a different matter. She was an exponent of a proposal for multiple mint-places, but provided little evidence of this, other than subjective examples of die-cutting techniques, these were on occasion linked to what Pirie viewed as a ‘Brittonic’ influence stemming from Bernicia, again with little evidence provided. It is a pity that Pirie didn’t live to see the expansion in the recording of metal detected by the PAS – I think she would have been thrilled by the plethora of new finds. It is telling that in *Thrymsas, Sceattas and Stycas* she records finds of Carolingian deniers wherever they are found, I think she felt there was a connection between them and Northumbrian pennies but couldn’t be explicit about what it might mean. Now the finds signature of the Viking Great Army is understood, these finds can be connected to their activities.

## 9.6. Northumbrian pennies as historical documents

Primarily this thesis has considered coins as archaeological objects and has worked to recontextualise Northumbrian coinage. In chapter 4 I discussed the difference between historical source for chronology and the role that numismatic data plays in providing alternatives. There, coins are considered as a mass-produced dataset, rather than documentary sources in and of themselves, but it is also important to now comment on Northumbrian pennies as coins as documents from the era (see also 9.7).

Coins, as we have seen, can be viewed explicitly as archaeological documents (Burström 2018) art historical (Doherty 2018; Gannon 2003) and political and economic documents (Freeman-Grenville 1960). However not all coins have the same content to be read – Gannon’s art historical approach is not appropriate for Northumbrian coinage since there is only one figurative die known (as seen in figure 9.1). For Northumbrian coin design, text, or the appearance it, is form that is key to its design and meaning and the implications they bring. Gooch (2012, 24) has discussed the same issues in relation

to the coinage produced by the Viking kingdom of York at the end of the ninth century. The same challenges apply to their study as to those of Northumbria. For Gooch, coins share information on power and economics, representing the wishes of those who issued them. However, their scale makes them very different to textual sources; coins, as we have seen, are mass produced. What textual information there is, is necessarily shorter. Yet similar techniques are shared between the numismatist and the palaeographer or codicologist: a focus on the materiality of the object and the function of its inscription. For Northumbrian coins this is legitimacy, or at least the appearance of it, through the use of the names of kings and bishops and moneyers to give credence to trust in the transfer of wealth in coined money. It also shows that writing was an “integral part of visual culture” to use terminology referring coinage in the eighth century (Gannon 2003, 1). This is apparent when ‘illiterate’ derivative issues are considered from a textual perspective. Writing on Southumbrian coinage, Naismith (2012, 47) discussed the visual appearance of money “needed to satisfy expectations” rather than also be ‘literate’ (discussed further below).

## 9.7. Suggestions for future work

The most pressing area for future work on Northumbrian coinage is to revisit it through the lens of metallurgical analysis. There were two papers that addressed this at the 1987 Oxford Symposium (Gilmore and Metcalf 1980; Gilmore and Pirie 1987; Gilmore 1987), but in the light of the connection to Viking activity, there is further scope. Recent lead isotope analysis has transformed understanding of early medieval silver (Kershaw 2017; Kershaw et al. 2024), yet still do not know for sure where the copper used in this coinage was coming from. Equally important is where the copper from these coins was going to. Whilst there are copper-alloy ingots associated with Viking activity, numbers are lower than silver ingots. This suggests the copper was being re-used elsewhere, but the question remains by whom and for what. In the early tenth century there is a boom in copper-alloy jewellery in England and Scandinavia, perhaps metallurgical analysis will enable comparison.

Disentangling derivative issues also remains a task to be undertaken. This thesis has explored derivatives as an indicator of potential Viking activity, starting from the premise that perhaps some were coined through Viking Great Army agency. This thesis did quantify the derivative issues from Torksey and many of other sites, demonstrating that these were produced into the 870s and the later the assemblage the higher the proportion of derivatives. What was out of scope for this project was a die study, focussed on derivative coins from Torksey that do not appear in CKN. Tracing the dies used to mint those coins might isolate dies that appear to originate at explicitly Viking sites. Two unusual dies have been lately discovered, in Cornwall (§6.31) and a coin from Doorduijn (figure 9.39). Both are ostensibly Northumbrian pennies, but with unique differences. The dies used to mint the Cornwall coin has very wide-spaced lettering, which is unparalleled in material that I have seen. With no other contextual finds from the parish, it cannot be assumed to be Viking, but it is very unusual. Figure 9.39 is a coin from Doorduijn, it is also very different – the reverse motif of nine pellets in a square is also unparalleled to my knowledge. It is not a motif listed in CKN. The location of the find and the unusual style of the die also set it apart. Another avenue once a more comprehensive investigation into reverse dies is done would be to apply Esty’s formula to estimate the size of the coinage.



Figure 9.39: highly unusual die on reverse (left) of coin from Doorduijn

Using Northumbrian coinage as a lens through which to examine Northumbrian literacy is also work that needs addressing. There are two aspects to this. The first is the fact that some coins use both the Latin and Runic alphabets, and whilst this has been noted and discussed by Metcalf (2012), no systematic study appears to have been made of all the coinage, nor has its partial bilingualism been incorporated into wider studies of Northumbrian literacy in the ninth century. Connected both to the derivative issues and to the question of literacy is the issue of when a derivative issue became too dissimilar for it to be accepted in exchange. This is connected to the study of imitation coins and how writing as image was understood. Most people who encountered a Northumbrian penny would not have been literate, so would be judging authenticity based on the “look” of the writing, rather than the words.



