Lindisfarne: The Holy Island Archaeology Project

Interim Assessment Report 2018 - 2019

Chris Casswell, David Petts, Brendon Wilkins,
Indie Jago, Johanna Ungemach and Joshua Hogue

Lindisfarne: The Holy Island Archaeology Project

Interim Assessment Report 2018-2019

Compiled by:

Chris Casswell, David Petts, Brendon Wilkins,
Indie Jago, Johanna Ungemach and Joshua Hogue

With contributions by:

Anwen Caffell, Gerry McDonnell, Rosalind McKenna, Phil Mills, Hannah Russ, Andrew Sage

DigVentures

The Workshop
24a Newgate
Barnard Castle
County Durham
DL12 8PL

hello@digventures.com
0333 011 3990
@thedigventurers

Purpose of document

This document has been prepared as an Interim Assessment Report. The purpose of the document is to provide an account of the archaeological excavations undertaken in 2018 and 2019, including primarily results of fieldwork, specialist reporting and links to the full archaeological record. It is supported by an easily accessible online database of all written, drawn, photographic and digital data.

DigVentures accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

Carbon Footprint

A printed copy of the main text in this document will result in a carbon footprint of 99g if 100% post-consumer recycled paper is used and 126g if primary-source paper is used. These figures assume the report is printed in black and white on A4 paper and in duplex.

DigVentures is aiming to reduce its per capita carbon emissions.

Copyright

Project summary

DV project code and type	LDF18 and LDF19
National Grid Reference	NU 12670 41760
County	Northumberland
Title:	Lindisfarne: The Holy Island Archaeology Project Interim Assessment Report 2018-2019
Author(s):	Chris Casswell MCIfA David Petts MCIfA PhD Brendon Wilkins MCIfA Indie Jago Johanna Ungemach Joshua Hogue DPhil
Origination date:	1 August 2020
Circulation:	Stakeholders and DV specialist team
Reviewed by:	Joshua Hogue DPhil
Approval:	Manda Forster PhD MCIfA Brendon Wilkins

Acknowledgements

Thanks are due to our project partners at Durham University, particularly to David Petts who has not only helped us throughout but was instrumental in our involvement in the project. Thanks are also extended to the landowners, Crossman Estate, and to the Diocese of Newcastle for giving us permission to excavate. Mr J Patterson provided kind support and practical help, by facilitating access to the trenches and a place to store our tools.

Further contributions, helpful advice and direction throughout this project could not have been achieved without the following groups. The Institute of Medieval and Early Modern Studies, Durham University for support in bringing the project together in its early stages. David O'Conner and the Trustees of the Crossman Hall for providing a dig HQ, and Lindisfarne Pilgrims Coffee House for supporting the caffeine needs of the team. A big thank you is also due to the people of Holy Island for welcoming the team to the island and for taking such an active interest in the project.

The project is managed for DigVentures by Brendon Wilkins with Lisa Westcott Wilkins in the role of Project Executive. The project is supported by Dr David Petts from Durham University, who jointly directs the fieldwork with Chris Casswell, DigVentures. The project was funded exclusively by voluntary contributions from the public, so final thanks must go to our community of Venturers, without whom this work would never have taken place:

Kate Allison, Kim Andrup, Paul Antony Hartley, Jeremy Arnold, Helen Avery, Rita Baker, Alex Barrett, Ross Barrett, Anne-Claire Bennion, Ben Bennion, Jules Bennion, Rose Bennion, Dana Bentley, Gemma Bevan, Kevin Bewers, Myron Bloom, Martin Braddock, Marty Brotzge, Chris Brown, Elizabeth Burr, Sylvia Burton, Tobias Busemann, Kevan Cadman, Anne Campbell, Claire Capelin, Megan Carnell, Sonya Carnell, Ed Carter, Eve Carter, Marie Carter, Heather Casswell, Nick Casswell, Briar Chalmers, Ken Clark, Kristine Clark, Samuel Clayson, Tina Clayton, Shelda Cohen, Jim Colby, Rory Collins, James Combe, Jennifer Compton, Charmaine Conaghty, Elsa Conway, Les Cook, Paul Cookson, John Cooper, Liam Cosgrove, Michael Cosgrove, Victoria Cottam, Karen Cowart-Smith, Jane Cramp, Philip Cramp, Georgina Critchley, Isaac Critchley, Elizabeth Cruddace, Faye Cruddace, Janet Cruddace, Philip Cruddace, Hugh Dare Barrington Hall-Craggs, Angharad Davies, Evelien de Haan, Matthew Devine, Matthew Dillon, Paul Dudley, Sally Dye, Jemima Eastwood, Michael Eden, , Ingrid Eglese, Anita Elkes, Jacqueline Elliot, Wilma Ellis, Mandy English, Roger Ferrand, Joseph Fielding, Robert Foreman, David Free, Claire Gamble, Simon Gardner, Hugh Gilmour, Peter Gould, Dorothy Graves McEwan, Mandy Gravett, Colin Greenhalgh, Patricia Gregg, Chris Griffiths, Emma Hall-Craggs, Wade Hall-Craggs, Stephen Hardy, David Hazel, Emma Herd, Joe Herd, Tim Herd, William Hewitt, Jean Hill, Jess Hollerton, Val Hollins, Doug Hopper, Andrew Hornsblow, Diane Hornsblow, Jane Howell, Colin Humberstone, Dara Hysmith, Gioia Iozzi, Christopher Jackson, Jennifer Jackson, Joe Jackson, Linda Jacquest, Linda Jacquest, Ian Jeffrey, Rune Johansson, Kendra Johnson, Kendra Johnson, Ann Josefsson, Christopher Judson, Isabelle Kauer, Philipp Kauer, Edwin Lambert, Malcolm Lander, Sandra Larsen, Chris Leslie, Jenny Lewis, Katrina Lidbetter, Timothy Lidbetter, Eleanor Long, Gavin Long, Ann Ludlow, Stacey Ludlow, Anne-Marie MacIver , George MacIver , Juliette MacIver , Laura Kate MacIver , Julie MacKenzie, Beverley Mackie, Lois Jane Magraw, Gareth Marklew, Jen Marshall, Hilary McAdam, Meta McDaniels, Sean McDaniels, Alice McGuinness, Kirsty McKno, Jill McMullen, Lauren Mercandante, Callum Mercer, Jeanne Mermer, Valerie Metcalfe, Valerie Metcalfe, Karen Milligan, Amber Mingus, Stuart Moore, Lavinia Murhahn, Cheryl Muriel, Annika Murjahn, Monica Murphy, Judy Murray, Graham Niven, Lesley Ogilvie, Susan Olsen, Sven Onnerstad, Michael Paine, Peter Palmer, , Heather Para, Mary Peck, Catherine Petts, Martin Phelan, Mark Pickard, Lesley Pirie, Chris Pitt, Darren Pritchard, Iain Purdie, Ali Redmore,

Simon Redmore, Susan Reese, Emma Reid, Jack Reid, Lee Reid, Rachael Reid, Thomas Reid, Tina Reuwsaat, Laura Rich, Peter J Richards, Joanne Richardson, Neil Richardson, Valerie Riddle, David Riley, Helen Riley , Mary Robertson, Mary Robertson, David Robinson, Lizzie Robinson, Jean Romanowski, Valerie Rowe, Jane Sakson, Jane Samson, Julie Schofield, William Seddon, Rosie Shannon, Robert Sharp, Teresa Simpson, Kate Smeed, Michael Smeed, Hilary Smith, Lisa Smith, Michael Smith, Frances Stenlake, Charles Stephensen, Melanie Stevens, Paul Stirling, Brian Stokes, Jamie Stokes, Joan Sutherland, Ben Swain, Anthony Swift, Chris Swindells, Anne Szlivko, Ian Tait, Diana Tanaka, Richard Tanaka, Fiona Taylor, Veronica Taylor, Gwawr Thomas, Barbara Thompson, Caroline Thomson, Laura Touhey, Llewellyn Toulmin, Arthur Tucker, Matthew Tucker, Paul Tucker, Elizabeth Tutty, Edith Undrill, Louis van Dompselaar, Charlotte Vandervalk, Hilbert Vinkenoog, Curtis Walker, Laura Walker, Nick Watkins, Colin Watson, Thomas Webster-Deakin, Hazel Whelan, Stella Whitworth, Victoria Whitworth, Kath Willans, Kathleen Willans, Lee Williams, Mary Williams, Nicola Williams, Sybil Williams, Sophie Winch, Natalie Wing, Anna Wood, Lesley Wood and Phil Youett.

Executive summary

DigVentures, in partnership with Durham University, were invited to undertake a crowdfunded community-based archaeological research project at Lindisfarne . The project is a multi-staged and multi-disciplinary field research project, incorporating geophysical survey, archaeological evaluation and excavation, and geoarchaeological landscape analysis. The community-focused project was initiated in 2016 and is expected to run to at least 2025.

This report provides an interim assessment of results from archaeological evaluations undertaken in Years 3-4, during 2018 and 2019. Field investigations took place between 3rd – 26th September 2018 and 30th August – 16th September 2019. The overarching aim of fieldwork in both seasons was to provide baseline information to contribute to the future management, research, and presentation of the site, creating multiple educational and participatory learning experiences for community participants.

This report presents assessment results from excavations, incorporating preliminary specialist assessments. The impact of the results and how the results contribute to achieving the aims and objectives of the project are discussed, and recommendations for further work given. This report is one of a number of archive and dissemination products generated by the project, including a digital archive. All products and dig records are available on the project microsite: https://digventures.com/lindisfarne/.

Result summary

Excavations took place between 3rd – 26th September 2018 and 30th August – 16th September 2019. Trench 2 (West/East) was reopened to further investigate the early Christian burial ground and establish a better understanding of the early medieval features and structural remains. Trench 4 was reopened to further investigate the eastern wall of the suspected infirmary cloister and any interior features.

In the northwest of the Trench 2 (West) earliest archaeological remains observed were a series of well-stratified layers truncated by, and exposed in, the partially excavated southern edge of large circular feature. The layers were ashy and charcoal-rich, possibly reflecting high temperature burning events from industrial activity. The large circular feature was partially excavated and projected to have a diameter of up to 8m. It was initially interpreted at having been deliberately backfilled and possibly the remains of a robbed kiln or furnace. There were two later burials cut into the large circular feature. A refuse pit containing numerous marine mollusc shells and infilled with large stones was found in the northeast of the trench. Five inhumation graves were partially exposed along the eastern baulk of the trench.

Eight graves were identified and excavated, containing seven adults, one child, and a foetal, per- or neo-natal skeleton in Trench 2 (East). Large flat capstones, probably associated with a seventh burial, were left in situ, for excavation in the following years. Graveyard soils either side of the remains of a robust wall, first identified and partially exposed in 2017, were excavated exposing the base of the wall, which seemingly overlaid an earlier graveyard soil. The potential remains of a further wall were exposed in the southeast corner of the trench. Of particular significance was the discovery of a rare, glass 'tafl' gaming piece, likely dating from AD700-900.

The earliest feature was a large wall extending across the length of the Trench 4. Excavations on the either side of the wall uncovered layers of pebbles and cobbles, clay and rubble, overlaid by topsoil.

Contents

Tables

Figures

Appendices

1 INTRODUCTION

1.1 Project summary

1.1.1 DigVentures, in partnership with Durham University, were invited to undertake a crowdfunded community-based archaeological research project at Lindisfarne (hereafter 'the Site' – Figure 1). The project has been designed in collaboration with Dr David Petts, Durham University, using a MoRPHE framework (Management of Research Projects in the Historic Environment - 2006). The project is a multi-staged and multi-disciplinary field research project, incorporating geophysical survey, archaeological evaluation and excavation, and geoarchaeological landscape analysis. The community-focused project was initiated in 2016 and is expected to run to at least 2025.

1.1.2 This report provides an interim assessment of results from archaeological evaluations undertaken in Years 3-4, undertaken during 2018 and 2019. The aims, objectives and methods of the season can be found in the project design (Wilkins and Petts 2016) and updated project design (Casswell et al. 2017). Field investigations took place between 3rd – 26th September 2018 and 30th August – 16th September 2019.

1.1.3 The overarching aim of fieldwork in both seasons was to provide baseline information to contribute to the future management, research, and presentation of the site, creating multiple educational and participatory learning experiences for community participants. The community-based archaeological research project was designed to:

- Identify the physical extent and character of the archaeological remains on the site with a programme of remote sensing.
- Characterise the results of non-invasive survey, refining the chronology and phasing of the site with a programme of trenching.
- Understand the site's archaeological and palaeoenvironmental conditions.
- Make recommendations, analysis and publication.

1.1.4 The interim assessment results presented in this report have been circulated to the wider project team. This report is one of a number of archive and dissemination products generated by the project, including a digital archive and metadata, paper archive and artefact archives. All records are available on the Digital Dig Team project site: https://digventures.com/lindisfarne/ddt/browser.php.

2 BACKGROUND

2.1 Research context

2.1.1 Holy Island (Lindisfarne) is a small tidal island (technically a tombolo) lying just off the northeast coast of Northumberland. It is best known, archaeologically, as the site of a major Anglo-Saxon monastery founded in AD635 by Oswald, King of Northumbria and Aidan, a monk from Iona. Whilst a significant quantity of early medieval sculpture has been recovered from the area of the later medieval priory, the site of the early monastic complex has yet to be identified through archaeological investigations. This project aims to locate elements of Anglo-Saxon Lindisfarne building on previous work on the island by David Petts (Durham University).

2.1.2 In addition to Holy Island's important early religious heritage, the island has seen long-term settlement from the Mesolithic to the 21st century. The current Holy Island village and the adjacent priory ruins have been the focus of occupation since the Middle Ages. Following the dissolution of the monasteries in the 16th century, there was substantial investment in constructing defensive installations to protect against possible incursions from Scotland as well as raids from the Dutch. The fishing industry grew increasingly important in the 18th century. During the 19th century the island also became an important centre for quarrying and processing limestone, with lime kilns constructed and in operation on the island at this time. The importance of the limeworks had declined by the early-20th century. Since then, whilst farming and fishing remain important to the local economy, tourism has become increasingly central to life on the island.

2.2 Summary of previous work

2.2.1 Compared with other major early monastic sites, such as Iona, Whithorn, Monkwearmouth and Jarrow, there has been relatively little direct archaeological work in the probable area of the monastic enclosure. The most significant programmes of work, in the immediate locality, have taken the ruins of the medieval priory as their focus. Extensive clearance of the rubble-choked complex of standing structures was undertaken by William Crossman, the landowner in the 1890s, whose work was centred on the cloistral range. His work was supplemented by further clearance by the Ministry of Works (MoW) under the supervision of Charles Peers in the early 20th century. Both sets of work have seen only limited publication (Crossman 1890b; Peers 1923-4) although most of the finds are held by Historic England in their stores in Helmsley. Notes relating to Crossman's work are held in the Northumberland Archives and the paperwork relating to MoW work is at Helmsley. Crossman also carried out some limited exploration on the site of nearby St Cuthbert's Island, the location of a probably Anglo-Saxon hermitage and certainly used as such in the medieval period.

2.2.2 There was no further archaeological work on the island until 1962, when the noted field archaeologist, and excavator of the major Anglo-Saxon palace site at Yeavering, Brian Hope-Taylor, turned his attention to Holy Island. Over the course of a month he carried out a series of excavations in and around the village. He placed three trenches in Rectory Field, due west of the parish church. This revealed evidence for later medieval occupation, although there were hints of earlier features. It was not easy to understand this early activity though due to the limited size of his intervention. He also excavated three trenches on or against the Heugh. Two revealed further evidence for medieval occupation, whilst one, exploring a rectangular feature on top of the Heugh revealed a small building. The lack of any identifiable ceramics from this structure suggests a possible early date, although this has not been confirmed by scientific dating. Hope-Taylor's excavations were never published. Some of his plans, sections and site notes were recovered after his death and are now in the RCAHM in Edinburgh. The project team have digitised them, and their publication is part of the wider aims of this project.

2.2.3 Following on from a small excavation on the site of the current English Heritage visitor centre by Deirdre O'Sullivan in 1977, a major campaign of archaeological work was initiated by O'Sullivan and Rob Young under the auspices of the Department of Archaeology, University of Leicester. This ran from the mid-1980s to the mid-1990s. A wide range of activities took place including geophysical survey (particularly of the

Heugh and the area to the east of the Priory), survey of Mesolithic sites on the north side of the island, earthwork survey of the Kennedy limekilns and other sites, excavations at the major midden of Jenny Bell's Well, fieldwalking, and, most significantly as far as early medieval material is concerned, the site of Green Shiel, an important rural settlement on the north side of the island, which comprised a series of long houses and produced a substantial faunal assemblage. Several interim reports on this material have been published, although no final report has yet been produced (O'Sullivan 1985; O'Sullivan 1989; O'Sullivan and Young 1991, 1992, 1993, 1995, 1996).

2.2.4 Since the cessation of the Leicester campaign of research, archaeological research on the island has largely been limited to Development Control excavation. The most significant intervention of this kind took place on the site of the Lindisfarne Winery, when its shop was extended. This revealed a sequence of post-medieval and medieval activity, including a significant build-up of midden deposits. However, beneath this were a number of earlier ditch and pit features, one of which contained an early medieval comb (NAA 2001). Possible early medieval activity was also identified in excavations carried out in advance of the construction of community housing on Castle View Gardens, which revealed a substantial post-medieval and/or recent soil accumulation overlying at least one, if not two, medieval structures fronting Green Lane, as well as remains of a possible early medieval sunken floored building – frustratingly the archives, finds and environmental samples from this site appear to have been lost. A number of smaller interventions have been made across the village, whilst several of these have produced evidence for late medieval or early post-medieval midden deposits and some structural features; none have produced clear indications of early medieval activity.

2.2.5 In 2012, a major new geophysical magnetometry survey of the island was carried out by Archaeological Services Durham University on behalf of David Petts (Durham University) with the financial support of National Geographic. This resurveyed some areas covered by the Leicester project, as well as taking in large areas to the north and west of the village. This produced evidence for a second cloister at the Priory, probably an infirmary cloister. It also produced a series of features of uncertain date to the east of the Priory church. To the north of the village, little was found, beyond evidence for medieval agriculture and a small ditched enclosure of unknown date. To the west of the village, western extensions of both Marygate and Priors Lane were identified as well as a network of small paddocks or enclosures and an area of potential industrial activity of uncertain type or date (Petts 2013).

2.3 2016 fieldwork

2.3.1 Three evaluation trenches were excavated by DigVentures over the course of the 2016 field season, each located to investigate possible features identified from the geophysical survey. In addition to this a programme of remote sensing was undertaken, including a low-level aerial survey of the site. A full report on the results of this work was made by Wilkins *et al.* in 2016.

2.3.2 Trenches 1 and 2 were located to explore the possible remains of the Anglo-Saxon monastic complex to the east and southeast of the medieval priory church in Sanctuary Close. Results suggested that the area may have originally formed part of an early Christian burial ground which was later abandoned, disturbed and cleared to make

way for a later phase of construction. Disarticulated human remains, stone demolition rubble and broken funerary objects, as well as sporadic quartz pebble fragments and the extremely rare find of a broken 'name-stone' burial marker, were recovered within deposits sealing in-situ burials. The burials had been disturbed and cleared to make way for later structures, although fragments of human bone were large and seem not to have been displaced too far from their original burial placement. Radiocarbon dates from three samples of human bone indicate that the cemetery was in use between the late-8th to late-10th century AD. Structural remains were recorded in both trenches and found to be medieval in date, indicated by the recovery of an 8th century AD Anglo Saxon coin during excavation of a floor surface.