Figure 9.40: 1869,0104.12 - Northumbrian penny of Eanred minted by Wihtried; the moneyer's name includes the wynn rune and is highlighted in blue. © The Trustees of the British Museum. Shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\)](https://creativecommons.org/licenses/by-nc-sa/4.0/) licence.

In a similarly theoretical way, periodisation is often used as a tool by numismatists, but its implications for numismatic groupings have not been the subject of research, nor does there appear to be much critical reflection of the deliberate choices made when developing them. This is something I noticed working on chapter 4, creating space for reflection on this, alongside others who work in similar ways would be beneficial to the field. At a minimum, a history of numismatic periodisation should be written, to draw attention to its significance as a tool. There is also a case to be made for further

comparative study of Northumbrian pennies alongside copper-alloy currencies from other periods. Questions for such a study could examine how copper-alloy drives value, and whether this differs, as well as whether the velocity of coinage remains similar. Denominations with which parallels could be drawn are Roman provincial coins, 'barbarous' radiates, copper coins from Kilwa, seventeenth century tokens, or even kutcha paisa from India.

More practically, whilst the excavations at Bamburgh are ongoing, it is already the most complex of assemblages of Northumbrian pennies. Research and contextualisation of the recently excavated finds is an exciting prospect, especially bearing in mind that the location has been mooted as a potential mint place outside York. Another ongoing excavation, at East Thirston, has been initially interpreted as a Viking camp, with six Northumbrian pennies from it. Future excavations may alter interpretation of the site going forwards. Furthermore, if it were possible to retrieve EMC data from after 2010, incorporating that material would expand the corpus further. EMC's close connection with detectorists in East Anglia might also supply additional finds for that area, but I do not think it would dramatically alter the conclusions of this thesis.

This thesis proposed a new periodisation for Northumbrian coinage, which has revised the dates for Northumbrian kings and worked to balance them with episcopal histories. However, this is one of several proposed chronologies. Perhaps the most important next step that needs to be taken with Northumbrian coinage is for a collaborative and collegiate group of historians, archaeologists and other numismatists to congregate, discuss, agree and publish as definitively as possible, what the revised dating of Northumbrian kings ought to be. Along with dates of the Viking camps, and chronologies of Northumbria assemblages, this will unlock in new ways a period of British history that has been hitherto under studied and misunderstood.

## 9.8. Conclusions

This thesis has made several significant contributions to the study of Northumbrian coinage. Returning to the questions set out in chapter one, I can demonstrate that

significant progress has been made in our understanding of the key issues. Taking each question in turn:

- Northumbrian pennies have been excavated from a range of sites, what implications are there with the use of a new periodisation for their analysis, and can this enlighten the coinage further?

The establishment of a revised chronology for Northumbrian coinage, based on relative and absolute dating. This enabled the creation of a new periodisation for Northumbrian coinage, which can be used to assess chronologies of production. The periodisation – through the proportions of derivative issues in period 5 – determined that circulation likely continued into the later 870s through comparison between coin assemblages and those of Torksey and Aldwark. Applying these tools meant that revised dating for major assemblages, such as the Bolton Percy hoard, the London Opera House hoard and the Whithorn assemblage can be made. This extends dates of concealment beyond the traditionally entertained date of c.866 and demonstrates a continued use of Northumbrian coinage after the Viking takeover of York and into the subsequent decade. This extends the known periods of monetisation for beyond the accepted chronology for Northumbria.

- Hoards were a major source of Northumbrian pennies, what impact does periodisation have on our understanding of their chronology and the reasons why they were concealed?

Re-examination of Northumbrian hoards, particularly in light of the metal-detected smaller hoards that have been discovered in the early 21<sup>st</sup> century show that Northumbrian pennies were eminently ‘hoardable’ at a range of scales from Tadcaster with 13 coins, to St Leonard’s Place with a historic estimate of 10,000. They also featured in mixed assemblages, such as Kirkoswald and Talnotrie. By using the periodisation to group coins from each assemblage, distinct profiles for hoards can be discerned. These in turn can be compared to the profiles of Torksey and Aldwark, these comparisons suggest that a more nuanced chronology for the concealment of Northumbrian hoards can be proposed, and that this chronology extended into the later

870s and contrasts with the previously held view that hoarding occurred close to the Viking takeover of York in 867.

- What additional insight can the wealth of metal-detected data add to understanding of the loss and circulation of Northumbrian pennies? What influence might the Viking Great Army have had on this?

Spatial analysis of single finds has identified an expanded sphere of economic influence for Northumbria in the ninth century, from c.845 to c.870s. This is based on the use of optimised hotspot analysis to address the likelihood that coin finds in neighbouring zones are statistically significant. This in turn challenges the idea that Northumbria's southern border was fixed and suggests that finds of Northumbrian coins in south Yorkshire and north Lincolnshire are not outside the limits of circulation. In turn, analysis of Northumbrian coins within the context of finds from the same parish, did not show whether these finds were due to influence of the Viking Great Army as has been previously suggested. From this we can challenge the emergent assertion that all Northumbrian pennies, found outside Northumbria, must be connected to Viking activities.

- Northumbrian pennies have been modified in a range of ways, including into Viking Age weights, does analysis of these shed further insight?