2.3.3 Excavation in Trench 3 revealed extensive evidence for medieval occupation of 13th century AD date and later, which appears to confirm that Prior's Lane had not only existed at this time, but continued into this area and that on the south side it had been flanked by medieval domestic activity. An important aspect of the artefactual and faunal assemblage recovered was the presence of a range of material relating to the maritime economy of the village. The recovered assemblage contained significant quantities of fishbone, iron fish-hooks and clench nails. Whilst Trench 3 did produce a potentially earlier object (bone comb), the bulk of artefactual evidence suggests that the features were 12th century or later.

2.4 2017 fieldwork

2.4.1 The 2017 excavations on Holy Island focused entirely on Sanctuary Close, following on from fieldwork undertaken the previous year. Trench 2 was reopened and extended to the west to further investigate the early medieval cemetery and identify structural remains relating to monastic buildings. Trench 2 was divided into a western half and eastern half with a 2m wide baulk retained between the excavation areas due the presence of an electric cable. Trench 4 was opened to evaluate the results of geophysical survey and characterise buried archaeological remains believed to be related to an infirmary cloister. An assessment report on the results of this fieldwork has previously been published (Casswell et al. 2018).

2.4.2 In Trench 2 (West) structural remains were identified that were thought likely to related to the early Medieval monastic complex. In the northwest corner of the trench features that were uncovered that were provisionally likened to posthole and plank-in-gully construction techniques observed at excavations in Hartlepool dating from the 7th and 8th century AD.

2.4.3 In Trench 2 (East) large upstanding sections of wall were identified that were much more substantial that the structural remains identified in the eastern half of the trench. The upstanding section of wall were provisionally thought to be from a later phase of construction, possibly contemporary with a series of burials recovered in the vicinity. The burials in the eastern half of the trench indicate the use of the area as a cemetery from the early-8th century AD. Two inhumation graves were uncovered, with many more disarticulated remains recorded from overlying layers. The graves were typical of traditional Christian burials – with their heads at the west end of the grave and lying in an extended supine position – and their alignment and position respecting that of the stone wall next to them.

2.4.4 In Trench 4 excavation confirmed the presence of substantial stone walls first identified from the geophysical survey as a low resistance anomaly. The remains likely belonged to an infirmary cloister associated with the Benedictine Priory, many parts of which are still standing to the west of the trench, and thus post-date the early Medieval complex.

3 PROJECT AIMS AND OBJECTIVES

3.1 Background

3.1.1 The principle purpose of the research was first defined in the Project Design (Wilkins and Petts 2016) and was articulated as four overarching aims. These were to define and characterise the physical extent of the site through a programme of non-intrusive (Aim 1) and intrusive excavation (Aim 2), obtaining baseline data that would facilitate the future management of the site (Aims 3 and 4). Following subsequent excavations, the project aims have been refined and expanded, with an additional aim introduced to expand community engagement and participation (Aim 5) (Casswell et al. 2018).

3.2 Aims

3.2.1 The following aims and questions are based on those outlined in the initial Project Design (Wilkins and Petts 2016) and refined following excavation in the Updated Project Design (Casswell et al. 2017). The following aims and objectives informed the strategies adopted during the 2018 and 2019 fieldwork investigations:

3.2.2 Aim 1 – Define and establish the precise physical extent and condition of the Site with a programme of remote sensing and metric survey

- Q1: Can the layout of the site and associated sub-surface archaeology be established by remote survey?

3.2.3 Aim 2 – Characterise the results of non-invasive survey, refining the chronology and phasing of the site with a programme of trenching

- Q2: What can we say about the scale and nature of any structural remains?
- Q3: Can we corroborate chronological phasing for the site, including the presence of earlier and later features and structures, as defined in Aim 1?

3.2.4 Aim 3 – Understand the site's archaeological and palaeoenvironmental conditions

- Q4: What is the current state of the archaeological and palaeoenvironmental material across the site?
- Q5: Can the palaeoenvironmental data recovered from sampling in the trenches inform us about farming, food processing, industrial or medical activities?
- Q6: Can we increase our understanding of the local environment in the medieval period?
- Q7: How well do the deposits survive, and how deeply are they buried?

3.2.5 Aim 4 – Making recommendations, analysis and publication

- Q8: In light of the evidence recovered from this and previous work, can we articulate a link between the multi-phased use of the site and its different areas?
- Q9: Formulate recommendations for further archaeological and palaeoenvironmental analysis at Lindisfarne based on Aims 1-3 and implement a programme to publish and disseminate the results.

3.2.6 Aim 5 – Creating opportunities for people and communities

3.2.7 Public Engagement is central to the Holy Island Archaeology Project, from the initial project set up through to dissemination and beyond. The project offers a range of opportunities for local community members, school children and visitors to the area to get involved and learn more about the archaeology of Lindisfarne. Working closely with the wider project team and the Durham University, participation opportunities in 2018 and 2019 will entail:

- training a minimum of 200 community volunteers in archaeological techniques, including 3D modelling, photogrammetry, post excavation analysis, report writing, archiving and digitisation
- delivering a programme of public events, workshops and exhibitions;
- engaging 100+ school children with our education sessions;

3.2.8 During the excavation, regular site tours and public events will provide opportunities for local community members and visitors to the area to look around the excavations. Volunteers will be invited to join the excavations and will be trained in archaeological skills, co-producing the archaeological archive using DigVentures unique Digital Dig Team software. Results will be recorded directly onto the project microsite, providing live updates of both technical data and social media.

4 METHODOLOGY

4.1 Project model

4.1.1 The archaeological fieldwork was carried out in accordance with the methodology defined in the initial Project Design (Wilkins and Petts 2016) and refined in the latest Updated Project Design (Casswell et al. 2018). All work was undertaken in conjunction with best practice, national guidelines, and published standards, including CIfA Standards and guidance (CIfA 2014). A summary of methodologies is presented below, following detailed descriptions in the Project Design linking specific techniques to aims and objectives.

4.2 Excavation

4.2.1 Excavations took place between 3rd – 26th September 2018 and 30th August – 16th September 2019. The aims of the excavations were to address the research questions associated with Aims 1 and 2 (see above Section 3.2).

4.2.2 Trench 2 from the 2017 excavations was reopened in 2018 and 2019. At the beginning of each field season spoil and the terram membrane placed to protect the archaeological deposits between field seasons was removed. A 2m wide baulk was

retained across the excavated area due to the presence of an electric cable identified on the geophysical survey. The cable divided the trench into western and eastern halves. In text the relevant half of the trench is indicated in parentheses, e.g. Trench 2 (West) and Trench 2 (East). The purpose of reopening the trench was to further investigate the early Christian burial ground and establish a better understanding of the early medieval features and structural remains.

4.2.3 Trench 4 from the 2017 excavations was reopened only in 2018. At the beginning of the field season spoil and the terram membrane placed to protect the archaeological deposits at the end previous field season was removed. Trench 4 was reopened to further investigate the eastern wall of the suspected infirmary cloister and any interior features.

4.2.4 In addition to the continued excavation of Trench 2 and Trench 4 under the direction of the DigVentures team, exploratory geoarchaeological investigation in Glebe Field (Trench 6) was undertaken under the direction of Karen Milek, University of Durham. This landscape based research will be further developed in 2020, and the combined results from both seasons presented in the assessment of 2020 results.

4.2.5 All trenches were located using a GPS prior to the commencement of work, and each area scanned for finds with a metal detector prior to, and during, excavation. All trenches were de-turfed by hand and machine excavation was carried out in Trench 2 using a JCB 3CX fitted with a toothless ditching bucket, removing the overburden to the top of the first recognisable archaeological horizon, under the constant supervision of an experienced archaeologist. Trench 4 was excavated entirely by hand.

4.2.6 Trenches were subsequently hand-cleaned, planned, and photographed prior to hand- excavation. Any archaeological features and deposits exposed in the trenches were hand-cleaned and excavated to determine their nature, character, and date. Carefully chosen cross-sections were then excavated through features to enable sufficient information about form, development, date, and stratigraphic relationships to be recorded. Excavated features were dry sieved for artefacts using a 10mm gauge.

4.2.7 A complete drawn record of the trenches comprises plans and sections drawn to appropriate scales and annotated with coordinates and AOD heights. A single context recording system was used to record the deposits and a full list of all records is presented in Appendix A. Layers and fills are recorded '(2001)'. The cut of the feature is shown '[2001]'. Each number has been attributed to a specific trench with the primary number(s) relating to specific trenches (i.e. Trench 2, 2001+, Trench 4, 4001+). Features were also specified in a similar manner, pre-fixed with the letter 'F' (i.e. Trench 2, F201+, Trench 4, F401+).

4.2.8 All interventions were surveyed using a GPS tied into the Ordnance Survey grid. All recording was undertaken using the DigVentures Digital Dig Team recording system. Digital Dig Team is DigVentures' bespoke, cloud-based, open data recording platform, designed to enable researchers and community participants to publish data directly from the field using any web-enabled device (such as a smartphone or tablet) into a live relational database.

4.2.9 Once recorded, the born-digital archive is instantly accessible via open-access on a dedicated website and published to social profiles of all project participants (community, professional and specialist). Links to all individual trench, feature and context records are provided in Appendix A, from where all associated finds, samples, plans, sections, photographic records and 3D models can also be explored.

4.3 Human remains

4.3.1 The articulated and disarticulated remains were assessed following Historic England guidelines (Historic England 2018). The condition and preservation of the articulated skeletons was noted. The condition of the bone surfaces were assessed following McKinley (2004): scores of 0 or 1 indicated excellent to very good condition with preservation of fine surface detail, scores of 2 or 3 indicated good to moderate condition with some loss of surface detail, while scores of 4, 5 or 5+ indicated poor through to extremely poor preservation with considerable loss of surface detail and modification of the bone profile. A subjective assessment of the amount of fragmentation was made, from minimal (most bones intact) to extreme (most bones in small fragments), and the completeness of the skeletons was expressed as broad percentage groups.

4.3.2 The general age category of each skeleton was recorded – i.e. adult (over 18 years) or non-adult (under 18 years) – and the potential to obtain information during further analysis on more specific age, sex and stature was assessed. The potential to estimate age and sex was based on the presence and condition of relevant parts of the skeleton (e.g. pelvis and skull in adults), and the potential to estimate stature was based on the presence of intact long bones combined with the likelihood of a possible sex estimation. The presence of obvious pathological conditions that would require more detailed analysis was noted, but it is highly likely that more subtle pathological conditions were present that would not be detected during initial assessment.

4.3.3 For the disarticulated remains, a rough count was made of the number of fragments present, and an assessment was made of their general surface preservation and amount of fragmentation.

4.4 Animal bone

4.4.1 All animal remains were identified to element, side and to as low a taxonomic level as possible using the specialist's reference collection and published and online identification guides (BoneID; Hillson 2003; 2005). Quantification for mammal bones used the diagnostic zone method as presented by Dobney and Rielly (1988). Sheep (Ovis sp.) and goat (Capra sp.) or equid (Equus sp. horse/donkey/mule) distinctions were not considered. Bird remains were identified and quantified using the diagnostic zone method as presented by Cohen and Serjeantson (1996). Identification of fish remains was made using widely available identification guides (Archaeological Fish Resource; Camphuysen and Henderson 2017; Nabone Fish; Osteobase; Wheeler and Jones 1989), and quantification used the diagnostic zone method as presented by Barrett (2001) and Harland et al. (2003). Remains of cod family fish were allocated to size categories as described by Cerón-Carrasco (2004). The molluscs remains were identified using online identification guides (Hayward and Ryland 1995), with quantification made using a diagnostic zone method.

4.4.2 A taphonomic assessment of each fragment was undertaken, recording the presence and absence of cut and chop marks, burning and calcination, any evidence for animal activity (canid or rodent gnawing), pathology, and surface preservation; any other surface modifications of note were also recorded. Fragments of bones that could be identified to element but not any specific species were grouped as far as possible using size and class or order categories. At this stage, no attempt was made to sex any of the remains, or to measure any elements.

4.5 CBM

4.5.1 Material was recorded by context with fabrics recorded by a type series, and forms recorded where possible. Metrics recorded were number of fragments (No.), weight in grams (Wt.) and number of corners (Cnr.). Complete dimensions of length, width and thickness were also recorded in mm.

4.6 Archaeometallurgy

4.6.1 The slags were visually examined with classification based solely on morphology, supported by some qualitative Hand-Held X-Ray Fluorescence Analysis. The assemblage was divided into the following three groups with subdivisions (after McDonnell 2001):

- Diagnostic ferrous slags and residues
  - Smithing Slag - randomly shaped pieces of iron silicate slag generated by the smithing process. In general slag is described as smithing slag unless there is good evidence to indicate that it derived from the smelting process.
  - Iron Ore – iron ore, it may not be associated with iron production but could be used e.g. as a pigment.
  - Iron metal – fragments of iron metal, lacking diagnostic form.
- Diagnostic non-ferrous residues
  - Non-Ferrous Metal – fragments of non-ferrous alloys, e.g. spill and droplets.
- Non-diagnostic slags and residues
  - Yellow/Grey 'Slag' - a heat affected yellow/grey slag like material. Some surfaces are smooth, others display vesicles, the material appears quite dense.
  - Green Glazed Slag - similar to the yellow/grey slag but with smooth green tinged surfaces.
  - Clinker - high silica content smithing slag probably generated in a post-medieval coal fired hearths, including e.g. a fire-box.
  - Black Vitrified Stone / Glazed Pebble – stone with a black vitrified surface or pebble with a glaze.

4.7 Lithics

4.7.1 All artefacts were classified using established typo-technological standard recording procedures (e.g. Butler 2005; Inizan et al. 1999). The condition of the object was also recorded, including evidence of breakage, burning, post-depositional damage, and the development of patinas (e.g. Burroni et al., 2002; Luedtke, 1992). All finds were quantified by count and weighed to the nearest 0.1g. All metrical attributes were recorded after Saville (1980).

4.8 Environmental

4.8.1 Subsamples were processed using standard water flotation methods, leaving the flot and heavy residue to be assessed. The flot (the sum of the material from each sample that floats) was sieved to 0.5mm and air dried and the heavy residue (the material which does not float) was not examined. The results presented are based entirely on the material from the flot, which was examined under a low-power binocular microscope at magnifications between x12 and x40.

4.8.2 A four point semi quantitative scale was used, from '1' – one or a few specimens (less than an estimated six per kg of raw sediment) to '4' – abundant remains (many specimens per kg or a major component of the matrix). Identification was carried out using published keys (Jacomet 2006, Biejerinkc 1976, Jones – unpublished and Zohary & Hopf 2000), online resources (http://www.plantatlas.eu/za.php), and the specialists own reference collection. Taxonomy and nomenclature follow Stace (1997).

4.8.3 The flot was then sieved into convenient fractions (4, 2, 1 and 0.3mm) for sorting and identification of charcoal fragments, with identifiable material was only present within the 4 and 2mm fractions. A random selection of ideally 100 fragments of charcoal of varying sizes was made, which were then identified; where samples did not contain 100 identifiable fragments, all fragments were studied and recorded. Identification was made using the wood identification guides of Schweingruber (1978) and Hather (2000). Taxa identified only to genus could not be identified more closely due to a lack of defining characteristics in charcoal material.

4.9 Health and safety

4.9.1 All work was carried out in accordance with its company Health and Safety Policy, to standards defined in The Health and Safety at Work etc. Act 1974, and The Management of Health and Safety Regulations 1999, and in accordance with the SCAUM (Standing Conference of Archaeological Unit Managers) health and safety manual Health and Safety in Field Archaeology (1996), and DigVentures Health and Safety Policy.

5 EXCAVATION RESULTS

Chris Casswell and Joshua Hogue

All digital context and feature records have been archived on the Digital Dig Team system and can be reviewed at https://digventures.com/lindisfarne/ddt/browser.php and by clicking on the links in green in the text.

5.1 Introduction

5.1.1 During the 2018 and 2019 field seasons, Trench 2 and Trench 4 were investigated in Sanctuary Close (see Section 4.2 for methodology). The principle purpose of these excavations was to help define and establish the precise physical extent and condition of archaeological remains (Aim 1), characterise the results of non-invasive survey, refining the chronology and phasing (Aim 2), and to understand the

palaeoenvironmental conditions of the site (Aim 3), as part of the multi-phased Lindisfarne research project on Holy Island (Wilkins and Petts, 2016; also see Section 3.2 above).

5.1.2 Trench 2 interim results from the 2018 and 2019 field seasons are integrated here as they reflect the continued excavation the same areas and represented a continuous programme of investigation. Trench 2 described in text with the relevant half of the trench is indicated in parentheses, e.g. Trench 2 (West) and Trench 2 (East).

5.1.3 Figure 1 shows the overall location of each targeted area, Figure 2 the illustrated excavation results from Trench 2 in 2018 and Figure 3 the illustrated excavations results from Trench 2 in 2019, and those for Trench 4 on Figure 4. Detailed descriptions of every context are included in Appendix A, organised by trench number.

Trench 2 (West)

5.1.4 In 2018, Trench 2 (West) was re-opened from where the 2017 excavation had finished and an additional 8m x 7m extension added in the northwest corner. The trench was reopened to define the limits of the cemetery and determine whether *in situ* burials survived in the western half of the trench, beyond the baulk retained due to the presence of an electric cable, and separated from the cemetery identified in the eastern half of the trench. The purpose of the northwest extension was to investigate the projected wall-lines extending to the north and west beyond the edge of the trench in 2017. In 2019 the trench was reopened in its entirety, including the northwest extension, to continue to investigate any unexcavated deposits or features in this area.

5.1.5 The earliest archaeological remains were a series of well-stratified layers truncated by, and exposed in, the partially excavated southern edge of large circular feature F217. The location of the layer sequence exposed is annotated on Figure 3A and visualised in Figure 3B. Each layer was allocated a context number and described, but the layer sequence was otherwise unexcavated with the intention of further investigation during the 2020 field season. Based on preliminary field observations the sequence comprised nine layers (2140), (2139), (2143), (2138), (2141), (2142), (2137), (2131) and (2083), which had a combined thickness of at least 0.6m. The earliest layer exposed was a compact black deposit of burnt silt and charcoal (2140) that was evident not only in the edge of the robbed-out circular feature F217 but also in the base of the two grave cuts adjacent to it, F219 and F220. This was overlain by two physically separate deposits – a soft light orange yellow silt that displayed signs of redeposited burning (2139) and a firm greyish brown clayey silt with occasional charcoal flecks (2143). Overlying these was a stonier reddish pink deposit of silty clay (2138), and successive layers of burning. The earliest layer of burning comprised light greyish yellow ash with burnt lime and stone inclusions (2141), followed by a mottled yellow and orange burnt clay layer (2142). Sealing these discrete layers was a 0.3m thick deposit of soft greyish brown clayey silt (2137), which in turn was overlain by a lens of very light yellow ash (2131) and compact orange burnt clay (2083).

5.1.6 The ashy and charcoal-rich composition of the layer sequence, as well as, the reddened and blackened colour of the comprising layers, was interpreted in the field as reflecting high-temperature burning events, possibly resulting from industrial activity. If this is the case, the layer sequence may represent an earlier phase of industrial activity before the establishment of the cemetery. However, further investigation is needed to better understand the nature of the layer sequence and its relationship to F217 and later features.

5.1.7 The large circular feature F217 that cut into the aforementioned layer sequence was originally identified during the 2017 fieldwork season (see Figure 2). In 2019 further work was undertaken to investigate this feature and it was partially excavated along its southern extent (see Figure 3). It had a projected diameter of up to 8m, near-vertical sides and a flat base, and was cut to a depth of 0.6m. It was filled primarily by one mixed deposit of loose brownish-pink silty-sand, (2132), which had frequent angular sandstone rubble that increased in density towards the base of the deposit,. Lying on top of this were two stony fills, (2068) and (2069), concentrated on the southern edge of the cut, representing later rubble backfills into the feature. The overall depth and nature of the infilling sediments indicate that feature had been deliberately backfilled, and its overall projected extent suggests the deliberate robbing of a substantial circular feature. In the field it was provisionally interpreted as a robbed kiln or furnace, an interpretation perhaps supported by the evidence of burning and the exposure of the underlying sediments to high temperatures. Its purpose, however, remains unclear without further excavation.

5.1.8 Two adult inhumation graves F219 and F220 were cut into the backfill of the large circular feature. Both were aligned east-west and contained fully articulated human skeletal remains in an extended supine position with heads at the western end of each with hands overlying the pelvis. The feet of one individual were lying close to the skull of the other, suggesting the two graves intercut, however no relationship was observed between the mixed homogeneous fills. A row of large stones aligned east-to-west to the north of these graves, (2084), was initially interpreted in 2018 as a possible wall-line, however they may alternatively mark the position of another unexcavated grave or stones upcast during the original digging of the graves.

5.1.9 A north-south aligned row of stones F213, initially interpreted as the remnants of a wall, was terminated abruptly at its northern end, seemingly cut by large circular feature F217. This relationship suggests that the wall F213 was removed during the construction of the feature F217, but does not exclude the possibility that the wall was contemporary with what lay there before it was extensively robbed. Wall F213 overlaid the early layer sequence. Towards the north end of the wall the legs of an articulated skeleton F233 were found positioned in a gap between stones. No clear stratigraphic relationship between the wall and grave could be ascertained from the excavated remains because of the ephemeral nature of the wall, but in plan it appeared that the burial may have cut the wall, rather than being contemporary with it.

5.1.10 Overlying the features in the northwest of the trench were a number of stony layers (2064), (2065), (2070), (2071), and (2072). These represented the mixed deposits encountered at the end of the 2018 field season and, upon further investigation in 2019, were interpreted as part of the same re-depositional process one might find in a graveyard soil. These were sealed by a less stony greyish brown silty clay layer (2061)

and then by a thin layer of orange brown sandy clay (2057), which were both interpreted as having formed as the result of later agricultural activity on the site.

5.1.11 In the northeast corner of the trench was sub-circular pit F221. The pit feature continued under the baulk to the north and east, and as a result its full extent could not be determined. The basal fill was a identified as orange clay (2108), this was overlaid by a shell-rich fill comprising almost entirely of winkle, oyster, and cockle shells (2109), and capped by a series of large sub-angular stones supported by a sandy silt matrix (2088). It seems likely that the pit was used for refuse, and intentionally backfilled or capped off at the end of its use.

5.1.12 Along the east-facing baulk of the trench, five east-west aligned inhumation graves were found in a 1m wide section excavated through the base of the furrow (2020). None of the skeletal remains found were likely exposed in their entirety, all likely continuing beneath the baulk. It was assumed that the remains represented complete skeletons and, consequently, they were identified, recorded in-situ and carefully reburied at the end of the excavation, rather than being partially lifted. The southern grave in the group F222 was the only one where the remains were found buried in a supine position, with just the skull and upper torso exposed. All other remains were found buried on their right side in an extended position. This included: the legs of an adult immediately to the north F223, an almost complete juvenile F224 next to that, the head and upper torso of another individual F230 , and the torso and upper legs of an adult F227. Individual F227 seemingly cut through an earlier sub-circular F231. The sub-circular feature was left unexcavated for investigations during the 2020 fieldwork season.

5.1.13 To the south of the furrow the earliest layer found was a mixed stone rubble layer (2111). Overlying that was a circular spread of charcoal-rich material (2089), similar in composition to the stony layer of sandy silt (2039) immediately above it. The charcoal layer did not represent in-situ burning, rather a redeposition of material from a high temperature event nearby.

5.2 Trench 2 (East)

5.2.1 In 2018 the entirety of the 2017 trench was re-opened to explore whether any *in-situ* burials remained and were associated with early medieval monastic buildings. In 2019 the trench was once again re-opened in part, with the northern limit of the trench reduced in length and the southern limit extended by an additional 2m to investigate the potential for structural remains.

5.2.2 Excavation has focused on reducing the level of the graveyard soils and associated burials. The graveyard soils reflect a continuous process of deposition and re-deposition through the ongoing use of the site as a burial ground. Many of the graves identified were cut into earlier burials and the backfill of these graves often included disarticulated human remains. Given the continuous nature of deposition, intercutting of graves, and likely rapid backfilling of graves, it was often difficult to identity the edges of features and to distinguish between the infilling backfill and surrounding graveyard soil. Despite the inherent complexity of deposits, a major division could be recognised between an upper stony, orangey-brown sandy clay (2015), and a lower stony, light yellow silty sand (2156). Establishing the exact phasing of the burials associated with the graveyard soils is ongoing and will be established through

absolute and relative dating methods. Currently it is assumed that all burials post-date lowermost layer (2156) and are broadly contemporaneous with the uppermost graveyard soil (2015).

5.2.3 In the southern half of the trench, six articulated east-west aligned burials were identified and excavated. Burial F215 was identified and excavated in 2018, and was found to contain a fully articulated adult skeleton in an extended supine position. Burial F218 was also identified in 2018 and contained the lower limbs of an individual, the upper half of which continued under the west baulk. It was partially lifted in 2018 and 2019.

5.2.4 Burials F225, F228, F229, and F234 were excavated in 2019. F225 contained the partially articulated remains of an adult. It had been heavily disturbed at both the east and west ends, leaving just the lower torso and upper legs visible. F228 had a partial stone lining and contained the remains of an adult skeleton extended in a supine position with the torso and skull twisted to the right. F229 was located immediately east, and possibly cut the end of the aforementioned grave. It contained an adult lying in an extended supine position with the lower legs missing and also a number of disarticulated long bones, most likely disturbed through the construction of the grave and reinterned as part of the backfill for the later burial. F234 contained the remains of two individuals: one adult and an infant. The adult was lying on its right side in an extended position with the infant directly on top in an extended supine position. The remains of a second, probable foetal, per- or neo-natal, skeleton was found comingled with the human remains assemblage, suggesting that the grave may have been occupied by three individuals. A linear arrangement of large flat capstones (2151) was identified in close proximity to the excavated graves in the southern half of the trench and thought to represent the top of another possibly stone-lined grave, although further excavation would be necessary to establish this with certainty. A row of three upright slabs (2152), likely similar to stone grave linings found elsewhere, were also found in the southwest corner of the trench.

5.2.5 In the northern half of the trench, two articulated east-west aligned burials were identified and excavated. F216 was identified and excavated in 2018. It contained the remains of an adult that appeared to lie in an extended position on its right side, however the grave was disturbed on the north side and it was believed that the skeleton would have originally been placed in a supine position. F232 was excavated in 2019 and contained the fully articulated remains of an adult in an extended supine position oriented east-west. F232 was found in proximity to stone concentrations (2047) and (2048), which likely represent displaced capping stones from the burial.

5.2.6 Currently there is a limited evidence for in-situ structural remains within the trench, with the notable exception of large wall F211. The remnants of wall F211 were first identified and partially exposed in 2017, subsequent excavation of the surrounding deposits failed to identify a construction cut on either side of the wall and has shown that the wall was seemingly laid directly on top of earlier graveyard soil (2156). A charcoal deposit (2150) appears to fill a circular feature [2175] and lies immediately to the east of F211. The feature was not excavated and the relationship between it and wall F211 remains unclear.

5.2.7 Towards the end of the 2019 fieldwork season, an additional wall section (2155) may have been identified. The tops of a several stone blocks were exposed in the southeast corner of the trench and may potentially be the remnants of an east-west aligned wall. Further work is necessary to fully establish the limits of the feature.

5.3 Trench 4

5.3.1 In 2017 Trench 4 originally measured 2m x 1m, targeting a recti-linear, low resistance anomaly identified from previous geophysical survey results. This work identified the presence of a large north to south aligned wall interpreted as a second cloister at the Priory, probably an infirmary cloister. The purpose of reopening and extending this trench in 2018 to 10m x 4m was to expose more structural features and characterise the buried archaeology, providing baseline data for future investigation.

5.3.2 The wall F401 was the earliest, and only, feature found in the trench. It measured 0.9m wide and extended across the east end of the trench from north to south. The wall comprised roughly hewn, locally sourced stone blocks – each measuring approximately 0.35m x 0.18m – with no indication of mortar bonding them together. Excavation focused on reducing the overlying deposits down to the depth of the previous year's levels across the entire trench. No dressed stones were found on either side of the wall, but they had been roughly worked and placed to produce straight faces. No construction cut was visible at the final depth of excavation.

5.3.3 On the east side of the wall the earliest layer encountered was a concentration of small pebbles and cobbles (4006) was found in the northwest corner that was overlain by a reddish brown silty clay layer (4004) that contained frequent stone rubble inclusions. To the east of the wall an orange silty sand layer (4007) was found below a clay deposit (4003); both abutting the wall. All remains were sealed beneath the subsoil (4002), the base of which coincided with the top of the wall.

6 ARTEFACTS AND ECOFACTS

Andrew Sage (daub and pottery), Anwen Caffell (human remains), Hannah Russ (animal bone), Phil Mills (CBM), Andrew Sage (Pottery), Gerry McDonnell (archaeometallurgy), Josh Hogue (lithics, small finds), David Petts (small finds), and *Rosalind McKenna (environmental).*

All digital finds records have been archived on the Digital Dig Team system and can be reviewed at https://digventures.com/lindisfarne/ddt/browser.php and by clicking on the links in green in the text.

6.1 Human remains

Anwen Caffell

6.1.1 The total number of articulated skeletons excavated and lifted was ten (Appendix B). However, the assessment indicated that SK2146 had the remains one infant and at least one other even younger individual comingled with it. If it is possible to determine whether these additional remains derive from one individual during analysis, then this would increase the number of skeletons to eleven.

6.1.2 An additional eleven articulated skeletons were uncovered during excavation but were not lifted, and these do not form part of the current assessment.

6.1.3 Seven disarticulated crania/skulls were excavated, all from Trench 2 (Table 4). Further disarticulated remains were recovered from 27 contexts: 22 contexts from Trench 2 (Table 5, estimated to contain ~3900 bone fragments) and five contexts from Trench 4 (Table 6, estimated to contain ~200 bone fragments). Many of these contexts contained a mix of human and animal remains. Human remains were recovered from a variety of contexts in Trench 2, including the topsoil and subsoil, a plough furrow and deposits mixed with rubble related to the clearance of the cemetery. Human remains were also located within a charnel pit and were recovered from the backfills of some of the graves of articulated skeletons. Some of the latter material may derive from these articulated skeletons and this possibility should be evaluated during full analysis. Human remains were also recovered from the topsoil and subsoil in Trench 4, as well as from layers to the east of the wall. Only one possible human bone was present in a layer to the west of the wall.

6.1.4 Seven of the ten articulated skeletons assessed were over 75% complete, while one was 50-75% complete and two were less than 25% complete. Six of the skeletons had minimal to slight fragmentation, with the remaining four having moderate or slight-to-moderate fragmentation; none of the bones of the articulated skeletons had severe or extreme fragmentation. Eight of the skeletons had excellent to good surface preservation of the bones, while two had good to moderate preservation; none of the articulated skeletons had poor to extremely poor bone preservation. Therefore, overall, the skeletons tended to be complete, and the bones tended to be fairly intact and undamaged with good to excellent preservation of surface detail. Although a small number of skeletons were less complete or showed a more moderate amount of damage to the bones, none were poorly preserved or badly fragmented.

6.1.5 In terms of age distribution, eight of the ten skeletons were adults and one SK2062 was either an adolescent or a younger adult. One skeleton SK2146 was a non-adult, likely an infant. As noted above, the remains of at least one more non-adult (possibly a foetus, perinate or neonate) were comingled with this individual. Seven of the adults had relevant parts of the skeleton present that should enable a more precise age estimate to be obtained during analysis. These generally included the pubic symphysis and auricular surface (parts of the pelvis), sternal rib ends, and dentition, though not all were present for every skeleton. The remaining adult SK2081 only consisted of the lower legs and feet, so unfortunately a more precise age estimate would not be possible for this individual. A more precise age estimate should also be possible for the adolescent/young adult SK2062 and the infant SK2146.

6.1.6 In terms of sex estimation, relevant parts of the skeleton (pelvis and/or skull) were preserved for all the adults except for SK2081. It may also be possible to estimate sex for SK2062 if this skeleton has reached maturity. It is not possible to estimate sex reliably for non-adult individuals based on macroscopic observation alone (Mays and Cox 2000), so it would not be possible to estimate sex for the infant SK2146. Five of the adults had intact long bones that should enable stature to be estimated, and it might be possible to estimate stature for SK2062 if this individual is an adult.

6.1.7 All seven individuals with dentitions present were noted to have evidence for dental disease. Two individuals had noticeable joint disease, while eight skeletons had joints preserved which would allow the prevalence of joint disease to be evaluated. Four individuals had other types of pathology, including evidence for trauma, infection/inflammation, metabolic disease, and common developmental anomalies often seen in the spine. The skeleton of an adolescent or young adult SK2062 had pathological lesions of the left tibia that would require radiography to assist with description and diagnosis. The multiple pathological lesions visible in skeleton SK2145 would also require more detailed descriptions and evaluation.

6.2 Animal bone

Hannah Russ

6.2.1 The 2018 and 2019 vertebrate assemblage submitted for assessment from Trench 2 and Trench 4 comprised 2540 fragments, weighing 10.2kg (Appendix C).

6.2.2 The vertebrate remains recovered from Trench 2 in 2018 and 2019 represent a diverse range of domestic and wild mammal, bird and fish taxa. Mammal remains included (in size order from large to small) whale (cetacean), equid (horse/donkey/mule – Equus sp.), domestic cattle (Bos taurus), possible red deer (recorded as Bos/Cervus), domestic pig (Sus domesticus), grey and/or harbor seal (Halichoerus grypus/Phoca vitulina), sheep/goat (Ovis aries/Capra hircus), dog (Canis sp.), European hare and/or rabbit (Lepus europeaus/Leporidae), stoat, weasel or mink (Mustella sp.), European water vole (Arvicola amphibious) and rat (Rattus sp.). Birds included domestic and/or brent goose (Anser anser domesticus/Anatidae), domestic fowl (Gallus gallus domesticus), possible common pheasant (Phisanus), gull (Laridae), common guillemot (Uria aalge), Atlantic puffin (Fratercula arctica), crow genus (Corvus) and blackbird (Turdus merula). Fish remains included ray (Rajidae), conger eel (Conger conger), cods including Atlantic cod (Gadus morhua) and ling (Molva molva), grey gurnard (Eutrigla gurnardus), ballan wrasse (Labrus bergylta), and salmon or trout (Salmo sp.). Two vertebra fragments from context 2001, topsoil, had surface morphology consistent with angler/monkfish (Lophius piscatorius). All three class groups included specimens that could only be identified to size-based clade (ungulate) or class (mammal/bird/fish) groups. Specimens that could be identified at order level or lower formed 20.5% of the 2018 and 2019 Trench 2 assemblage (n=383).

6.2.3 A portion of the vertebrate remains from Trench 2 are of limited archaeological significance as they derive from undateable topsoil and mixed/plough soil deposits. The presence of Leporidae and small burrowing mammal remains also suggests potential disturbance of the deposits. The animal remains attest to the use of cattle, domestic pig, sheep/goat, domestic goose and domestic fowl; consistent with those expected to be recovered from archaeological sites in England dating between the Bronze Age period and recent times (Baker and Worley 2019, 3). Cattle would have been kept for beef, traction, milk and/or leather, pigs for meat, sheep/goat for lamb/mutton, milk and/or wool, and geese and chicks for meat, feathers and/or eggs. These taxa are common features within the assemblages of animal bones recovered from sites within the region and throughout Britain, being five of the main domestic livestock animals. There is a small amount of evidence for the presence of equids, which were likely kept for traction, transportation and/or entertainment purposes. Small mammal remains attest to local environmental conditions capable of supporting

hares, stoat/weasel, rats and the water vole; it is not clear from any of remains that the hare or stoat/weasel played any role in the human economy of the island, such as game meat or fur exploitation. Bird remains included those likely resulting from food waste (goose and chicken) as well as those reflecting the island's natural species diversity (guillemot, puffin, crow genus and blackbird). The fish remains provide evidence for the exploitation and consumption of a fairly diverse range of fish by those living on or visiting the island, of which cods formed the most significant portion.

6.2.4 The whale squamosal bone recovered from Trench 2 provided the only evidence in the 2018-2019 assemblage for cetaceans (though porpoise and a whale plaque are mentioned in earlier assessments of material from the site (Wilkins et al. 2016)). It was not possible to confirm a species identification for the bone at the time of assessment due to the laboratory closures associated with COVID19 pandemic. It is expected that an identification can be made once reference collections are accessible. The closest match made using online resources points to orca/killer whale (Orcinus orca), a species which is known in the North Sea today. Interestingly the only other possibly identifiable bone from this context was from a seal; seal remains were generally rare in the assemblage and as such recovering the remains of two marine animals from this grave fill may be of significance. Further consideration of this find can be found in the discussion, below.

6.2.5 The results presented in this report for Trench 4 include the remains recovered during the 2018 season and available for assessment at the time of reporting. The vertebrate remains comprised 339 specimens including mammals, birds and fish. Equid, cattle, pig, sheep/goat, dog family, possible European hare, European rabbit, and rat were identified in the mammal remains. Birds included goose (domestic and/or brent), domestic fowl, possible pheasant and shag or cormorant (Phalacrocorax sp.). Fish remains included cartilaginous species; tope/school shark (Galeorhinus galeus) and ray family (Rajidae), as well as remains of boney fish; conger eel, Atlantic cod, haddock, possible ling and flatfish (European plaice/European flounder/common dab). All three class groups included specimens that could only be identified to size-based order, clade (ungulate) or class (mammal/bird/fish) groups. Specimens that could be identified at family level or lower formed 28.6% of the 2018 Trench 4 assemblage (count, n=97).

6.2.6 The majority of the animal remains from Trench 4 were recovered from the topsoil (4001) and sub-soil (4002), and are therefore of limited archaeological significance. Layer (4003) contained a small assemblage of mammal and bird bones, as well as pottery dated to the 16-18th century. The animal remains from (4003) included cattle, rabbit and fowl.

6.2.7 Deposit (4006), a concentration of small pebbles and cobbles in the northeast corner of the trench, contained a small assemblage of mammal and fish remains. The mammal remains could only be identified as small ungulate (sheep/goat/roe deer) and medium and large mammal, while the fish remains could all be identified to species and included tope/school shark, Atlantic cod and haddock.

6.2.8 Layer (4007), on the east of the wall, contained two deciduous cattle teeth consistent with being from the same animal.

6.3 CBM

Phil Mills

6.3.1 The 2018 and 2019 CBM assemblage submitted for analysis from Trench 2 comprised 542 fragments, weighing 5106g (Appendix D). Of the material recovered, three separate fabrics were recorded:

- TZ01 – a pale low fired fabric which may be mud brick, although it was somewhat harder than is normally the case for burnt clay. This was the most common fabric noted, but only bricks and some flat fragments were noted. Surfaces were dry formed and very irregular. Mortar was noted on fragments from (2061).
- TZ11 – a red fabric with a pale red core. It was hard with a sandy feel and irregular fracture, had inclusions of common rounded quartz at c. 0.6mm and moderate black iron stone at c. 0.4mm. Forms in this fabric included a brick with thickness of 55mm, suggesting a 17th to 18th century date as well as a fragment of roof tile. The majority of this material was from topsoil with material from layer (2019) being the only stratified examples.
- TZ12 – a red fabric which was hard with a sandy feel and irregular fracture. It had inclusions of moderate quartz at c. 0.4mm and moderate lime at c. 0.3mm. This fabric was noted only in topsoil and was mainly represented as pantile, likely to be 18th century or later in date.