Much of this thesis has been searching for ways we can trace Viking influence on Northumbrian coinage, whether at a winter camp or in wider circulation. This assumed that it was Viking activity that brought an end to the coinage in c.867. However, we can now see that Northumbrian pennies continued to be used at the same time as the Viking Great Army was moving around the country. What might have been termed a "Vikingisation" of the coinage, where its distribution was strongly influenced by the Viking Great Army and derivative issues coined at the camps, is not apparent. Re-use of the coins into weights certainly does occur and the coins themselves are re-used as grave goods in specific circumstances, demonstrating adaptation.

- Is there a pattern in the profile of assemblages of Northumbrian pennies at Viking Great Army sites? If there is, how do derivative issues fit in the picture?

What the use of Northumbrian coinage shows from c.845 onwards is an expansion of the circulation of copper-alloy pennies at speed. The expansion of derivative issues from c.859 has been interpreted as a death-knell for the coinage, but I would suggest that it marks a revitalization, just outside regal and episcopal influence. To the people who were using Northumbrian coins, the appearance of derivative issues didn't matter, because they were "coin enough". They were indeed enough to be retained as coin at Viking camps, rather than turned immediately to bullion, stressing that their function remained in the 870s as a coinage. The tiny, Northumbrian, copper-alloy penny then becomes an agent – exerting its own influence in return.

## Appendix

### Data used in chapter 6

#### Parishes within the total hotspot described in §6.4

Parish	No. coins	Periods	Derivative	Viking Great Army finds signature	Other MD finds from 9C
Cottam				1 cut dirham (YORYM-AA419A); fragment of silver ingot (FAKL-284426); 2 gaming pieces; several inset, conical and cuboid weights potentially dating the 9 <sup>th</sup> century.	
Newbald (inc. South Newbald)	117	1-5	Yes	H+R 2018	
Skirpenbeck	76	1-5	Yes	six weights of Viking character, including one inset with a Northumbrian penny ( <a href="#">LVPL-5E4310</a> ), an intentionally cut silver Carolingian denier ( <a href="#">YORYM-81FB8D</a> ) and a small hoard of three pieces of hacksilver ( <a href="#">YORYM-9526A2</a> ).	
Ryther	73	1-5	Yes	H+R 2018	
Spofforth with Stockeld	38	1-5	Yes	H+R 2018	

Yapham	31	2-5	Yes	Potential gaming pieces <a href="#">YORYM-C2F130</a> , ingot <a href="#">YORYM-29D955</a> , whetstone <a href="#">YORYM-4399F2</a> , Burgred penny YORYM-9133BA	
Kilham	30	1-5	No	H+R 2018	
Barmby Moor	28	1-5	Yes	cut silver ingots ( <a href="#">BM-898068</a> ; <a href="#">LVPL-16F352</a> ) and a piece of hack-metal from a Viking bracelet ( <a href="#">PAS-C915EE</a> )	
Millington	28	1-5	Yes	16 "Viking Age" weights e.g. NLM-70A894 which is inlaid with Roman pottery; 7 gaming pieces; copper alloy pins, strap ends and fragments of metal	
West Heselton	23	1-5	Yes		
Burton Fleming	21	1-3, 5	Yes		
Malton	21	1, 3-5	Yes	Gaming piece ( <a href="#">LVPL-9403F1</a> ) and a lead weight inset with a piece of glass ( <a href="#">DUR-8BCD07</a> )	
Willerby (with Staxton)	18	2-5	Yes		
Bainton	16	2-5	Yes	H+R 2018	
'York'	14	2-5	Yes		
Pocklington	13	2, 3, 5	Yes	H+R 2018	

Carthorpe	8	2,3	No	No	Strap ends, pins, <a href="#">mounts</a>
Wetherby	8	2,3,4,5	Yes - 1	No	No
North Elmshall	7	2, 3, 5	Dii (1)	No	Strap end
Bielby	6	2,3,4	No	No	Tags, strap ends, <a href="#">pins</a>
Dunnington	6	2,4,5	Yes - 2, 1x Dii	No	Mounts, pins, <a href="#">strap fittings</a>
Everingham	6	3,4,5	Yes - 1 xDi	No	Pins, tags, <a href="#">strap ends</a>
Hayton	6	all	No	No	Strap ends, pins, <a href="#">tags</a>
Kirmington	6	2-5	Group A	No	No
near Driffield	5	1,2,3, 4,5	No	Gold <a href="#">ingot</a> ,	Two pins NCL-85EDB5
Thwing	5	1,2,3,4	No	No	No
Little Smeaton	5	2, 3		No	Pins and spindle whorls
Fangfoss	4	2,3	No	Cut dirham <a href="#">fragment</a> ,	Fangfoss
Market Weighton	4	2,4,5	Di (1)	No	Pins and strap ends
Riccall	4	4, 5	Yes - 2 x Dii	<a href="#">gaming piece</a>	three <a href="#">strap ends</a>
Allerthorpe	3	1,3	No	<a href="#">Weight</a>	Two strap ends