6.3.2 From the assemblage the earliest material appeared to be low fired clean fabric (TZ01). Brick thicknesses of 40mm and 48mm were recorded, although given the poor quality of the material it was hard to determine if these were the original surfaces. If this material is brick then this range would suggest a date range of approximately 14th to 16th century. However, the low-fired nature of this material and the lack of good surfaces strongly suggests that this fabric is more probably the remains of mud brick, so an earlier date cannot be ruled out. The complete thickness recorded for a brick in TZ11 recovered from topsoil was 55mm which, alongside the wiped surfaces and regular rounded arises, suggests that this brick would have a date range of perhaps 17th to 18th century, with the quality of the finish suggesting a brick produced in the later part of the suggested range. There were also fragments of pan tile from topsoil that are unlikely to have been manufactured before the 18th century.

6.4 Pottery

Andrew Sage

6.4.1 The 2018 and 2019 pottery assemblages submitted for analysis from Trench 2 and Trench 4 comprised 195 sherds, weighing 1,260g, and spanned the 12th to 19th century (Appendix D). It was generally very fragmentary, and the average sherd weight was low (6.5g). Only small fragments of individual vessels were present with few identifiable forms and no links were identified between contexts.

6.4.2 In Trench 2, most of the pottery was residual and came from the topsoil (2001), subsoil horizons (2002, 2057), rubble spreads immediately beneath the subsoil (2039, 2061 and 2071), or the plough furrow (2020). Excluding these stratigraphic contexts, the only pottery recovered was an individual fragment of 12th century AD Early Scottish redware from layer (2015).

6.4.3 In Trench 4, similarly most of the assemblage came from topsoil (4001) and subsoil (4002) horizons. The other contexts only contained only small numbers of sherds. A single sherd of late 16th-17th century AD English post-medieval slip-decorated earthenware was recovered from (4003), and four late-16th/17th century AD English post-medieval red earthenware potsherds, two late-18th/19th century AD transfer printed ware potsherds, and one 19th century AD refined white earthenware potsherd were recovered from (4006).

6.5 Other Ceramics

Andrew Sage & Gerry McDonnell

6.5.1 In total, 9 fragments, weighing 659g, were identified as miscellaneous ceramics that could not be easily classified within the CBM and pottery categories (Appendix D). All were in an oxidised red firing fabric, although there were variations in the quantity and range of inclusions present. This amorphous group included two fragments of a possible kiln prop or stacking piece from topsoil (2001), and two large fragments (SF175), initially interpreted as a crucible for melting non-ferrous alloys or mould for casting alloy artefacts, but which needs further study, from fill (2135) within large circular pit F217. Hand-Held X-ray Fluorescence (HH-XRF) was used to sample the fragments from SF175 to assess whether there was any enhanced metal content, but only iron was detected within clay.

6.5.2 The remaining burnt clay/ceramic fragments appear to be production waste from the manufacture of CBM and/or pottery; one fragment from topsoil (2001) and the four fragments from layer (2070) immediately adjacent to large circular pit F217.

6.6 Metalworking debris

Gerry McDonnell

6.6.1 The 2018 and 2019 slag and production waste residues from Trench 2 and Trench 4 submitted for assessment comprised 62 fragments, weighed 2280.3g (Appendix E). The assemblage comprised a wide range of material which indicates ferrous and non-ferrous working in the vicinity, but also there are other residues which could not be identified in the assessment. The material was grouped into three broad categories: diagnostic ferrous slags and residues, diagnostic non-ferrous residues and non-diagnostic slags and residues.

6.6.2 In Trench 2, smithing slags (n=9, 101g) related to iron working were recovered from layer (2015), (2057), (2067), (2069), and (2134). All pieces displayed evidence of liquidity, which does raise the question as to whether they were more specifically smelting slags. Most of these fragments came from layer (2015), which also yielded a piece of iron ore (n=1, 12g).

6.6.3 The largest quantity of material (in terms of weight) were green glazed (n=2, 25g) and yellow/grey slags (n=30, 1809g) from Trench 2. Most was recovered from context (2061). These slags had smooth upper surfaces that were similar to the classic tapped iron smelting slag, but there was no other evidence whether it derived from metal working and were otherwise non-diagnostic. Hand-Held X-ray Fluorescence (HH-XRF) was used on a sample of the yellow/grey slag to determine whether there was an enhanced metal content. Analysis using 40kV accelerating voltage showed the

presence of no other metals other than iron (Fe), with the other major peaks being Calcium (Ca) and Strontium (Sr). Analysis using 15kV accelerating voltage showed that the major elements present were calcium and iron with minor peaks of aluminium, silicon, phosphorus and potassium.

6.6.4 In addition to the aforementioned slags and residues from Trench 2, a single fragment of copper alloy casting debris (n=1, 9.5g) was also recovered from (2070) and a lead object (n=1, 221g) was recovered from topsoil (2001). There was also a small assemblage of clinker (n=13, 28.5g), likely generated in post-medieval coal fire hearths, recovered from layers (2039) and (2057).

6.6.5 In Trench 4, only a small quantity of smithing slag (n=3, 30g) and a heavily corroded iron fragment (n=1, 4.3g) were recovered, both from topsoil (4001). A black vitrified stone (n=1, 40g) was also submitted for assessment from layer (4006).

6.7 Lithics

Josh Hogue

6.7.1 In total, 4 worked flints a primary element, flake, flake fragment, and double endscraper (SF155) were submitted for assessment from the 2019 excavations. All material was residual and recovered from early Medieval and later stratigraphic contexts. An archive catalogue with full descriptions is given in Appendix F.

6.8 Small finds

David Petts and Josh Hogue

6.8.1 In total, 119 registered small finds were recovered from Trench 2 and Trench 4 during the excavations in 2018 and 2019 (SF60 – 178). All small finds are currently undergoing initial assessment. A preliminary breakdown of the material indicates that there are six beads, two buckles, twelve coins, two hone stones, one key, two worked bone objects, two ceramic fragments, seven copper alloy objects, two rings, two worked flints, three human remains, eleven glass fragments, 19 iron nails or bolts, five miscellaneous iron objects, eight lead objects, seven fragments of industrial waste, 14 pieces of worked stone, and one unidentifiable metal object (Appendix G).

6.8.2 All small finds were registered on the Digital Dig Team system, and further details including images of each object can be viewed at http://www.digventures.com/lindisfarne/ddt/browser.php.

6.8.3 Of significance was the discovery of a rare, glass gaming piece (SF131) recovered from subsoil (2002) (Figure 6). Made of dark blue glass with white trail decorations, the gaming piece is crowned with a ring of five white sub-bosses, which indicate that it was likely intentionally manufactured to resemble a king. It likely dates from AD 700-900, and came from a set that would have been used for playing Northern British version of 'tafl', a family of games which were derived from the Roman war game Ludus Latrunculorum, and played in Britain, Denmark, Iceland, Ireland, Norway and Sweden before the arrival of chess in the 11th-12th centuries. Other tafl pieces made of wood or bone have been found in elite burials from Anglo-Saxon England, but only one other glass tafl piece has been found in the British Isles, at the Pictish hillfort at Dundurn in present-day Scotland, making this Lindisfarne piece only the second to

have been discovered (pers. comm. Mark Hall, Collections Officer – Perth Museum and Art Gallery).

6.8.4 A small but increasing number of Anglo-Saxon coins have also being found, broadly dating from the 8th to mid-9th centuries AD. The earliest coin is a Series N (Type 41b) sceatta (SF172) – which with another Secondary Series sceatta from the 2016 season (SF13) indicated coin use in the first half of the 8th century. This is supplemented by a series of Northumbrian minted stycas (LDF 167; 151; 129; 80) all dating to the first half of the 9th century. Whilst it is not easy to compare sizes of coin assemblage between sites due to variations in extent of excavation and recovery levels, the assemblage is broadly comparable in overall profile with the large assemblages from Whitby and Whithorn, although due to their size, the latter have more overall diversity.

6.8.5 The other main assemblage of early medieval material culture is the stone sculpture. This is dominated by a group of six namestones (SF164; SF153, SF137, SF122 SF117 SF108), supplementing the initial discovery of one in Trench 2 in the evaluation stage in 2016 (SF22). Although badly fragmented, presumably due to heavy intercutting and re-use of the cemetery and later medieval ploughing, these act as an important addition to the group of fifteen such name-stones recovered from Lindisfarne and listed in Corpus of Anglo-Saxon Stone Sculpture (Cramp 1977). To date, the excavations have increased the total of recorded examples by 33%. As a group, the examples recovered in 2018 and 2019 conform to the broad tradition of earlier examples – with crosses of varying complexity bearing names in written in Old English and in one case runic. Work is still underway on exploring the epigraphic aspects of this assemblage. In addition to the name-stones the second part of a simple cross of which the bottom half was originally found in 2016 (SF17) was identified nearby in 2018 (SF103). This confirmed the initial interpretation that the carving showed a simple Cuthbert-cross (with its typical cusped arms) flanked by a pair of small crosslets. This has no parallels within the range of early medieval culture known in Northumberland and County Durham, but has a very strong parallel with the so-called Golgotha cross from Whithorn, which although slightly more elaborate is similar in size and design. Whilst name-stones are not found at Whithorn the parallels between the two crosses is remarkable and unlikely to be fortuitous.

6.8.6 There is a range of other small items of certain or probable early medieval date, including a fine example of dress-pin of typical 8th/9th century AD date, with good parallels from sites such as Whithorn, Whitby and York (Hill 1997; Peers and Radford 1943; Rogers and Mainman 2001). A pair of rings found on a disarticulated finger-bone, one bone and one copper alloy (SF144), compliment a simple copper alloy ring found in 2020 (SF186). A fragment of decorated bone has parallels with similar objects from Monkwearmouth and Jarrow (cf. Cramp 2006, WB36-38, p.278 Fig. 31.5.4) and styli/parchment prickers from medieval York (MacGregor, Mainman and Rogers 1999, 1974-5, Fig.930). Other finds include a stone spindle-whorl (SF105) as well as a miscellaneous assemblage of iron objects, mainly nails (including clench nails) and lead offcuts

6.9 Environmental

Rosalind McKenna

6.9.1 Seven samples were assessed as part of this investigation (Appendix H). Charred plant macrofossils were present within two of the samples. Indeterminate cereal grains were recorded in one of the samples, identified based on their overall size and morphological characteristics, which may suggest a high degree of surface abrasion on the grains. This is indicative of mechanical disturbances that are common in features such as pits and ditches, where rubbish and waste are frequently discarded. The results of this analysis can be seen in Table 20. The samples produced very small suites of plant macrofossils, both in terms of quantity and diversity. Due to this fact, other than to state their presence in the samples, nothing of further interpretable value can be gained.

6.9.2 Previous excavations on Lindisfarne Holy Island have produced a small amount of archaeobotanical data. Excavations at the site in the previous two years (McKenna 2017 and McKenna 2018) produced small suites of remains. The remains recorded were also poorly preserved. However, remains of wheat, barley and oat, alongside small amounts of chaff and arable weed seeds were also present. Other excavations that produced data originated at Lindisfarne Midden 84 (van der Veen 1985) where a small number of grains of bread wheat, wheat, barley and oats, alongside chaff, peas, grasses and weeds including sedges were recorded. Excavations at Marygate (Cotton 2002) produced small amounts of charred grain in the form of oats, wheat, barley and possible bread wheat, alongside remains of oat floret bases, grass and weed seeds and hazel nut shell fragments. Excavations at the Heugh (Huntley 1992) produced a single sample radiocarbon dated 800-1000AD which contained many well-preserved rye grains, which were thought to represent a clean, processed crop. Samples dating to the late Saxon / early Medieval period were recorded at the site of Holy Island Village 77 (Donaldson & Rackham 1985) where oats, barley and bread wheat were present. Excavations produced samples that were uphased at the Winery (Rackham & Snelling 2001) also produced small amounts of barley, wheat and oats. The similarity of the results from this site to others in close proximity, seems to show a consistent use of plant remains, alongside the recovery of small assemblages in both quantity and diversity. The findings from this report increase the small dataset for the island, and provide comparable data for any future excavations that may occur.

6.9.3 The presence of root / rootlet fragments within most of the samples indicates disturbance of the archaeological features, and it may be due to the nature of some features being relatively close to the surface, as well as deep root action from vegetation that covered the site. The presence of earthworm egg capsules, together with the remains of insect fragments within some of the samples, and snails in a single sample further confirms this.

6.9.4 Charcoal fragments were present within the majority of the samples, scoring between a '1' and '4' on the semi quantitative scale. The preservation of the charcoal fragments was fair to poor. The majority of the fragments were too small to enable successful fracturing that reveals identifying morphological characteristics.

6.9.5 Where fragments were large enough, the fragments were very brittle, and the material crumbled or broke in uneven patterns making the identifying characteristics difficult to distinguish and interpret, and so only a limited amount of environmental data can be gained from the samples. Identifiable remains were however present in three of the samples, and the results of this analysis can be seen in Table 21.

6.9.6 The total range of taxa comprises oak (*Quercus*) and willow / poplar (*Salix* / *Populus*). These taxa belong to the groups of species represented in the native British flora. As seen in Table 22, oak and willow / poplar were the only recorded species within the samples. It is possible that these were the preferred fuel wood obtained from a local environment containing a broader choice of species. The compositions of the samples are very similar, it is probable therefore that the assemblages of charcoal remains, reflect the deposition or buildup of domestic waste.

6.9.7 Generally, there are various, largely unquantifiable, factors that affect the representation of species in charcoal samples including bias in contemporary collection, inclusive of social and economic factors, and various factors of taphonomy and conservation (Thiery-Parisot 2002). On account of these considerations, the identified taxa are not considered to be proportionately representative of the availability of wood resources in the environment in a definitive sense, and are possibly reflective of particular choice of fire making fuel from these resources.

7 PUBLIC IMPACT

By Johanna Ungemach and Brendon Wilkins

7.1.1 Profiles for all project participants have been archived on the Digital Dig Team system and can be reviewed at https://digventures.com/dig-team/lindisfarne/ and by clicking on each individual profile.

7.2 Introduction

7.2.1 This section details the social impact of the Holy Island Archaeology project public programming for visitors and project participants over the course of September 2019. DigVentures defines social impact as a measure of the positive and negative primary and secondary long-term effects produced by the programme, whether directly or indirectly, intended or unintended, over and above what would have happened in the absence of the project initiative. Results were analysed using a bespoke social impact methodology, drawing on DigVentures' Theory of Change and Standards of Evidence framework (Wilkins 2019, 77; Wilkins 2019, 30).

7.2.2 Public engagement was integral to the research aims of the Holy Island Archaeology project, designed to provide 'a range of opportunities for local community members, school children and visitors to the area to learn more about the archaeology of Lindisfarne' (Casswell et al. 2018, 16). Lindisfarne is situated within an area of significant deprivation. In 2019, it was ranked as being "amongst the 30% most deprived neighbourhoods in the country" – with a 10% decrease since 2015. (Source: http://dclgapps.communities.gov.uk/imd/iod_index.html).

7.2.3 The project therefore presented a major opportunity to help address the strong social and educational needs of the surrounding communities, based on the principle that archaeology can do so much more than answer a planning brief: it can transform lives and communities and provide the kind of public support that underpins positive, sustainable growth (Wilkins 2020: 33).

7.3 Public programming

7.3.1 Since its start in 2016, the Holy Island Archaeology project was supported by 664 contributors from 19 countries, who either followed the progress digitally (n=311) or participated in the trenches and finds room (n=353). This report will focus on the impact on participants and visitors who were engaged with the project during 2019. A carefully designed mix of professional excavation and public participation was programmed over the course of the two week project (3rd until 15th September), creating a breadth and depth of participation opportunities from informal site visits to structured field training. This blended model comprised two weeks dedicated to servicing a research brief with participation and training of venturers in the trench to National Occupational Standards, with public events running alongside (Figure 8):

- Educational session for a school class (11th September) – 45 children
- DigCamp (7th September) – 14 participants
- Excavation and finds room training for adults (3rd until 15th September) – 87 participants
- Three creative workshops (10th, 14th and 15th September) – 23 participants

7.3.2 The project was further supported by 35 digital contributors during 2019, who followed the progress online through videos and social media updates.

7.3.3 The project's digital content shows significant impact during the same period, achieving a reach of 787,800 across Facebook and Twitter, 48,836 post engagements (views, likes, shares or comments), and 5,906 unique page views of the more in-depth archaeological content published on the project microsite: https://digventures.com/lindisfarne/ including background information, dig updates, and archival site records. Traditional TV and print media also covered the project. Whilst these results demonstrate a significant public appetite for the Holy Island Archaeology Project, any evaluation of social impact needs to go beyond a list of output numbers of participants and visitors (Gould 2016). DigVentures has developed a bespoke evaluation methodology for measuring the social impact of public archaeology programmes and this is discussed in specific relation to Lindisfarne further below.

7.4 Evaluation methodology

7.4.1 The Holy Island Archaeology project audience was separated into two broad categories: project participants, who joined the project through a formal booking process, and site visitors, with all opportunities delivered free of charge. DigVentures have developed a methodology for measuring the social impact of archaeology programmes for both participants and visitors, pictured as a Theory of Change detailing outputs, outcomes and impacts (see Appendix J). In this framework, social impact can be conceived as the difference that activities make to people's lives over and above what would have happened in the absence of that initiative. Outputs are a

measurable unit of product or service, such as a community excavation; outcomes are an observable change for individuals or communities, such as acquiring skills or knowledge. Impact is therefore the effect on outcomes attributable to the output, measured against two metrics: scale, or breadth of people reached; and depth, or the importance of this impact on their lives.

7.4.2 The credibility of a Theory of Change rests on the level of certainty that organisational activities are the cause of this change. In order for this certainty to be achieved, the correct data must be collected to isolate the impact to the intervention. The DV Theory of Change is therefore linked to a Standards of Evidence framework designed to articulate and highlight the causal links between activity and change. These tools are then used to create a bespoke, project specific evaluation table linking activities, outputs, outcomes and evidence base (Appendix J).

7.4.3 In support of this overarching methodology, two slightly different data collection strategies were undertaken for both project participants and site visitors; participants were interviewed pre and post dig experience (93% completion rate, or 94 in total for field venturers; 29% completion rate, or 10 in total for digital contributors), and visitors completed a questionnaire following their experience (due to the location of the trench next to a very popular public footpath, the exact number of visitors is unknown, but the questionnaires were completed by 124 people). The age, gender and professional background of participants was derived through digital analytics, with categories derived from the Office for National Statistics, followed by more in-depth analysis designed to reveal 'whether or not people will have learnt about heritage, developed skills, changed their attitudes and/or behaviour, and had an enjoyable experience'. Questionnaires combined closed-end questions easily convertible to statistical data (usually attitudinal questions using a four-point Likert scale to record responses) and open-ended questions designed to elicit extended responses which were then coded for statistical analysis or otherwise consolidated in order to address the observable implications. The social impact results for both groups are discussed in turn below, with evidence organised according to the specific social outcome that activities were designed to achieve.

7.5 Social impact for participants

7.5.1 To ensure that 'a wide range of people will be involved in archaeology and heritage', people were invited to actively participate in the excavation. To help decrease perceived barriers to participation, accessible day and two day sessions were offered to give venturers a taste of the work happening in the trench, as well as more involved week and two week programmes, all of which followed DigVentures' CIfA-endorsed Field School curriculum.