Amotherby	3	3,5	No	No	Two strap ends <a href="#">one pin</a>
Barnburgh	3	2, 3		No	<a href="#">_strap ends, brooch fragment, pin, buckl</a>
Boroughbridge	3	5	Yes	No	<a href="#">Mounts, accessories, strap ends</a>
Near Beverley	3	1,2	No	No	Ceramic and <a href="#">_mount</a>
Catterton	3	5, ?	Yes - 1 xDii	No	No
Folkton	3	2, 5	Yes ?	Scan <a href="#">weight</a> (SE Flixton), <a href="#">axe?</a>	
Heslington	3	3, ?	No	No	One strap end YORYM-D28715, one pin <a href="#">YORYM-D38D93</a>
Luttons, East and West	3	4,5	Yes - 1 xDii	No	No
near Scarborough	3	2,3,5	Yes - 1 x Dii	No	No
Stapleton	3	3-5		No	Pins and strap ends
Weaverthorpe	3	2,3,4	No	No	Two <a href="#">strap ends</a>
Wighill, Tadcaster	3	5	No	No	<a href="#">Tag, strap end</a> with possible ninth-century Scandinavian <a href="#">brooch</a> and gold <a href="#">ring</a>
Beningbrough	2	4	No	No	Tag, strap ends, <a href="#">pins</a>
Bolton, East Riding	2	4	No	No	No

Boynnton	2	1,2	No	<a href="#">Ingot</a>	No
Bramham cum Oglethorpe	2	3	No	No	No
Brantingham	2	1,3	No	Weights ( <a href="#">here</a> and <a href="#">here</a> ), gaming <a href="#">piece</a> , Scan <a href="#">whetstone</a>	
Bridlington	2	2,5	No	No	Two <a href="#">strap ends</a>
Catton	2	3,5	Yes - 1 xDii	No	Pin
Crowle and Ealand	2	5	D	Inlaid weight, gaming piece, as above	No
Darrington	2	2, 4		Yes, gaming piece SWYOR-86BAD5, inlaid weight SWYOR-8A1BCA and cylindrical weight	Strap end
Fridaythorpe	2	2, 5	Both - one A, one Dii		Mounts, strap fittings, <a href="#">pins</a> ,
Harewood	2	5	Both Dii	No	Spindle whorl
Kirk deighton	2	1,5	1 xDii	No	Pins, <a href="#">strap ends</a>
Kirkby Wharfe with North Milford	2	3,5	No	No	Two strap ends
Lead	2	1,4	No	No	Strap end
Long Marston	2	4,5	Yes - 1	No	<a href="#">Strap ends</a>

Millington	2	2, 5	No	No	No
North Stainley with Sleningford	2	3, ?	No?	inset <a href="#">weight</a>	Tag, pins, <a href="#">strap end</a> ,
Rudston	2	2,?	No	Two <a href="#">weights</a>	No
Sancton (Sancton Hill)	2	2, ?	No	No	No
Saxton with Scarthingwell	2	2, ?	No?	No	Tags, pins, strap ends and <a href="#">mounts</a> ,
Sherburn in Elmet	2	3,5	No	No	<a href="#">No</a>
Sheriff Hutton	2	4, ?	No	Possible gaming piece SWYOR-F4C504, inlaid weight SWYOR-4F2B32	Polyhedral pin <a href="#">YORYM-07F383</a> , strap end
Sledmere	2	3, 4		No	No
Sneinton	2	3,5	No	Two Viking mount fragments ( <a href="#">here</a> and <a href="#">here</a> )	No
Stonegrave	2	3, ?	No	No	A polyhedral pin <a href="#">YORYM-2CF1C8</a>
Thirkleby (High and Low) with Osgodby	2	4, 5			Pins and <a href="#">stylus</a> and spindle whorls <a href="#">DUR-9B661C</a> <a href="#">SWYOR-83C676</a>
Towton	2	2,4	No	No	Tag and couple <a href="#">strap ends</a> , also Trewiddle ring
Wentbridge	2	3, 5	Di	No	No
Wharram le Street	2	2	No	Dirham <a href="#">fragment</a> ,	late 9C York <a href="#">penny</a> , couple of strap ends
Wintringham	2	?	?	<a href="#">Ingot</a> ,	<a href="#">pins and strap ends</a>

Acaster Malbis	1	0	No	No, but the coin has a central perforation, so could have been used as an inset for a Viking weight	Two pins and a mount <a href="https://finds.org.uk/database/search/results/countyID/25595/districtID/25595/parishID/21411/broadperiod/EARLY+MEDIEVAL">https://finds.org.uk/database/search/results/countyID/25595/districtID/25595/parishID/21411/broadperiod/EARLY+MEDIEVAL</a>
Allerston	1	3		No	Nope!
Askham Richard	1	5	No	No	Polyhedral pin <a href="#">LANCUM-91B821</a>
Bagby	1	5	No	Only an <a href="#">inset weight</a> & penannular fragment LVPL-0B9532 & DUR-540555	No
Barton upon Humber	1	3		Yes, ingot <a href="#">NLM-D6A974</a> and 2 discoid weights NLM-FFFB64, including one inset NLM-0B0D52	No
Barrow upon Humber	1	uncertain		No	No
Birkin	1	5	?	No	Only ?
Bolton Percy	1	5	Dii	No	No
Borrowby	1	0		<a href="#">Ingot</a>	No
Brodsworth	1	3		Weight with space for inlay <a href="#">SWYOR-45C4A1</a>	No
Burniston	1	4		No	Not much e.g. <a href="#">strap end</a> - ?gaming <a href="#">pieces</a>
Burythorpe	1	2		No	<a href="#">Woolly</a> _9C pin, Scabbard
Cawood	1	3		No	?discoid <a href="#">weight</a>