7.5.2 Gender profiles for participants were broadly balanced, with 56% female and 44% male, with the youngest aged 7 and the oldest 77. Participants represented a variety of full-time occupations (56%) and retirees (22%). The remainder were students, either of compulsory educational age or those attending university (19%), or people in long-term unemployment (3%). Those in full time employment were divided into categories based on the Office of National Statistics (ONS) classifications, the breakdown of which can be seen in Figure 8 illustrating that digging and finds lab opportunities were taken up by a significant number of people with low income, as well as young people. Examples of professions included technician, teacher, tax inspector, robot tester,

nurse, nutritionist, greenkeeper, dog trainer, farmer and musician. Taking this into consideration, all age groups and socio-economic backgrounds (apart from routine occupations) were represented in the data, with a marked improvement on existing community archaeology provision compared with the typically retired, over 65 local civic society groups (Wilkins 2020: 33).

7.5.3 Participants joined the project from the immediate locality (43% of participants drove no further than 10 miles to take part in the project), regionally (two thirds of participants living no further than 50 miles from the site) nationally (a third of participants having travelled more than 50 miles to have the opportunity to take part in the project, from as far as Hertfordshire, Kent, Wales, Stirlingshire, Shropshire, Norfolk, London and Derbyshire) and even internationally from Germany, Switzerland, Canada and the United States.

7.5.4 In addition to widening the demographic and socioeconomic range of participation (when compared to existing community archaeology provision), the project attracted an overwhelmingly new audience for archaeology, with 48% of participants having never taken part in archaeology activities before. Pre-experience interviews were completed with all project participants to help understand why each had decided to get involved in an archaeology project, and provide a baseline understanding against which the impact of the experience could be determined through post-experience interviews, dividing people into four different participation levels with different participation intensity (digital, one day, two days, one week or more). Participants answered in their own words, and the responses were coded into ten categories.

7.5.5 The results show that digital supporters are primarily 'passive consumers of archaeology' (50%), closely followed by people with an interest in this specific project be it due to the time period or location on Holy Island (30%), as well as 'repeat supporters' (20%). Overall, these three categories are the main reasons for people from all four contribution levels. The percentage of participants who described themselves as 'passive consumers of archaeology' and who embraced the opportunity to finally get hands-on with their interest (40%) is comparatively high within the group of people who only joined the excavation for one day. Similarly, a total of 3% of 'prospective archaeology students' chose only the One or Two Day options as a taster. Contrarily, 7% of overall participants joined a friend or family member who was interested in the project, but they did not have pre-existing interest in archaeology themselves (Figure 9).

7.5.6 Post-experience 'exit' interviews were also undertaken for all participants, indicating how initial perceptions of archaeology changed and providing evidence for wider social outcomes, such as learning, skills acquisition and well-being. Participants were asked to summarise their highlight of the project in their own words, with responses then codified into four categories in order to visualise the results (Figure 9). The most important consideration for 45% of participants was the 'thrill of discovery', indicating an overwhelmingly positive experience for first time participations. Closely related to this was the experience of real archaeology, and the opportunity to get hands-on experience with finds and in the trench for 42% of participants. Nevertheless, a little over 10% of participants also described the teamwork and camaraderie as the highlight of their experience, illustrating a powerful positive side product of taking part in archaeology. It is interesting to see how the importance of certain elements shifts throughout the different participant levels. A closer assessment of interviewees

answers (often elicited through follow up questions) reveals that in addition to having a good time (such as "The whole thing has been brilliant!"), more subtle impacts could be clearly discerned and will be analysed more in depth in the final report.

7.5.7 In addition to field skills training and finds room activities, an artistic programme was devised to run alongside the excavation as part of AHRC funded PhD scholarship by Jodie Hannis. The goal of this experimental work was to further expand the range of people engaging with archaeological heritage through creative writing workshops engaging aesthetically with the excavation. Three different writers (Catherine Ayres, Lisa Matthews, and Carmen Marcus) were chosen to run the workshops, to broaden the number and range of people who participated by appealing to different interests. Catherine focused on writing personal histories through find from the trenches, Lisa was interested in the naming quality of inscription and fragmentation, and Carmen resonated strongly with the idea of island communities and sea-faring folk. The workshops participants were a mixture of locals, dig participants, students, and writers who came specifically to develop their practice and work with the artists. 14 participants consented to be interviewed. Evaluation of this work is ongoing, with in-depth interviews of workshop participants, aiming to understand how similar creative interventions extend audience reach beyond typical consumers of archaeology, and how artistic activities might add value to the experience of those already interested in the subject.

7.6 Social impact for communities

7.6.1 Alongside structured activities for project participants, other lighter touch opportunities were provided for site visitors throughout the course of the project. An interpretation board was placed alongside the trench-side fence, and observers were encouraged to talk to and interact with the team, and drop into the adjacent finds room to see what had been discovered and learn about the history of the site, the research process, and the day's latest finds. Visitors were encouraged to complete a short evaluation form after their experience, to understand the impact the project had on the wider community. The questionnaires were completed by 124 visitors.

7.6.2 A similarly diverse demographic profile as for participants was also observed for site visitors, in terms of age and gender. A quarter of respondents were younger than 44, with 13% under 25 and 10% over 74. In terms of gender, 56% were female and 44% male. Only 18% of visitor survey respondents stated that the dig was their main reason for visiting the site, but for 80% of visitors, this was their first encounter with archaeology, supporting the wider project outcome that a 'wider range of people will be involved in heritage. ' This audience was predominantly local, with 75% of visitors living within 10 miles of the site, 15% within 10-20 miles, and the remaining traveling from further.

7.6.3 Although the visitor experience was designed to be as accessible as possible, evaluation feedback indicated that the social outcomes contributed significantly towards '*learning about archaeology and heritage, leading to change in ideas and actions.*' 80% of respondents had never taken part in a site tour or visited an archaeological site before. Several visitors were surprised to have "[found] the project here" in the first place, that "a volunteer was there to talk to all the passers-by", and by "the access for [the] public to see what's going on at the very moment'. Many also put forward what they learnt, such as "the finding of human remains and how they get

info from the bones", that there were "mixed graves with women, children and men", or "all the care [that is] needed (and taken)". Visitors described an improved perception of archaeology (57%), or strengthened in their pre-existing interest for the discipline (17%). Almost three quarters (71%) of those respondents found archaeology to be more exciting as a consequence of their visit, and 36% stated that they are now more likely to get involved with archaeology in general. When asked whether they would like to get more involved with archaeology in their local area, 77% of respondents agreed (Figure 10).

7.6.4 As well as changing opinions of archaeology more generally, visitors also described an improved perception of the immediate Lindisfarne locality, supporting the social outcome that *'the local area will be a better place to live, work or visit'*. 84% of respondents who claimed that their impression of the local area had changed, with one respondent clearly stating: "I am staying on the island, have visited the priory, but did not realise there was a site here previously". Another noted that they "came to look at buildings and this made it more real" Although some people already knew about the history of the island, others found an "appreciation of the history of the area" and realised that "it is more interesting, meaningful". The positive impact of the project went even further and provided visitors with a better understanding of the local archaeology, with people saying that seeing the excavation added to their interest, that they gained "further knowledge of the area" and that there is so much more to see and explore (Figure 10).

8 DISCUSSION AND CONCLUSIONS

8.1 Introduction

8.1.1 Despite its historical importance as one of the major centres of Christianity in early medieval Britain, the archaeology of Lindisfarne has remained surprisingly poorly understood. Compared with other high profile sites, such as Monkwearmouth, Jarrow, Whithorn and Iona, there has been a dearth of excavation on the monastic core on Holy Island, and even lesser known early monastic sites, such as Hoddom, Isle of May, Auldhame and Inchmarnock are arguably better understood from an archaeological perspective (Campbell et al 2020; Cramp 12005; Hill 1997; Crone et al 2016; Lowe 2006, 2008 – see Petts 2017 for an overview of earlier archaeological work on Lindisfarne).

8.1.2 However, in the last five years, two major campaigns of excavation (DigVentures/Durham University; HLF Peregrini/The Archaeological Practice) have made substantive progress in starting to unpick the archaeology of the early medieval presence on the Island. Work as part of the HLF Peregrini project focused on a series of features along The Heugh, whilst the DigVentures/DU project (reported on here) has focused on a pair of trenches located to the east of the later Priory, which itself probably overlays the ecclesiastical core of the earlier monastery. This follows an earlier small-scale evaluation stage, in which three smaller trenches were placed to assess interesting anomalies identified on the 2014 geophysical survey.

8.2 Cemetery

8.2.1 The first major phase of activity to be recognised was the presence of a substantial early medieval cemetery. This has been explored most extensively in the Trench 2 (East), but increasing evidence for inhumations are appearing in the Trench 2 (West). The presence of cemeteries at an ecclesiastical site is clearly not a surprise, and similar cemeteries have been uncovered at Hartlepool, Monkwearmouth, Jarrow, Whithorn and the Isle of May amongst others (Cramp 2005; Daniels 2007; Hill 1997; Lowe 2008; James and Yeoman 2008). The nature of burial activity across the Lindisfarne site does seem to show some variation across the two trenches. The burials in the eastern trench are extensive and heavily intercut, indicating use over a considerable time. The difficulty in identifying clear grave cuts is testament to the extent of intercutting, as is the sheer quantity of redeposited human bone found in later graves. On the basis of the radiocarbon dates on charnel and the presence of a number of fragments of early medieval namestones of a type previously found on the island, a broad 8th / 9th century AD date is likely for the majority of the graves identified so far. Although less well understood, the burials recorded in Trench 2 (West) appear to be less heavily recut; the series of graves identified in the sondage in the eastern side of the western trench do not appear to be cutting any earlier graves. These are clearly at a lower level to those in the eastern trench, and may indicate the first phase of burial on this part of the site – samples have been taken to allow a radiocarbon date to be assayed.

8.2.2 A small group of graves were also identified cutting the oven feature/building in the north-west corner of the site. These contained little evidence for redeposited human bone. Recently obtained radiocarbon dates from burials SK2024 and SK2030, excavated in 2017, imply they are most likely to be associated with the refounded Norman Priory, although an earlier date cannot be excluded at this stage (see Appendix I). It is not clear whether this represents a simple spatial expansion of the cemetery into this area towards the end of its use period, or whether there is a genuine gap in burial activity between the 8th/9th century AD and the 11th/12th century AD. Shifts in burial space are commonly found at ecclesiastical sites, with cemeteries falling in and out of use over time (this can be seen for example at Fey Field, Whithorn; McOmish and Petts 2008). A key question that needs resolving is whether burial continued in the area between the traditional (although now contested) mid-9th century date given for abandonment and the re-establishment of a reformed ecclesiastical house in the Norman period. The overall spatial extent of the cemetery is uncertain. There was a lack of redeposited human bone and charnel in Trench 1 which lies a short distance to the northeast, perhaps indicating that the cemetery didn't extend into that area. A similar lack of human bone was also seen in Trench 4 to the south. Here, the topography of the site suggests some levelling up to create a broadly flat platform onto which the cloister could be constructed, which may have resulted in any early medieval burials in this area being more deeply buried and protected from plough damage.

8.2.3 Despite the level of disturbance, some broad conclusions can be drawn about burial rites; all are aligned east-west, and most are prone. The row of possible early graves in Trench 2 (West) includes several lying on their sides, this is unusual but also found in the early phase of burials at Monkwearmouth and Jarrow (Cramp 2005).

8.2.4 In general, hands are found crossed over the pelvis. Even allowing for extensive intercutting, there is (as yet) no indication of coffins in the form of coffin stains or iron nails, although their potential use cannot be entirely dismissed. The 'hunched' posture of several skeletons perhaps suggests they were simply placed in the ground in shrouds.

8.2.5 There are a number of small stone settings found in the cemetery area. These are most likely to be burial linings or kerbs, although it has not yet been possible to directly associate such a setting with a grave. A row of more substantial flat slabs may represent the lintel (or less likely, the base) of a more substantial cist or stone-lined grave.

8.2.6 The large number of white quartz pebbles found across the trench are indicative of the extensive use of these items to mark graves, a funerary rite widely attested in Scotland and Ireland in this period (e.g. Isle of May, James and Yeoman 2008; Whithorn, Hill 1997; Inchmarnock, Lowe 2008). They have also been found to be used in other early Christian ritual activity (Lash 2018). The pebbles are found throughout the cemetery area rather than in particular clusters or concentrations, perhaps implying that they were mainly derived from an early phase of burials but were subsequently disturbed by later inhumations. A number of graves also contained small crinoid fossils, known locally as St Cuthbert's Beads – these may have been placed intentionally with graves, but this cannot be determined with certainty.

8.2.7 An important feature of this area has been the recovery of a series of fragments of early medieval namestones, conventionally dated to the 8th/9th century AD. These small round-headed carvings are distinctive to Lindisfarne and generally carry a simple cross and a personal name. These are usually interpreted as simple burial markers, perhaps originally painted, that would have stood at the head of a grave. The examples recovered from this excavation are badly damaged, most likely resulting from later medieval ploughing but also perhaps by extensive re-use and recutting in the cemetery. Although conforming to the general prototype for such funerary markers, there is considerable variety in their quality, design and the stone used.

8.2.8 There is still much work to be done on the analysis of the skeletal material – but at this stage some broad conclusions can be drawn. The presence of men, women and children (including at least one neonate) make it clear that this cannot be the main monastic cemetery, and is instead likely to be secular in nature; although it is not clear whether the burial population represents the Island community or draws on a wider population, including pilgrims and those who have acquired rites to be buried at the site following patronage of the monastery. This is a question that isotopic analysis in the future has the potential to answer.

8.3 Structure/Metalworking

8.3.1 In the northwest corner of the site, the presence of a simple, post-pad structure alongside a more complex feature seemingly associated with metalworking indicates other forms of activity within the excavation area. Although relatively simple in structure, the presence of wooden structures utilising simple stone post-pads is well attested at other early medieval monastic sites such as Whitby, Hartlepool and Whithorn (Daniels 2007; Hill 1997; Rahtz 1976). Whilst the full extent and plan of the structure has not been ascertained, it appears to have been at least 10m x 5m.

This is larger than any of the similar constructed buildings at Hartlepool. The relationship between the structure and what is increasingly becoming clear is an area of metalworking remains ambiguous. It also remains unclear whether some features that currently lie within the footprint of the building are contemporary or associated with the industrial activity. Based on the parallels from other sites, this stone-footed building is most likely to date to the 8th century AD or later.

8.3.2 There is clearly a substantial stratigraphic sequence in this area. The large cut and possibly robbed feature F217, shows clear evidence of being associated with high-temperature activities, in the form of reddening of the edges and patches of charcoal in the base. This feature itself also seems to cut a series of layers, which although currently only visible in section, may also relate to industrial/metalworking activity. There is still a need to tie down the absolute chronology of this sequence, but hopefully further radiocarbon results and planned archaeomagnetic dating in 2020 will help clarify the dating.

8.3.3 The assessment of the industrial residue found in this area has suggested both ferrous metalworking (smithing, and also tentatively smelting) and non-ferrous metalworking. Such industrial activity is well attested at early medieval monastic sites, such as Iona, Clonmacnois, Whitby and Kinnedar (Barber 1981, fig 42; Reece 1981, fig III.1b; McCormick 1992, illus 4; Noble et al. 2019b; King 2009; Lucas and Paynter 2010). Ferrous metalworking is most likely to be associated with functional craftsmanship such as producing metal tools and structural components (nails/bolts), although evidence from Clonfad (Westmeath, Ireland) has demonstrated large-scale production of iron church bells (Stevens 2012).

8.3.4 The evidence for non-ferrous metalworking is exciting; high-status metalworking, producing elements for reliquaries, shrines as well as personal dress items is well attested at both high-status secular sites (Dunadd; Rhynie – Lane and Campbell 2000; Noble et al 2019) and monasteries (e.g. Iona; Hartlepool; Portmahomack; Whithorn - Barber 1981, fig 42; Carver et al 2016; Daniels 2007, 127 Figs. 7,3-4; Hill 1997, 400; McCormick 1992, illus 4; Reece 1981, fig III.1b;). There is the potential for recovery of mould fragments, crucibles and other related material in future excavation in this area.

8.4 Artefact assemblage

8.4.1 The artefact assemblage is limited, as is typical of early medieval sites. The year on year decrease in medieval and later ceramics is testament to the fact that the project has moved through the mixed and heavily reworked upper layers and is now more firmly within early medieval layers. Much of the assemblage is made up of relatively undiagnostic material, such as ferrous objects. There are however a smaller group of more interesting items. The most prominent item is the small glass item, best interpreted as a playing piece. This has strongest parallels with a similar item from the Pictish hillfort at Dundurn in Perthshire, but broad similarities to other objects from Britain (e.g. Lincoln; Monkwearmouth) and further afield (e.g. Dorestad). Evidence for gaming, particularly boardgames is known from other early medieval monastic sites, such as Inchmarnock and Portmahomack – although these have been of a somewhat simple and functional nature, whereas the Lindisfarne item is clearly of higher status and probably indicative of individuals some significant social rank (either ecclesiastical or secular) being present on the Island. A copper-alloy stick pin of typical early medieval (8th/9th century AD) form with parallels from sites such as Whithorn is

another nice example of material culture that can be associated with confidence to the period of activity connected with the Anglo-Saxon monastery.

8.4.2 Finally, the presence of increasing quantities of early medieval coinage, including a Series N (type 41b) *sceatta* dating c.710-25, a Series Y *sceatta*, produced in the name of Eadberht of Northumbria (737-58) and *styca* of Aethelred II (moneyer Fordred; mid 9th century). In a part of Northumbria well away from urban life or indeed anything resembling the so-called "productive sites" that have been found in Deira, it is probably that monastic sites such as Lindisfarne acted as centres for local, regional and potentially international exchange. Whilst, most coins found to date were issued by Northumbrian kings, the presence of at least one coin from Wessex is a reminder of the more long-distance links that the monastery may have had.

8.5 Environmental remains

8.5.1 Whilst evidence for plant macrofossils have been very limited, the faunal remains assemblage, particularly from the western trench is providing an exciting insight into provisioning patterns for a monastic site. The presence of evidence for the use of equids, cattle, pigs and sheep/goats is perhaps not surprising. However, there is increasing evidence for extensive exploitation of the available maritime resources, including seabirds (puffin; guillemot), shellfish (oysters; cockles), fish (from a variety of niches from coastal waters to those more commonly found in deeper water), pinnipeds (grey or harbour seals) and cetaceans. Although there is a need to tie the dates for this material down better they seem to be broadly early medieval and pre-dating the 10th century 'fish horizon'. Whilst dietary isotopic work on burials from a number of Northern British monastic sites, such as Portmahomack, has shown seemingly little evidence for a marine diet (Curtis-Summer et al 2000), the assemblage from Lindisfarne, as well as a similar maritime assemblage from the early monastic site at Lyminge (Kent) and extensive early medieval shell middens in Scotland do raise questions about the consumption of maritime resources (including but not limited to fish). The opportunity to compare/contrast this faunal assemblage with the dietary signatures from human remains from the adjacent burials has some potential.

8.6 Public engagement

8.6.1 Structured through a Theory of Change, the evidence presented here shows significant impact for both individual participants and community visitors as a consequence of the Holy Island Archaeology project. The project attracted a diverse community of people from an area of high deprivation to explore and investigate the heritage of Lindisfarne in a new and different way. Evaluation shows that the project tackled the strong social and educational needs of the surrounding communities and was a success for public engagement. A high number of local people engaged with archaeology and individuals gained pride for their heritage, as well as ownership of their involvement in the excavation. This project did not only change participants' perception of heritage and archaeology and improved their skills and understanding of the discipline, but also had an impact on visitors to the site. Their understanding of local history improved, while their interest and willingness to participate in local archaeology increased.

8.6.2 As described in Section 7.4 above, the credibility of a Theory of Change rests on the level of certainty that organisational activities are the cause of any impact observed.

To address this DigVentures has developed a 'Standards of Evidence' framework drawing on evidential standards devised by Nesta. This framework determines the levels of certainty that project activities will have a positive impact on the intended outcome, ensuring that the correct data is collected to isolate the impact to the intervention, and that findings are validated externally.