Church Fenton	1	5		No	No
Easingwold	1	3		No	Strap ends and <a href="#">pins</a>
Elloughton cum Brough	1	3		No	No
Elmswell (in Garton on Wolds)	1	5		No	Not really
Foxholes	1	2		No	Polyhedral pin <a href="#">YORYM-AD2CD6</a> + spindle whorl <a href="#">YORYM-3AAE82</a>
Garton on the Wolds	1	0		No	As above
Harpham	1	4		No	Later Viking penny YORYM-F51D44, pin YORYM-2F1748
Healaugh	1	1		No	No
Helperby	1	4		No	<a href="#">Not really</a>
Hornsea	1	0		No	No
Huddleston with Newthorpe	1	3		No	<a href="#">One pin</a>
Hunmanby	1	3		coin of <a href="#">Burgred</a> , dirham (Mackay & Naismith)	<a href="#">Pin and strap end</a> , 9C <a href="#">ring</a> ,
Kellington	1	5		No	Trewhiddle style <a href="#">fragments</a> , with strap ends and pins

Kirby Underdale	1	2	No	No	No
Langtoft	1	1		<a href="#">Ingot</a> ,	strap ends
Langton	1	3	No	No	No
Leake	1	3		No	No
Ledsham	1	3		No	No
Ledston	1	3		No	No
Londesborough	1	2		No	<a href="#">pins</a>
Low Santon	1	5		No	<a href="#">variety</a> of pins and other early med finds in Low Santon area of parish esp. <a href="#">Cuthred kent</a> & <a href="#">Ceonwulf</a> penny
Markington with Wallerthwaite	1	5		No	1 silver <a href="#">strap_end</a>
Melbourne	1	5		No	No
Micklefield	1	0		No	Two <a href="#">strap_ends</a>
Naburn	1	5	Dii	No	Couple of <a href="#">pins</a>
Nidd	1	0		No	? <a href="#">silver mount</a>
North Duffield	1	2		No	?silver penny fragment <a href="#">?cut</a> , <a href="#">pins and strap_ends</a>

North Kelsey	1	5		No	Polyhedral pin LIN-51DB35
Norton le Clay	1	4		No	No
Norton on Derwent	1	2		No	No
Oswaldkirk	1	5		No	No
Pickering	1	2		No	No
Plompton	1	5		No	Two pins SWYOR-BF8212
Pontefract	1	5		No	2 convex lead weights, 2 strap ends
Preston	1	5		Silver <a href="#">ingot</a> ,	strap <a href="#">ends</a> <a href="#">mounts</a> <a href="#">pins</a>
Ripon	1	3		No	Ring similar to one from <a href="#">Cuerdale</a>
Rowley	1	3		Weights ( <a href="#">here</a> and <a href="#">here</a>	), strap ends and <a href="#">pins</a>
Saxby All Saints	1	3		No	Strap end
Scawby	1	3		<a href="#">Weights</a> (discoid, conical and inlaid), <a href="#">ingot</a> <a href="#">mould</a> ,	plus copper-alloy pins and strap ends
Silpho	1			Cut ingot YORYM-74BC82	Two pins, buckle, strap end <a href="#">YORYM-ABF8EC</a>
Skerne and Wansford	1	3		No	No
Skidby	1	2		No	No
South Milford	1	4		Dirham <a href="#">fragment</a>	pins, strap ends

Stamford Bridge	1	5	No	No	No
Stallingborough	1	5	D	No	Two spindle whorls
Stillington	1	5	No	Ingot YORYM-F70826,	Niello strap end LANCUM-F9B562 + spindle whorls
Stockton on forest	1	3		No	Couple of <a href="#">strap ends</a>
Studley Roger	1	2		<a href="#">Dirham</a> , <a href="#">weight</a> ,	also pins, <a href="#">mounts</a>
Stutton with Hazlewood	1	3		No	Hoard of 17 pennies <a href="#">SWYOR-29C35A</a> 2 km away, also bearded weight SWYOR-EF9E81
Thormanby	1	5		No	<a href="#">weight?</a>
Walton	1	3		No	No
Welton	1	2	Group A	<a href="#">Gaming piece</a> , lots of pins	
Wheldrake	1	5	D	Possible Viking age weight NLM-26D4B9	Trewhiddle style strap end <a href="#">YORYM-D0B536</a>
Wilberfoss	1	5		Discoid weights ( <a href="#">here</a> and <a href="#">here</a> )	
Wistow	1	4	No	No	Spindle whorls <a href="#">SWYOR-02E0B7</a>

### Parishes within the coldspot in Northumbria described in §6.3

Parish	No. coins	Periods	Derivative	Vikng Great Army finds signature	Other MD finds from 9C
Aberlady	11	1-5	Group A, D	None	Largest Anglo-Saxon building in Scotland <a href="https://www.eastlothiancourier.com/news/14620182.archaeologists-find-evidence-of-largest-anglo-saxon-building-in-scotland-in-east-lothian/">https://www.eastlothiancourier.com/news/14620182.archaeologists-find-evidence-of-largest-anglo-saxon-building-in-scotland-in-east-lothian/</a> <a href="https://nms.scran.ac.uk/database/record.php?usi=000-190-001-225-C">https://nms.scran.ac.uk/database/record.php?usi=000-190-001-225-C</a>
Hackforth	8	2-5		No	No
Thirston	6	2, 3, 5		Gaming pieces, a weight	Strap ends, pins, mid-Saxon loom
Hart	5	2, 4, 5		No	9C stone scupture
Hutton Rudby	4	3, 5		No	No
Kirby Hill	3	Uncertain		No	No
Yafforth	3	3, 5	D	No	No
Formby	2	2		Polyhedral weight	Strap end
Meathop and Ulpha	2	5			the Merlewood Cave site, <sup>5</sup> near Grange-over-Sands, where further Northumbrian coins, as well as Roman pottery

<sup>5</sup> [https://www.heritagegateway.org.uk/Gateway/Results\\_Single.aspx?uid=a63a93f6-d126-4747-93c4-f66f81aec6ba&resourceID=19191](https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=a63a93f6-d126-4747-93c4-f66f81aec6ba&resourceID=19191)

					fragments, were found in 1892 and subsequently associated with the Viking Great Army
Snape with Thorpe	2	5, uncertain		Hack silver YORYM-CB94B2	Vairous pins and strap ends
Ainderby Steeple	1	5		No	Polyhedral pin SWYOR-32FB55
Aldbrough	1	3		No	No
Beetham	1	5	Di	No	Parish does include Dog Hole Cave site, with early medieval finds of beads and human skeleton with cut marks remains (Wilkinson et al. 2011).
Ellington and Linton	1	5		No	No
Eskdale	1	Illegible		No	No
Gilling with Hartforth	1	3		No	Hoard of Mercian 4 pennies <b>DUR-F9CF1B</b>
Heaton and Lostock	1	5	Dii	No	No
Hornby	1	Uncertain		No	No
Kettlewell with Starbotton	1			No	No
Kirkby Fleetham	1	Uncertain		No	No
Matfen	1	5	D	No	9 miles from Hexham hoard findspot

Settle	1	-	-		there are two further metal detected finds of a copper-alloy strap end and an Anglo-Scandinavian key, from a site known as 'Ribblehead'. There was also a report in 1784 of the discovery of a disc brooch and early medieval silver coins when the cross was demolished <sup>(6)</sup> . There was also the discovery of a further strap end in 1983 <sup>(7)</sup> .
Stillington and Whitton	1	5	Dii	No	Strap ends
Walworth	1	5		No	One pin
Well	1	5	Dii	Hoard YORYM-CEE620 - 30+ ingots, etc but probably c.910	Pins, strap ends

<sup>6</sup> [https://www.heritagegateway.org.uk/Gateway/Results\\_Single.aspx?uid=f0d11609-d44c-47ab-bb88-66ae181603e4&resourceID=19191](https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=f0d11609-d44c-47ab-bb88-66ae181603e4&resourceID=19191)

<sup>7</sup> [https://www.heritagegateway.org.uk/Gateway/Results\\_Single.aspx?uid=387d842e-2a91-4080-acfe-58ef589b9ae1&resourceID=19191](https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=387d842e-2a91-4080-acfe-58ef589b9ae1&resourceID=19191)

Parishes within the coldspot in Mercia described in 6.3

Parish	No. coins	Periods	Derivative	Viking Great Army finds signature	Other MD finds from 9C
Gainsborough	10	1, 4, 5	Di (3), Dii (1)	No	No
Tickhill	7	2, 3, 5		No	<a href="#">spindle whorl, strap end (2)</a>
Caistor ('West Lindsey' on PAS)	6	2, 3, 5		Weight NLM-606A30, Viking strap fitting NLM5272,	coin of Ecgberht of Wessex,
Grimsby	5	3, 5	D	No	No
Martin	4	5		No	Strap end
Swinhope	4	2, 3		<a href="#">Weights</a> , gaming <a href="#">pieces</a> , Scan <a href="#">brooch die</a> 9C/10C, silver <a href="#">ingot</a> , 9C silver enamel <a href="#">brooch</a> , Aethelwulf/Wessex <a href="#">coin</a> ,	
Dunham on Trent	3	3, 4, 5		Gaming piece <a href="#">NLM-84D5E1</a> , 4 Viking Age weights <a href="#">NLM-756FC2</a> (inset one)	pins, strap ends, hooked tag
Hatton	2	Uncertain		Viking style" brooches and pendants (no images), <a href="#">gaming piece</a>	<a href="#">pins and strap ends</a>
Irby upon Humber	2	3		No	No

<b>Eyton</b>	2	3, 5		No	is 3km to the north west of the town of Leominster, where an internationally significant Viking hoard, probably dating to the late 870s, was discovered in 2015 to the north east ( <a href="#">Hoverd 2020</a> ).
<b>Little Carlton</b>	2	1, 3		No	Mid-Saxon abandoned site <a href="#">weights</a> , but also <a href="#">eccl. Objects</a> & these fossil amulets are <a href="#">just cool</a> , lots of <a href="#">coins</a> - mostly sceattas, but also Carolingian and other silver 9C pennies, as well as a lead copy
<b>Market Rasen</b>	2	5, uncertain		Cu <a href="#">ingot</a> , Irish brooch <a href="#">fragment</a> ,	No
<b>Riby</b>	2	3		No	pins, brooches, strap ends , niello <a href="#">ring</a> , questionable gaming piece NLM-9C6433
<b>White Ladies, Aston</b>	2	3		No	Two strap ends
<b>Bardney</b>	1	3		9C frisian <a href="#">solidus</a> , inset <a href="#">weight</a> with Northumbrian penny, Baldred <a href="#">penny</a> ,	<a href="#">Strap end</a> , Trewiddle <a href="#">strap end</a> (late 9C)
<b>Binbrook</b>	1	5	D	Pierced <a href="#">dirham</a> + <a href="#">fragment</a> , gaming <a href="#">piece +1 +1</a> , ?9C <a href="#">ring</a> , <a href="#">weights</a> , <a href="#">trial piece</a>	also lots of strap ends, pins, mount
<b>Brewood</b>	1	3		No	inlaid strap end WMID-5AC3B1 - see figure 6.44) and a copper-alloy pin (WMID-844CF8).