8.6.3 This framework begins with Level 1, where practitioners are able to give an account of hypothesised impact, providing a logical reason why project activities could have an impact on outcomes, and how that would be an improvement on alternative provision. For a project to achieve Level 2 practitioners gather data that shows some change amongst participants, but this may not be sufficient to provide evidence of direct causality. At Level 3 practitioners will be able to demonstrate that they are causing the hypothesised impact, by showing less impact amongst those who don't participate in the project or receive the product/service. Progressing to Level 4 and practitioners can explain why and how the project is having the impact observed, with results potentially independently verified. Finally, at Level 5 the project methodology is robust and well-evidenced enough to be scaled up and operated by other teams or organisations, whilst continuing to have positive and direct impact on the outcome and remaining a financially viable proposition.

8.6.4 The Holy Island Archaeology project offered different activity streams for participants and visitors, and as such, can be seen to have reached differing levels on the standards of evidence framework (Level 2 for community and Level 3 for participant impact). Evidence was collected for both visitors and project participants indicating a change as a consequence of project activities (Level 2), however, impact for participants was additionally established through a pre-and post-experience survey showing a significant improvement on similar data for other local archaeological society groups (Wilkins 2020, 33). Training activities were also independently endorsed through CIfA – an independent body – ensuring that impact evidence for participants can be assigned to Level 3.

8.6.5 The insights gained from this evaluation have established a clear community need and demand for more archaeological work at Lindisfarne, and should assist with the impactful design and funding applications for any future activities.

8.7 Conclusion

8.7.1 Overall, although the current excavations are modest in scale with the overall probable size of the early medieval monastic site (which is likely to have extended beneath most of the modern village and Priory) they are clearly extending our existing knowledge of the archaeology of the monastery of Lindisfarne. They are providing an opportunity to excavate a sample of the buried population, reveal more about subsistence strategies (particularly with reference to the exploitation of the maritime environment) and is starting to engage with evidence for craft and industry. Perhaps most importantly, the excavations offer a unique opportunity for public engagement in archaeology.

9 RECOMMENDATIONS

9.1.1 The following recommendations have been derived from initial assessment of the excavations results and contribute towards the fulfillment of Aim 4 (Q7-9) – making recommendations, analysis and publication, as articulated in the Project Design (Wilkins and Petts 2016, see above Section 3).

9.2 Excavation

9.2.1 It is recommended that the cemetery continue to be excavated to enable characterisation of the sequence of burials. This may provide additional information enabling the phasing of the cemetery to be established. Of critical importance is further excavation of the large circular feature in Trench 2 (West), which has provisionally been described as a robbed-out kiln and yielded ceramic vessels, possibly related to metal workings and/or pottery manufacture. Excavation of this feature following specialist advice will enable a greater understanding of the activities and industrial processes that took place at the site before the establishment of the cemetery. Excavation of this will also help to further expose the underlying layer sequence enabling them to be fully characterised. Given the potentially early date of these sediments a programme of scientific dating, including samples for radiocarbon and archaeomagnetic dating, should be carefully considered.

9.3 Human remains

9.3.1 Evaluation of the condition of the articulated and disarticulated human skeletal remains recovered to date will develop understanding of the current preservation state of human remains at Lindisfarne, and potentially whether bone is better/worse preserved in different areas of the site in respect to localised variation in the burial environment or likelihood of disturbance. For example, the assessment already suggests that the articulated skeletons are better preserved than the disarticulated remains in terms of surface quality and fragmentation, which may relate to the type of disturbance the latter have experienced.

9.3.2 Articulated skeletons typically provide more information on the population during full analysis than disarticulated remains, but the potential of any skeletal assemblage is affected by issues of sample size and preservation (Historic England 2018). While the number of skeletons excavated from Lindisfarne to date (10) is relatively small, these skeletons tend to be fairly complete and extremely well preserved. Their completeness, very good to excellent preservation of surface detail and generally minimal to slight amounts of fragmentation increases the potential information to be gained from full analysis. It will be possible to obtain more detailed data on the demography of the sample, including estimates of sex and more precise age at death for most individuals, which will provide useful information on the composition of the population buried in this location. For example, it could indicate whether the cemetery was serving a typical cross-section of a normal population, or whether a specific sub-group was buried here.

9.3.3 The completeness, minimal amounts of fragmentation and good surface preservation also bode well for metrical analysis and the recording and diagnosing of pathological conditions. It should be possible to record a suite of standard cranial and post-cranial measurements for most skeletons, and stature estimates should be possible for at least

five of the adults. Stature is related to both genetics and the environmental conditions experienced during childhood and adolescence. Obvious pathological lesions were noted in most of the skeletons, and it is highly likely that more subtle pathological lesions are also present but were not observed during the assessment. Full analysis of the pathology present will inform on the health of the population and contribute to an understanding of their interaction with their living environment (Roberts 2009, 154-155). Analysis of the dentitions would inform on their dental health, oral hygiene, and diet (the latter potentially linked to local foods produced and food processing practices), and the prevalence of joint disease could be established through examining all surviving joints. The generally good surface condition of the bone indicates that evidence for new bone formation associated with inflammation/infection, trauma and metabolic disease ought to be preserved. It is unlikely that direct evidence for medical treatment will be present in the skeletal remains from Lindisfarne, since such evidence is rare (Roberts 2009, 184). However, it may be possible to infer something on treatment through examining fracture healing.

9.3.4 Disarticulated remains have more limited potential for further analysis and so have lesser priority than the study of the articulated remains (Historic England 2018), but data from the disarticulated remains can enhance that from the articulated burials and there may be value in analysing them in conjunction with the latter. Data from analysis of the articulated and disarticulated remains combined could provide information on the minimum number of individuals represented by the remains. The disarticulated remains may also provide additional demographic or pathological information, e.g. on the presence of non-adult individuals, or the age and sex of adult individuals, that supplements that from the articulated burials. Efforts ought to be made to ascertain whether any of the disarticulated bone from grave fills was derived from associated articulated burials.

9.3.5 These are the first human remains to have been excavated at Lindisfarne, and it is highly recommended that the articulated skeletons and disarticulated crania/skulls are analysed in full and recorded according to current osteological standards (e.g. Mitchell and Brickley 2017; Brickely and McKinley 2004). Consideration should also be given to the viability of recording the remaining disarticulated remains to enhance understanding of the population and cemetery use. Although the assemblage of articulated remains is small, the context of their burial within a cemetery associated with the early medieval monastic foundation at Holy Island provides a valuable opportunity to learn about the associated population. To provide context and aid interpretation, the data collected should be compared with those from other early medieval populations in northern England/southern Scotland, such as the Bamburgh Bowl Hole, Northumberland (Groves 2010, 2011), Jarrow and Monkwearmouth, Tyne and Wear (Cramp 2005, 2006), and Whithorn, Dumfries and Galloway (Hill 1997).

9.3.6 A full standard osteological analysis would provide a 'baseline' record and interpretation of the population that would form a solid foundation for future specialist research and/or student projects, some of which may involve destructive analysis. It is important that any such destructive analysis is only conducted to answer specific research questions where the methods are justified, and that destructive sampling adhers to accepted guidelines (Historic England 2018; Advisory Panel on the Archaeology of Burials in England [APAPBE] 2013; Squires et al. 2019). Such specialist analysis might include:

- Analysis of peptides in dental enamel to obtain a sex estimate for the infant burial, and potentially any adult remains where a sex estimate was not possible following standard osteological analysis; an advantage of this method is that it is minimally destructive, relatively inexpensive and more reliable than aDNA analysis (Stewart et al 2017).
- Investigation of diet through carbon and nitrogen isotope analysis. Analysis of bone samples from the adults would provide an average of the last 5-20 years of life, depending of the bones sampled (APAPBE 2013), while incremental dentine analysis could potentially produce a 'timeline' from infancy through to the end of adolescence allowing any fluctuations in diet to be observed, depending on whether suitable teeth were preserved (Beaumont et al. 2014).
- Investigation of childhood origin through analysis of strontium (Sr) and oxygen (O) isotopes from dental enamel, potentially also incorporating lead isotopes (APABE 2013). This method may detect non-local individuals and indicate several possible places of origin, although it cannot provide a definite single place of origin. Analysis of Sr and O isotopes established that half the individuals buried at the nearby Bamburgh Bowl Hole were non-local (Groves et al. 2013).
- Genomic, proteomic and microscopic analysis of calculus deposits on teeth (mineralised dental plaque) can provide additional insight into aspects of diet and health (Historic England 2018; Warinner et al. 2015; Radini et al. 2017). Evidence for diet may be present in the form of trapped food particles, DNA and/or proteins, while trapped particles from other substances may relate to environmental or occupational exposure. For example, the recovery of lapis lazuli pigment from the dental calculus of a medieval woman in Germany was interpreted as an indication of her involvement in the production of illustrated texts (Radini et al. 2019). DNA analysis can also identify oral and other pathogenic bacteria (though not all will have been causing disease in the person sampled), and may even retrieve DNA from the human host.

9.3.7 The osteological analysis would also inform future public presentation of the site and provide additional opportunities for public engagement. The wider public are generally extremely interested in human remains, and any findings will provide a direct connection with the experiences of the past people who lived, died and were buried at Lindisfarne. In view of the strong emphasis of this project on public outreach, it might be worth exploring whether a facial reconstruction of one of the skeletons with a more intact skull would enhance public engagement.

9.4 Animal bone

9.4.1 A wide variety of animal bone has been recovered from the excavations at Lindisfarne. This has given us a hint at the wild environment of the island and the eating habits of the people who have lived there over the past 1500 years. To be able to further understand this the following recommendations have been put forward for future work on the animal bone:

- It is expected that the whale, seal, mustelid and some of the bird remains could be more precisely identified when skeletal reference collections reopen for access, and it is recommended that this work is undertaken during an analysis phase as an interpretation of these resources cannot be made without specific identifications.
- No further recording work is recommended for the animal remains already assessed from Trench 4, or those from Trenches 5 and 6.

- An overview of material recovered from all seasons following the planned 2020 excavation, incorporating years 2016 – 2019, will provide an useful mid-point review of the animal bone.
- This overview assessment of the complete recovered assemblage will provide an opportunity to research the role of animals on Lindisfarne through previously published work and grey literature reports, and subsequently feed into the research aims and objectives for future years of the project.

9.5 The finds assemblage

9.5.1 Following this assessment of finds material from 2018 and 2019, a number of recommendations can be made for particular material groups. More generally, at the mid-point of the planned project, an overview of the recovered site assemblage (2016 – 2020) will provide a sound platform from which to undertaken future excavations.

9.5.2 Material specific recommendations include:

- The small finds require further post-excavation assessment to establish the need for additional analyses and reporting. All material should be conserved in line with the necessary conservation guidelines in the interim. All iron should be treated with renaissance wax and safely stored in a stable environment.
- Presence or absence of pigment on the surface of the namestones, with subsequent analysis, has the potential to reveal the original form and decoration of the burial markers.
- The potential of the pottery assemblage lies largely in providing dating evidence for the excavated features, and a review of the material recovered from each season of excavation will establish chronological trends.
- The daub indicates the possible presence of a pottery or tile kiln nearby, and mapping the intra-site distribution of fragments might provide a better indication of such activities.
- The slag provides evidence for ferrous and non-ferrous metalworking, and for high temperature activity at the site. Additional analysis could establish whether the iron slag is derived from iron smithing or, because of its liquid morphology, evidence for small scale iron smelting. The nature of non-ferrous metalworking is an important question and, in additional to analysis of the slag itself, analysis of other materials (glazed pebbles, ceramic vessel) to establish their association with technology and metalworking will potentially provide important evidence. A programme of HH-XRF analysis could be utilised to help provide answers or part answers to these questions.

9.5.3 Assessment of the results from the 2018 and 2019 seasons of excavation at Lindisfarne has demonstrated the archaeological significance and potential of the site, as well as its importance as a project which has had, and continues to achieve, social impacts within the local community and beyond. This assessment has informed the archaeological strategy for the 2020 research design, which is presented in the Updated Project Design (Caswell et al 2020).

10 BIBLIOGRAPHY

Alcock, L, Alcock, E A and Driscoll, S 1989, 'Reconnaissance excavations on early historic fortifications and other royal sites in Scotland, 1974–84; 3: Excavations at Dundurn, Strathearn, Perthshire, 1976–77', *Proc Soc Antiq Scot* 119, 189–226.

Archaeological Fish Resource. http://fishbone.nottingham.ac.uk Accessed June 2020.

Ballin, T.B., 2000. Classification and description of lithic artefacts: a discussion of the basic lithic terminology. Lithics: The Journal of the Lithic Studies Society 21, 9–15.

Barrett, J. H. 2001.*FISH: The York Fish Bone Recording Protocol,* Version 1.1. Fish Lab: University of York.

Biejerinck, W, 1976, *Zadenatlas der Nederlandsche Flora: Ten Behoeve van deBotanie*, Palaeontology, Bodemcultuur en Warenkennis.Backhuys and Meesters. Amsterdam.

BoneID. http://www.boneid.net Accessed June 2020

British Geological Survey (BGS), 2020. Geology of Britain Viewer. [Retrieved online 19th February 2020] http://mapapps.bgs.ac.uk/geologyofbritain/home.html

Butler, C., 2005. Prehistoric flintwork. The History Press, Stroud.

Campbell, E and Maldonado, A 2020, 'A New Jerusalem "at the ends of the earth": interpreting Charles Thomas's excavations at Iona Abbey 1956–63', *Antiq J.*

Camphuysen, C. J and Henderson, P. A. 2017. *North Sea fish and their remains.* Royal Netherlands Institute for Sea Research and Pisces Conservation Ltd.

Carver, M, Garner-Lahire, J and and Spall, C 2016, *Portmahomack on Tarbat Ness: Changing Ideologies in North-East Scotland, Sixth to Sixteenth Century AD*, Edinburgh: Society of Antiquaries of Scotland

Chartered Institute for Archaeologists (CIfA), 2014, By-Laws, Standards and Policy Statements of the Institute for Archaeologists: Standards and guidance

Cerón-Carrasco, R. 2004. The fish remains from Glassknapper's Cave, Antler Cave and Wetweather Cave, in Pollard, T. The excavation of four caves in the Geodha Smoo near Durness, Sutherland. Scottish Archaeological Internet Report 18. pp27-28.

Cotton, J. 2002. Marygate, Lindisfarne, Northumberland, LMG98: plant macrofossil analysis. ASUD report 926. 8pp.

Cramp, R. 1977. *Corpus of Anglo-Saxon Stone Sculpture: Durham and Northumberland* Clarendon Press, Oxford

Crone, A and Hindmarch, E 2016, *Living and Dying at Auldhame. The Excavation of an Anglian Monastic Settlement and Medieval Parish Church*, Edinburgh: Society of Antiquaries of Scotland.

Curtis-Summers, Shirley; Pearson, Jessica A.; Lamb, Angela L.. 2020 From Picts to Parish: stable isotope evidence of dietary change at medieval Portmahomack, Scotland. *Journal of Archaeological Science: Reports*, 31, 102303

Daniels, R., 2007, *Anglo-Saxon Hartlepool and the foundations of English Christianity: an archaeology of the Anglo-Saxon monastery*. Tees Archaeology (Monograph Series 3)

Dobney, K. and Rielly, K. 1988. A method for recording archaeological animal bones: the use of diagnostic zones. Circaea **5**:79–96.

Donaldson, A. M. and Rackham D. J., 1985. *Biological evidence–analysis of soil samples*. 80-3. In: O'sullivan, D.M. *The excavation in Holy Island village* 1977.Archaeol. Aeliana 5th Ser. 13. 27-116.

Edlin, H. L., 1949, Woodland crafts in Britain: an account of the traditional uses of trees and timbers in the British countryside, London, Batsford.

Finlayson, R. and Hardie, C. 1995-7 (revised 2010), *Holy Island, Northumberland Extensive Urban Survey,* Northumberland County Council and English Heritage.

Gale, R., and Cutler, D. F., 2000, Plants in Archaeology – Identification Manual of Artefacts of plant origin from Europe and the Mediterranean, Westbury Scientific Publishing and Royal Botanic Gardens, Kew.

Groves, S., 2011, 'Social and biological status in the Bowl Hole early medieval burial ground, Bamburgh, Northumberland' in Petts, D. and Turner, S (eds) 2011. *Early Medieval Northumbria: Kingdoms and Communities AD450-1100,* Brepols, 241-67.

Harland, J. F., J. H. Barrett, J. Carrott, K. Dobney and D. Jaques. 2003. *The York System: An integrated zooarchaeological database for research and teaching*. Internet Archaeology 13.

Hather, J G. 2000 The identification of Northern European woods; a guide for archaeologists and conservators, London. Archetype Press.

Hayward, P. J. and Ryland, J. S. (eds) 1995. *Handbook of the Marine Fauna of North-West Europe.* Oxford: Oxford University Press.

Hill, P 1997, *Whithorn and St Ninian. The Excavation of a Monastic Town, 1984–91*, Stroud: Sutton Publishing/Whithorn Trust.

Hillson, S. 2003. *Mammal Bones and Teeth. An introductory guide to methods of identification*. London: Institute of Archaeology, University College London.

Hillson, S. 2005.Teeth. Second Edition. *Cambridge Manuals in Archaeology*. Cambridge: Cambridge University Press

Historic England, 2008, SHAPE, Strategic Framework for the Historic Environment Activities and Programmes.

Historic England, 2012, *Management of Research projects in the Historic Environment.* PPN 3: Archaeological Excavation – Annual Report May 2011-March 2012.

Historic England, 2018, The Role of the Human Osteologist in an Archaeological Fieldwork Project. Swindon. Historic England.

Humphrey, J., Young, R., 1999. Flint use in later Bronze Age and Iron Age England – Still a fiction? Lithics: Journal of the Lithic Studies Society 20, 57–61.

Huntley, J.P. 1994. *The Heugh, Lindisfarne. The carbonised plant remains.* Durham Environmental Archaeology Report 38/94.

Inizan, M.-L., Reduron-Ballinger, M., Roche, H., Tixier, J., 1999. Technology and Terminology of Knapped Stone, Préhistoire de la Pierre Tailée. Cercle de recherches et d'études préhistoriques, Nanterre.

James, H. and Yeoman, P. 2008. *Excavations at St Ethernan's Monastery, Isle of May, Fife, 1992-7* Tayside and Fife Archaeology Committee

Jacomet, S, 2006, Identification of cereal remains from archaeological sites. IPAS. Base.

Jones, G. Teaching Notes for Archaeobotany. Unpublished.

King, H 2009, 'The economy and industry of early medieval Clonmacnoise: a preliminary view' in N Edwards (ed), *The Archaeology of the Early Medieval Celtic Churches*, Leeds: Maney, 333–49.

Lane, A and Campbell, E 2000, *Dunadd: An Early Dalriadic Capital*, Oxford: Oxbow Books.

Lash, R. 2018. *Enchantments of Stone*: *Confronting other-than-human Agency in Irish Pilgrimage*. *Practices*. T*Journal of Social Archaeology* 18(3): 284–305.

Lowe, C. 2006 *Excavations at Hoddom, Dumfriesshire* Society of Antiquaries of Scotland

Lowe, C. 2008, *Inchmarnock: An early historic island monastery and its archaeological landscape* Society of Antiquaries of Scotland

Lucas, V and Paynter, S 2010, *Whitby Cliff, Whitby, North Yorkshire: an Assessment of the Metalworking Debris from the Whitby Cliff Excavations*, Engl Heritage Res Rep 31-2010.