Buslingthorpe	1	2		No	Strap end
Cassington	1	5	Double reverse	No	Saxon settlement, including pits and a potential hall was excavated between Cassington and Yarnton (Hey 1994).
Crowmarsh	1	2		No	a variety of strap-ends, a piece of potentially Irish gilt metalwork (SUR-727566), a copper alloy pin (BH-0EF5C0).
Dean and Shelton	1	3		No	a sword pommel (NARC-7A77E6)
Ellington and Linton	1	5		No	No
Essington	1	Uncertain		No	No
Girton	1	3		No	Two pins
Grendon	1	4		No	(Coumts 2015) pottery sherd
Gringley-on-the-Hill	1	5	D	No	<a href="#">Pin, strap end.</a>
Hinton Waldrist	1	Uncertain		No	No
Kirkby la Thorpe	1	3		No	Trefoil <a href="#">brooch</a> (Cu), pins <a href="#">e.g.</a> , cut (?) St Edmund <a href="#">penny</a> , wire <a href="#">ring</a> (?), strap ends inc. Scan style <a href="#">one</a>
Lambeth	1	3		No	No
Ludford	1	5	D	No	<a href="#">tags, strap ends + pins</a>

<b>Melton Mowbray</b>	1	3		No	a ditch from Burton Street dated to the period (Clay 2005), as well as some metal-detected material which includes a Carolingian denier (LEIC-9F7227), amongst other finds which are particularly concentrated along the present-day A606 and A607.
<b>Milton-under-Wychwood</b>	1	5	Dii	No	a possible Saxon settlement has been suggested at Ascott-under-Wychwood, which is 2km away, where a Viking prick spur was discovered prior to 1956 in the river Evenlode (HER 5558).
<b>Nettleton</b>	1	2		weight ( <a href="#">LIN-6BBF60</a> ), gaming piece ( <a href="#">LIN-9F4A5A</a> ) and sword pommel ( <a href="#">NLM-D8B031</a> )	Pins, strap ends
<b>Norton Disney</b>	1	5		<a href="#">Gaming piece</a>	<a href="#">9C brooch</a>
<b>Padbury</b>	1	2		No	Strap end, (BUC-0AD457
<b>Pampisford</b>	1	3		No	for early medieval settlement has been found on the site of Sawston Hall (Mortimer 2006).
<b>Rampton</b>	1	Uncertain		No	Pins
<b>Retford</b>	1	5	D	No	No
<b>Roebuck</b>	1	3		No	No

Royston	1	3		No	No
Sleaford	1	5	D	Scan <a href="#">weight</a>	<a href="#">hooked tag</a> , Carolingian mount turned to <a href="#">brooch</a>
Soham	1	Uncertain		No	two ninth-century strap ends found in the area (HER 870058), as well as metal-detected strap ends (SF-72D330), a copper-alloy pin (SF-5BED71).
Somersby	1	5	D	no	Strap end
South Anston	1	3		No	No
Spridlington	1	3		<a href="#">Inset weight a</a>	pins
Stapleford	1	Uncertain		No	No
Wantage	1	5	D		sword pommel (BERK-4D4158), strap ends (BERK-ACFC66, BERK-A7F871, BERK-A7E943) and silver pennies, including one of Aethelwulf of Wessex (BERK-93C017).
Warsop	1	3		No	Strap end
West Torrington	1	3		No	Strap end
West Wrattling	1	5	D	(PUBLIC-0D8A07). There are also other finds, including a weight that may have had an inset (PUBLIC-9A7372, a piece of	as well as a sword pommel (PAS-A642F3), scabbard (CAM-504954), a hooked tag (CAM-32AF23),

				melted metalwork (CAM-AFA1F8).	
<b>Widmerpool</b>	<b>1</b>			No	No

### Parishes within the coldspot in East Anglia described in §6.3

Parish	No. coins	Periods	Derivative	Vikng GrEat Army finds signature	Other MD finds from 9C
Heacham	6	2, 3, 5	D (3)	No	Copper-alloy pins, strap end (e.g. <a href="#">NMS-67E063</a> )
Brandon	4	3, 5	D (1)	No	Hooked tag (SF-CCF8E4)
Freckenham	4	5	D (Di x 1)	No	Polyhedral pins (e.g. SF-5D3771), penny of Guthrum (SF-E21D06), 9C strap ends (SF-DBE2C7), penny of Ecgeberht of Wessex (SF-4BBA95)
Barton Bendish	2	2, 4	A (1)	No	pins, a brooch, and hooked tags (NHER 17212). Mid Saxon pottery from the area includes Ipswich ware (NHER 23928) and Badorf ware (NHER 23936), finds of which are concentrated in a field to the west of St Mary's church (Rogerson et al. 1997)
Exning	2	3		No	9C strap end (SF-5D38E9) and pin (SF-5CEBFD), silver penny of Alfred the Great (SF-BEFB73)
Rocklands	2	2, 5		polyhedral weight (NMS-A599E8)	Strape ends, pins, mounts, key,
Blythburgh	1	3		No	a significant monastery there (Rye and Williamson 2020). Mid-Saxon pottery has been excavated from test pits close both