MacGregor, A. Mainman, A. and Rogers, N. 1999. *The Archaeology of York: The Small finds AY 17/2 Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York.* Finds from Anglo-Scandinavian York

Mainman, A. and Rogers, N. 2000. *The Archaeology of York The Small Finds 17/14. Craft Industry and Everyday Life* Finds from Anglo-Scandinavian York

Maldonado, A. 2013. '*Burial in early medieval Scotland: New Questions*' Medieval Archaeology 57, 1-34

Mays, S. and Cox, M. 2000. *'Sex determination in skeletal remains'*, in M. Cox and S. Mays(eds) Human Osteology in Archaeology and Forensic Science (London): 117-130.

McCormick, F 1992, 'Early Christian metalworking on Iona: excavations under the 'infirmary' in 1990'*, Proc Soc Antiq Scot* 122, 207–14.

McDonnell J.G. 2001 "Pyrotechnology" in Brothwell, D. and Pollard A.M.P. (eds) *Handbook of Archaeological Sciences*, John Wiley & Sons, London pp. 493-506.

McKenna, R. (2017) An investigation into the palaeoenvironmental potential of samples originating from excavations at Lindisfarne: The Holy Island Archaeology Project 2016(Project Number LDF 16).

McKenna, R. (2018) An investigation into the palaeoenvironmental potential of samples originating from excavations at Lindisfarne: The Holy Island Archaeology Project 2016(Project Number LDF 17).

McKinley, J.I. 2004. 'Compiling a skeletal inventory: disarticulated and co-mingled remains', in M Brickley and J.I. McKinley (eds) Guidelines to the Standards for Recording Human Remains. IFA paper No.7. (Southampton and Reading): 14-17.

McOmish, J.M. & Petts, D. 2008. *Fey Field, Whithorn: Excavations by David Pollock and Amanda Clarke*. York: York Archaeological Trust.

Nabone Fish.https://www.nabohome.org/products/manuals/fishbone/fish/fish.html Accessed June 2020.

Noble, G Meggen Gondek, Ewan Campbell, Nicholas Evans, Derek Hamilton & Simon Taylor 2019a A Powerful Place of Pictland: Interdisciplinary Perspectives on a Power Centre of the 4th to 6th Centuries AD, *Medieval Archaeology*, 63:1, 56-94

Noble, G, Cruickshanks, G, Dunbar, L, Evans, N, Hall, D, Hamilton, D, MacIver, C, Masson-MacLean, E, O'Driscoll, J, Paskulin, L & Sveinbjarnarson, O 2019b, 'Kinneddar: A Major

Ecclesiastical Centre of the Picts', *Proceedings of the Society of Antiquaries of Scotland*, vol. 148, pp. 113-145.

Northern Archaeological Associates (NAA), 2001, The Winery & Village Hall, Holy Island: Archaeological Post-Excavation Assessment NAA report 01/4.

Osteobase. http://osteobase.mnhn.fr Accessed June 2020

O'Sullivan, D M and Young, R (1991), 'The early-medieval settlement at Green Shiel, Northumberland', *Archaeologia Aeliana* 5th series XIX, 55-69 .

O'Sullivan, D M. 1985, 'An excavation in the Holy Island village, 1977' *Archaeologia Aeliana* 5th series XIII, 27-116.

Peers, C. and CAR Radford 1943 'The Saxon monastery of Whitby', *Archaeologia*, 89 (1943), 27–88

Petts, D. 2017. 'A place more venerable than all in Britain' The Archaeology of Anglo-Saxon Lindisfarne. In *The Lindisfarne Gospels: New Perspectives*. Gameson, R. Leiden, Boston: Brill. 57: 1-18.

Petts, D. 2013. The Search for St Cuthbert's Priory.

Petts, D. and Gerrard, C., 2006, Shared Visions: The North-East Regional Research Framework for the Historic Environment, Durham County Council

Plant Atlas. http://www.plantatlas.eu/za.php.

Prins, F. and Shackleton, C. M., 1992, Charcoal analysis and the "Principle of Least Effort" - A conceptual Model. *Journal of Archaeological Science*, 19, 631-637.

Rackham, D.J & Snelling, A. 2001. *The Winery, Lindisfarne–WL00. Environmental archaeology assessment.* Unpublished report, Environmental Archaeology Consultancy

Rahtz, P. 1976. 'The buildings plan of the Anglo-Saxon monastery of Whitby Abbey' in D. Wilson (ed) *The Archaeology of Anglo-Saxon* England 459-62

Rossen, J., and Olson, J., 1985, The controlled carbonisation and archaeological analysis of SE US wood charcoals, Journal of Field Archaeology 12, 445-456

Saville, A., 1981. Grimes Graves, Norfolk. Excavations 1971–72: Volume II, Department of the Environment Archaeological Reports. Her Majesty's Stationary Office, London.

Scholtz, A., 1986, *Palynological and Palaeobotanical Studies in the Southern Cape*, MA Thesis of Stellenbosch, Stellenbosch, South Africa.

Schweingruber, F H, 1978 *Microscopic wood anatomy*. Birmensdorf. Swiss Federal Institute of Forestry Research.

Stace, C, 1997, *New flora of the British Isles*, Cambridge University Press, Cambridge.

Standing Conference of Archaeological Unit Managers, (1991 rev. 1997) *Health and Safety in Field Archaeology Manual.*

Stevens, P 2012, 'For whom the bell tolls: the monastic site at Clonfad 3, Co. Westmeath', in M Stanley, E Danaher and J Eogan (eds), *Creative Minds: Production, Manufacturing and Invention in Ancient Ireland,* Dublin Wordwell: National Roads Authority, 85–98.

Thiéry-Parisot, I., 2002, 'Gathering of firewood during the Palaeolithic' in S Thiébault (ed), Charcoal Analysis, Methodological Approaches, Palaeoecological Results and Wood Uses, BAR International Series 1063.

UKIC, 1990, Guidelines for the Preparation of Excavation Archives for long term storage.

Van der Veen, M. 1985. *The plant remains from Lindisfarne midden 1984*. In: Beavitt, P., O'Sullivan, D. & Young, R. (eds.) *Recent work on Lindisfarne*. University of Leicester Department of Archaeology Occasional Paper 1.

Walker, K., 1990, Guidelines for the preparation of excavation archives for long-term storage, Archaeology Section of the United Kingdom Institute for Conservation.

Wilkins, B. and Petts, D., 2016, Lindisfarne: The Holy Island Archaeology Project, Project Design.

Wilkins, B., Petts, D. and Dave, R. 2016, Lindisfarne, The Holy Island Archaeology Project 2016: Archaeological Assessment Report.

Wheeler, A. and Jones, A. K. G. 1989. Fishes. *Cambridge Manuals in Archaeology*. Cambridge: Cambridge University Press.

Zohary, D, & Hopf, M, 2000, *Domestication of Plants on the Old World*. Oxford University Press Ltd. Oxford.

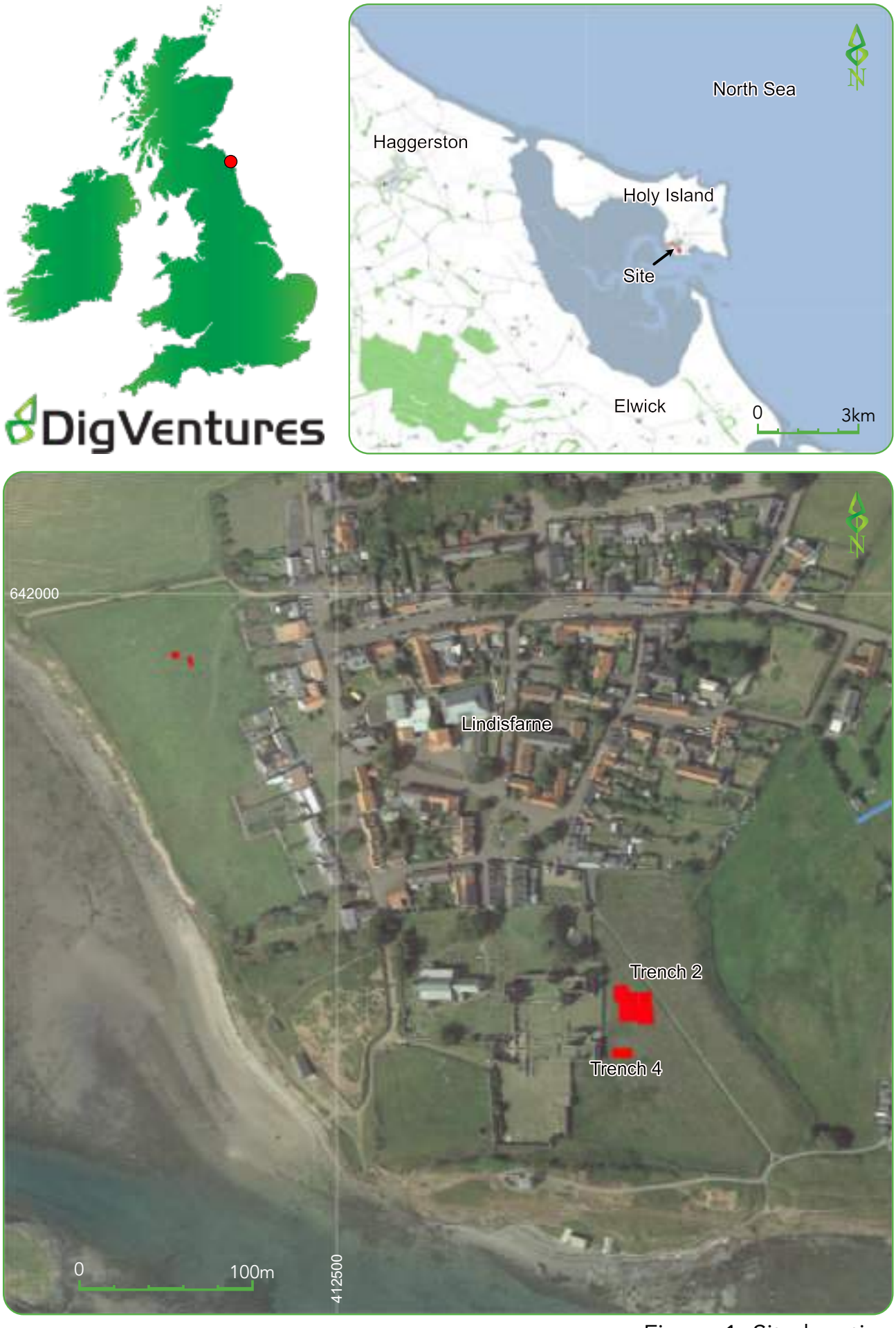


Figure 1: Site location

412660
412670
412680
641770
641760
(2072)
112
(2071)
(2070)
(2084)
F219
119
F220
(2061)
F217
F213
F210
107
106
62
F206
128
74
120
(2054)
(2056)
(2015)
F216
(2047)
(2048)
F215
(2049)
(2089)
86
88
F211
115
F218
117
(2039)
94
0
2m
N

Figure 2: Trench 2, 2018 excavation results

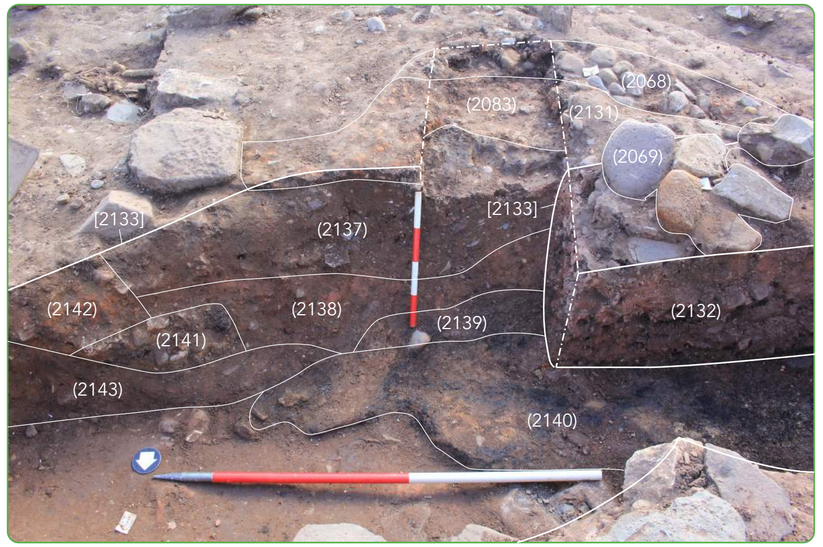
412660 412670 412680

641770

641760

0 2m

3A - Post-excavation plan of Trench 2



3B - Layer sequence truncated and exposed in southern edge of feature F217, looking south, 1m and 0.4m scales

3C - Pre-excavation photo of stone-filled pit F221, looking north, 1m and 0.4m scales

Figure 3: Trench 2, 2019 excavation results

Trench 4 location in relation to geophysical survey results

Post-excavation photo of Trench 4, looking west,1m scales

Wall F401 in relation to upstanding remains of the Priory

Figure 4: Trench 4 excavation results

Grave F215, skeleton 2062
Looking west, 1m and 0.4m scales

Grave F216, skeleton 2067
Looking west, 1m and 0.4m scales

Grave F218, skeleton 2081
Looking west, 0.4m and 0.3m scales

Unexcavated graves F222, F223, F224, F227 and F230 below furrow
Looking north, 1m and 0.4m scales

Grave F215, skeleton 2062 with stone placed below mandible

Grave F220, skeleton 2091
Looking west, 1m and 0.4m scales

Grave F232, skeleton 2129
Looking west, 1m and 0.4m scales

Grave F234, skeletons 2145 and 2146
Looking west, 1m and 0.4m scales

Figure 5: Human remains

9th century coin of Aethelred I of Wessex, SF151

Fragment of Anglo-Saxon namestone with celtic knot carving, SF153

Copper alloy rings found still on finger bone, SF144

West facing section of stone-filled pit F221

8th to 9th century glass gaming piece, SF131

8th century Anglo-Saxon styca, SF172

Fragment of Anglo-Saxon namestone with runic inscription, SF164

Area of buring (2150) next to section of large wall F211

Post-excavation photo of possible kiln/furnace area F217, looking east

Figure 6: Finds and features

Crowds gathered to learn more about the infirmary cloister

Class of 2019 next to the newly discovered furnace

Another glorious day excavating graves in Trench 2

Line troweling 101

Say no more

The Ungemach Army!