					to the present-day church and in the village (MSF37765). Fieldwalking from 1971 to 1975 also recorded Ipswich ware and Thetford ware pottery (MSF23793).
Bradwell-on-Sea	1	3		No	No
Bury St Edmunds	1	4		No	strap end (SF-6C4E42)
Hasketon	1	5		No	No
Helmingham	1	5		No	Thetford ware pottery has been found in the village (MSF4256), as well as an iron blade in the park of Helmingham Hall (MSF4254).
Kelling	1	2		No	copper-alloy pin, a scabbard chape, a Saxon brooch dating to the eighth or ninth centuries, strap ends and harness fittings (NHER 58094 and 33274).
Lavenham	1	5		No	two ninth-century strap ends (ESS-EB4B57, ESS-E2B4D0)
Long Stratton	1	3		a weight inlaid with a Northumbrian penny (NMS-6786FC),	Strap end
Lowestoft	1	5		No	Carolingian belt fitting (MSF34148), a strap end (MSF34145), a broader mid-Saxon finds scatter (MSF23552), as well as a

					disc brooch featuring a copy of a coin of Louis the Pious (MSF1899) are known from the parish
Norwich	1	3		No	Settlement 8/9C
Quidenham	1	2		No	copper-alloy pins (NMS-825DFB, NMS-47B704, NHER30367), strap ends (NMS-ECAD57), hooked tags ( NMS-C34FC7), horse fittings, a silver finger-ring, as well as a fragment of gilded bronze (NMS505).
Roudham and Larling	1	3		discooidal weight (NMS-482D03	Hooked tage, brooches, pins
Shipdham	1	5		No	mid Saxon presence in the area is demonstrated by the remains of two buildings and a large pit (NHER 42664).
Stoke Ferry	1	4		No	No
Talconeston	1	3		Copper alloy ingot NMS-8A5083	Penny of Coenwulf of Mercia, also strap ends from 9C
Wangford	1	3		No	No
Wetheringsett-cum-Brockford	1	4		No	metal-detected finds also align with a Viking Great Army signature, including pins (SF-3A6FA6), buckles, hooked tags ( SF3981), coins and stirrup fragments (MSF3486). There are also three ninth- or

					tenth-century Borre-style brooches (MSF13861), and a Viking style gilded bronze mount (MSF16413).
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## Parishes within Kent

Parish	No. coins	Periods	Derivative	Viking Great Army finds signature	Other MD finds from 9C
Canterbury	2	2, 5		No	<i>Anglo-Saxon Chronicle</i> which describes that in 851 they attacked the town and moved to London defeating Beorhtwulf of Mercia there, before moving into Surrey where they were beaten by Aethelwulf of the West Saxons Penannular brooch found at North Gate (TR 15 NE 18).
Brabourne	1	3		No	Lands held there by Ealburh of Kent, who in 851 is cited by Downham (2017, 11) as a landholder responding to Viking threat.
Lewes	1	4			fortified burh during the ninth century; earthworks connected to St John's Church may indicate the extent of the Saxon settlement
Sandwich	1	4		Carolingian penny of Louis the Pious was recorded from the parish (TR 35 NW 869), but no further MD find	No

## Parishes within Wessex

Parish	No. coins	Periods	Derivative	Viking Great Army finds signature	Other MD finds from 9C
Chichester	1	2		No	Saxon settlement, gold fragment
Damerham	1	3		No	9C minster, given freedom by Alfred Gear, MD strap end and mount,
Old Basing	1	4		No	Cowdery's Down in the Saxon settlement, but nothing else MD 9C
Ryde	1	5	Di	No	No
Shalfleet	1	3		No	Shalfleet on the Isle of Wight has been characterised as a 'productive site' (Ulmschneider and Metcalf 2013). The mixture of finds does include material from the ninth century, such as copper-alloy strap ends and pins, as well as Mercian silver pennies
Sherborne	1	Uncertain		No	Strap end and hooked tag, Saxon religious centre - Sherborne diocese very important Alfred's brothers buried there

St Anthony-in-Meneage	1	5	D	So unusual want to put in in the regional context of other Viking finds in Cornwall e.g Trehiddle hoard, finds of Carolingian deniers and a gold ingot in St Buryan (SUR-BBAE96)	
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## Abbreviations

- ADS – Archaeology Data Service
- BRP – Bamburgh Research Project
- CKN – *Coins of the Kingdom of Northumbria*
- EMC – Corpus of Early Medieval Coin Finds
- LPLS – Leeds Philosophical and Literary Society
- PAS – Portable Antiquities Scheme
- RVEC – Records from Victorian Exhibition Catalogues
- TSS – *Thrymsas, Sceattas and Stycas*
- VASLE – Viking and Anglo-Saxon Landscape and Economy Project

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