DigCamp lend a hand (or eight) processing environmental samples

Art measures up for some recording on the last day

Johanna with key

Figure 7: Team in action

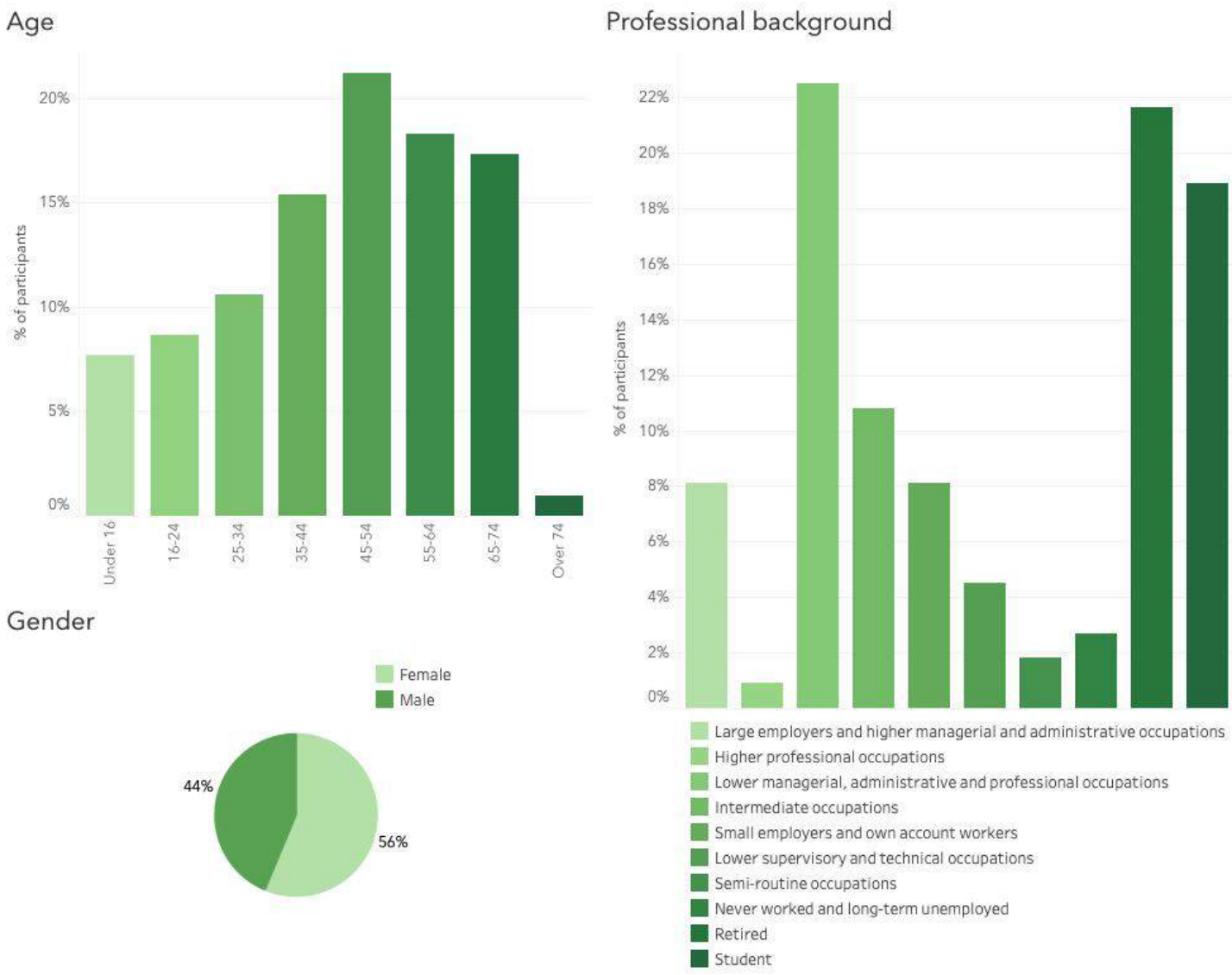


Figure 8: Age, gender and socio-economic background of participants

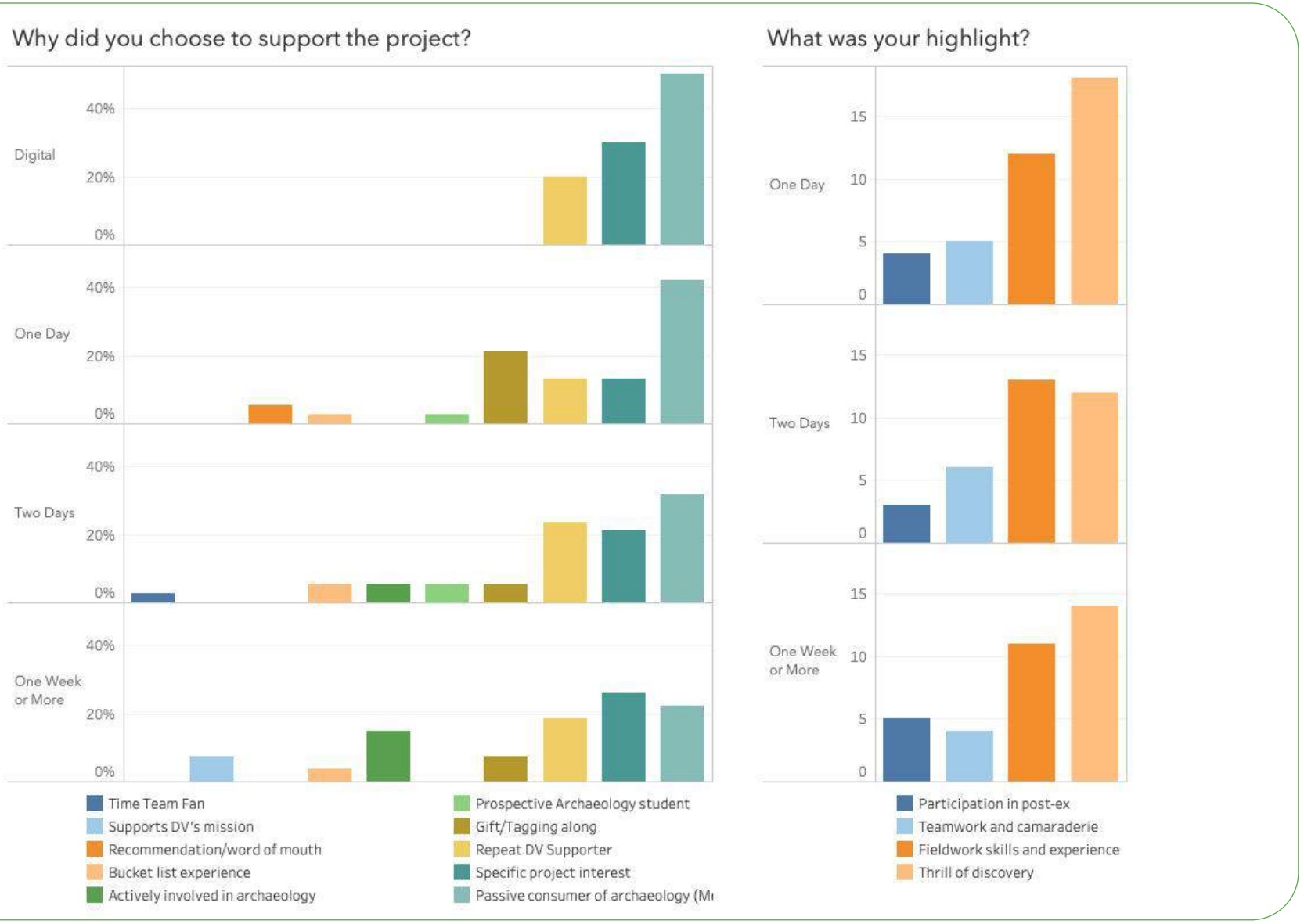


Figure 9: Motivations and highlights of participants

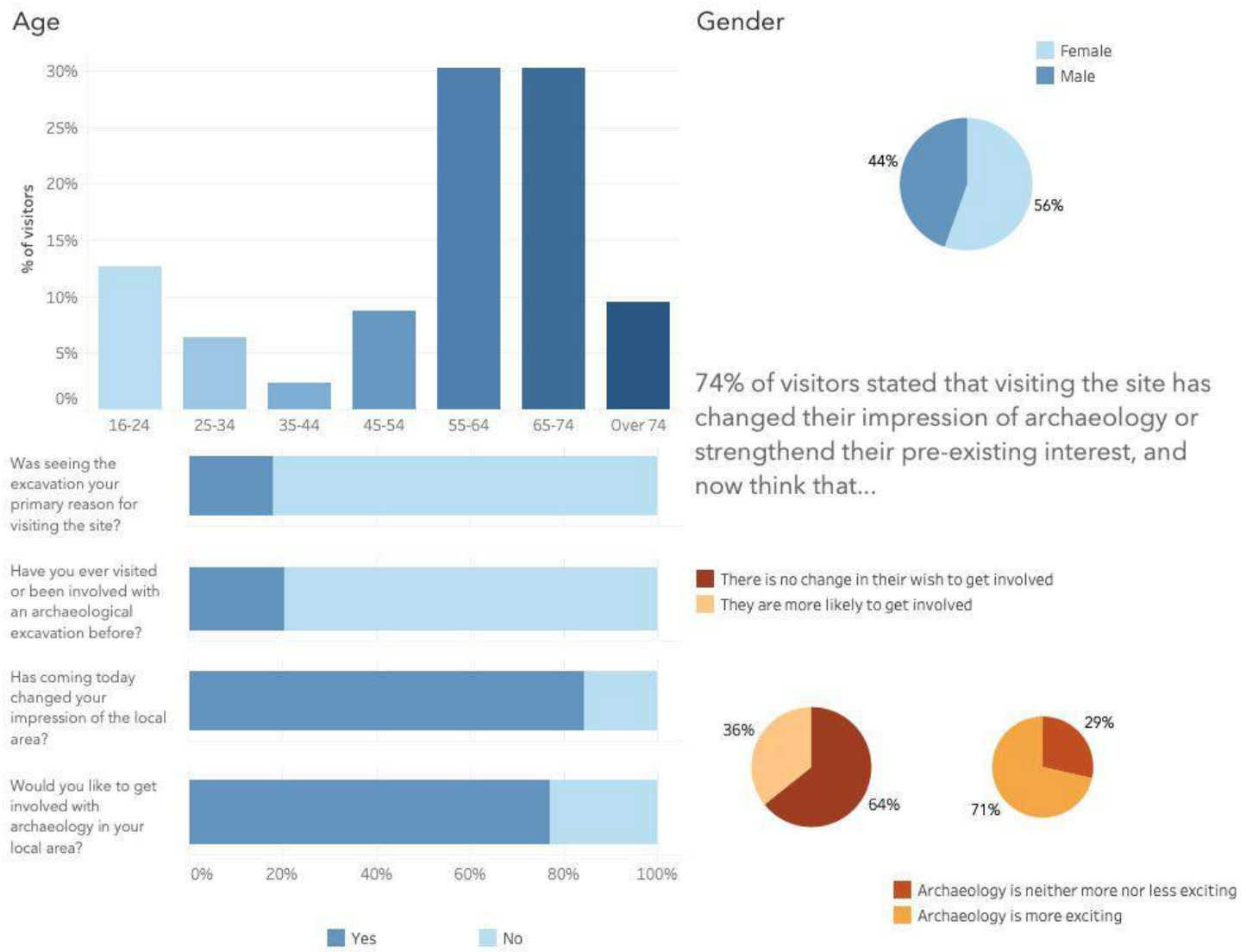


Figure 10: Changing perceptions of archaeology through participation

Appendix A: Trench and context descriptions

Trench 2	**Dimensions:** 17m x 15m			
	Orientation: N-S			
	Reason for Trench: One of two additional evaluation trenches (17m x 15m) positioned in Sanctuary Close due east of the Priory church to investigate possible structural remains predating the current monastic complex			
Context	**Description**	**Interpretation**	**Dimensions (m)**	**Feature**
2001	Dark brown soft silty-clay with occasional small rounded pebbles.	Deposit – topsoil/ backfill from previous seasons	Length – 17.00m Width – 15.00m Depth – 0.15m, ranges from 0 – 0.15m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2001			
2002	Mid brown orange firm sandy silt with Moderate charcoal fragments, moderate cobbles and small angular pebbles.	Deposit – subsoil	Length – 17.00m Width – 15.0m Depth – 0.15m to 0.27m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2002			
2003	Orange-brown, soft silty sand with small sub-angular stones and larger cobbles	Deposit – Subsoil cleaning level	Length – 10.00m Width – 4:00m Depth – 0.03m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2003			
2004	Dark brown firm sandy silt with medium angular to sub-rounded stones and pebbles.	Deposit – demolition and cemetery clearance rubble	Length – 2.25m Width – 1.50m Depth – 0.20m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2004			
2005	Dark brown firm sandy silt with medium angular to sub-rounded stones and pebbles.	Deposit – demolition and cemetery clearance rubble. Probably same as (2004)	Length – 1.10m Width – 1.03m Depth – 0.20m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2005			
2006	Light grey- brown hard sandy silt, sandstone cobbles and pebbles.	Layer – Rubble deposit. Probably same as (2004)	Length – 2.20m Width – 2.80m Depth – 0.50m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2006			

2007	Light grey-brown loose sandy silt with 10% sub-angular pebbles.	Deposit – Rubble deposit. Probably same as (2004)	Length – 1.14m Width – 0.50m Depth – 0.10m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2007			
2008	Mid greyish brown hard sandy silt with medium to large sub-angular to rounded cobbles and pebbles.	Deposit – Rubble deposit. Probably same as (2004)	Length – 3.30m Width – 4.00m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2008			
2009	Light greyish brown sandy silt with angular to sub-angular pebbles and gravel.	Deposit – Possible levelling layer	Length – 4.00m Width – 3.50m Depth – 0.10m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2009			
2010	Mid grey brown hard sandy clay with large angular and sub-angular sandstone cobbles and stones.	Layer – Possible clay and stone capping of a burial mound	Length – 1.65m Width – 0.35m Depth – 0.20m	F212
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2010			
2011	Mid grey-brown loose sandy silt with inclusions of 10% sub-angular rounded gravel.	Deposit – levelling layer	Length – 0.50m Width – 0.54m Depth – 0.20m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2011			
2012	Light orange brown sandy clay with 30% inclusions of flecks charcoal, small sandstone pieces.	Deposit – levelling layer	Length – 1.00m Width – 0.40m Depth – 0.30m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2012			

2013	Sandstone block and cobbles roughly hewn with random coursing and no bonding.	Masonry – Relating to possible cist lined burial	Length – 1.00m Width – 0.25m Depth – 0.20m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2013			
2014	Mid-orange brown compact silty clay with 40% inclusions of sub-angular to rounded gravel and sandstone pebbles.	Deposit – Levelling layer	Length -1.20m Width -0.80m Depth- Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2014			
2015	Mid-orange brown compact sandy clay 50% sub-angular inclusions sandstone pieces, charcoal flecks and gravel.	Deposit – clay surface	Length - 4.00m Width - 2.80m Depth - Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2015			
2016	Oval shape oriented N-S with a gradual break of slope at the top, concave sides, a gradual almost non perceptible break of slope at the bottom, and an ever so slightly curved base.	Cut-charnel pit	Length – 1.40m Width – 0.80m Depth – 0.20m	F203
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2016			

2017	Dark brown soil fill surrounding human remains with frequent (25%) bone and sub-angular pebbles.	Fill-soil surrounding human remains in charnel pit	Length – 1.40m Width – 0.80m Depth – 0.20m	F203
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2017			
2018	A mixture of human remains found within a charnel pit.	Fill-Skeletal remains within charnel pit	Length – 1.40m Width – 0.80m Depth – 0.20m	F203
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2018			
2019	Firm light yellowish brown clayey silt with Moderately sorted stone inclusions (15%).	Deposit-Stonier subsoil localised in north part of western part of trench	Length – 9.00m Width – 6.00m Depth – 0.20m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2019			
2020	Compact greyish brown silt with sub angular rubble(20%) and human bone (<1%) inclusions.	Deposit-Plough furrow	Length – 9.00m Width – 4.40m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2020			
2021	Dark brown sandy silt with sub angular rubble (<10%) inclusions and large quantities of animal remains of varying species.	Layer-Collection of animal, and human bone in north-eastern part of the west side of trench	Length – 3.20m Width – 2.00m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2021			
2022	Very compact dark yellowish brown clayey sand containing sub angular and sub-rounded rubble inclusions (70%)	Layer- A rubble layer in the south part of the eastern side of trench 2	Length – 6.00m Width – 3.00m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2022			

2023	Uneven rectilinear cut oriented SW-NE with a gradual break of slope at the top, shallow sides and a non-perceptible break of slope at the bottom.	Cut-grave in eastern section of trench 2	Length – 1.88m Width – 0.43 Depth – 0.20m	F204
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2023			
2024	Supine individual facing upwards with upper arms parallel to body, and lower arms crossed over pelvis. The ankles were placed side by side.	Skeleton-Articulated human remains in eastern section of trench 2	Length – 1.88m Width – 0.43 Depth – 0.20m	F204
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2024			
2025	Hard brown silty sand with sub angular stone inclusions (10%).	Fill- Backfill of grave cut 2023	Length – 1.88m Width – 0.43m Depth – 0.20m	F204
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2025			
2026	Oval cut oriented E-W with an almost non perceptible break of slope at the top, concave sides and a gradual break of slope at the bottom.	Cut- Possibly a partially excavated grave	Length – 1.60m Width – 1.00m Depth – Unknown not fully excavated	F212
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2026			

2027	Firm orange brown sandy silt with sub angular stone inclusions (80%). The top of the layer is filled with disarticulated bone there may be a further undisturbed burial below.	Fill- soil from short linear feature	Length – 1.60m Width – 1.00m Depth – Unknown not fully excavated	F212
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2027			
2028	Rectilinear cut oriented E-W with a sharp break of slope at the top and concave sides.	Cut-grave in the middle of the eastern side of the trench	Length – 1.72m Width – 0.45m Depth – 0.20m	F205
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2028			
2029	Orangey brown sandy silt with Poorly sorted sub angular stones (10%,). At least 7 Quartz pebbles recovered from around the skull and chest cavity. 4 pebbles found around and under the skull when removing it. 2 pebbles found either side of the spine at the waist.	Fill- Backfill of grave cut 2028	Length – 1.72m Width – 0.45m Depth – 0.20m	F205
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2029			

2030	Supine individual facing upwards with upper arms parallel to body, and lower arms crossed over pelvis. The ankles were placed side by side with the right foot placed on top of the left.	Skeleton-Articulated human remains in the middle of the eastern side of the trench	Length – 1.72m Width – 0.45m Depth – 0.20m	F205
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2030			
2031	Compact yellowish brown silty clay with small sub angular stone (20%) inclusions and human bone.	Deposit-Disturbed deposit of human remains	Length – Unknown not fully excavated Width – Unknown not fully excavated Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2031			
2032	Linear cut running N-S.	Cut-for a potential wall in the north west of the trench	Length – 2.21m Width – 0.38m Depth – Unknown not fully excavated	F213
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2032			
2033	Stones placed in a row From north to south: 1.) length 0.33m, width 0.34m 2.) length 0.15m, width 0.24m 3.) length 0.31m, width 0.35m 4.) length 0.46m, width 0.33m 5.) length 0.15m, width 0.16m 6.) length 0.2m, width 0.16m	Masonry-Linear row of tooled stone running N-S	Length – 2.11m Width – 0.57m Depth – Unknown not fully excavated	F213
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2033			

2034	Friable white brown plaster made of large sub-angular rubble.	Layer-plaster in north-west of trench 2	Length – 1.58m Width – 1.52m Depth – 0.22m	F206
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2034			
2035	Compact reddish brown silty clay with no inclusions.	Fill-red clay fill of linear feature in north-west corner of trench	Length – 2.20m Width – 0.40m Depth – 0.10m	F210
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2035			
2036	Compact dark greyish brown soil and frequent well sorted sub-rounded stone inclusions (80%).	Fill-Raised cobbled surface in NW of trench 2	Length – 1.25m Width – 0.80m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2036			
2037	Rectilinear cut with a gradual break of slope at the top and gradual sides.	Cut-Posthole at western edge of west side of trench	Length – 0.10m Width – 0.10m Depth – 0.05m	F209
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2037			
2038	Soft grey silty clay with no inclusions.	Fill-Fill of posthole 2037	Length – 0.10m Width – 0.10m Depth – 0.05m	F209
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2038			
2039	Firm orange brown sandy silt with sub-angular stone inclusions (10%)	Layer- Rubble spread at south end of Western part of trench below (2002)	Length – 9.00m Width – 4.00m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2039			
2040	Cut orientated E-W with a gradual break of slope at the top and concave sides and gradual break of slope at its bottom.	Cut-Cut of pit in northwest trench	Length – Unknown not fully excavated Width – Unknown not fully excavated Depth – 0.22m	F206
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2040			

2041	Large mud stone faces that appear to line up with 2042.	Masonry-Large stone wall/platform aligned roughly north to south in south part of east side of trench	Length – 2.50m Width – 1.12m Depth – Unknown not fully excavated	F211
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2041			
2042	Large mud stone faces that appear to line up with 2041.	Masonry-2 large stones north of projected line of (2041)	Length – 1.00m Width – 0.40m Depth – Unknown not fully excavated	F211
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2042			
2043	Oval shape orientated N-S.	Cut-Possible post hole in north of eastern side of trench	Length – 0.60m Width – 0.50m Depth – Unknown not fully excavated	F207
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2043			
2044	Stone packing that might indicate the presence of a post hole, unexcavated	Fill-Packing of post hole in north of eastern side of trench	Length – 0.60m Width – 0.45m Depth – Unknown not fully excavated	F207
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2044			
2045	Dark brown sandy silt unexcavated.	Fill-soil found within the cut of a potential post hole	Length – 0.65m Width – 0.45m Depth – Unknown not fully excavated	F207
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2045			
2046	A row of stone and soil that were left unexcavated, running NE-SW. Their might be a stone lining between these stones.	Fill- Parallel stone lined fill in northeast corner of east side of trench	Length – 0.90m Width – 0.70m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2046			

2047	A row of irregular stone running E-W that return on their western edge slightly. This may represent the capping of a burial but was left unexcavated.	Fill- L-shaped stone lined fill in northeast corner of east side of trench	Length – 1.86m Width – 0.87m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2047			
2048	Left unexcavated.	Fill-parallel stones forming a small gulley placed south of context 2047.	Length – 0.60m Width – 0.20m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2048			
2049	Three aligned stones running E-W with a further cluster stones on its E end.	Fill- East to west aligned stone kerbing in southeast corner of west side of trench	Length – 1.30m Width – 0.10m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2049			
2050	Linear cut orientated E-W with a sharp break of slope at the top and concave sides and gradual break of slope at its bottom.	Cut- East to west aligned ditch in southeast corner of west side of trench, possible robber trench	Length – Unknown not fully excavated Width – 1.10m Depth – 0.16m	F208
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2050			
2051	Soft mid orange brown sandy silt with frequent small sub-angular and moderate large angular stones.	Fill- Fill of east to west aligned ditch in southeast corner of west side of trench	Length – Unknown not fully excavated Width – 1.10m Depth – 0.16m	F208
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2051			

2052	A roughly circular stone layer found in the SE of Trench 2 west, left unexcavated.	Fill- Stone layer south side of context 2050	Length – 1.60m Width – 1.00m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2052			
2053	A patch of disturbed rubble this may be a continuation of context 2049.	Fill- Stone layer west of context 2049	Length – 1.20m Width – 1.20m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2053			
2054	A row of stones running E-W during 2017 these were thought to cover burials. Left unexcavated.	Fill- Row of stones in east side of west half of trench	Length – 1.10m Width – 0.25m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2054			
2055	A linear cut aligned NW-SE with a gradual break of slope at its top, shallow sides and a gradual break of slope at its bottom. It has an uneven base.	Cut- Northwest to southeast aligned small ditch cut by [2040]	Length – 2.15m Width – 0.10m Depth – 0.10m	F210
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2055			
2056	Compact greyish brown silt with sub angular rubble (20%) and human bone (<1%) inclusions.	Deposit - Plough furrow (same as 2020)	Length – 9.00m Width – 4.40m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2056			

2057	Soft, medium orangey brown, sandy clay, with charcoal inclusions and mixed stone types ranging in size from 1cm - 15cm sub angular to sub rounded poorly sorted inclusions	Deposit - Subsoil	Length-7.70m Width-7.75m Depth-0.05m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2057			
2058	Void	Void		
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2058			
2059	Void	Void (same as 2039)		
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2059			
2060	Void	Void		
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2060			
2061	Mid greyish brown, silty clay, with poorly sorted mixed stone sub-angular to sub-rounded stones (10%)	Deposit - below 2057, though to be above possible oven, geochemical samples were taken from this context	Length-7.70m Width-7.76m Depth-0.13m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2061			
2062	Aligned east to west. Lying in supine position with hands crossed over the pelvis, feet pointed.	Skeleton- Articulated human remains in the middle of the eastern side of the trench		215
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2062			
2063	Light orangey bron, sandy clay, with poorly sorted sub-angular stones (10%)	Fill - of burial SK2062	Length- 1.76m Width- 0.69m Depth- 0.21m	215
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2063			

2064	Light orangey bron, silty clay, with poorly sorted sub-angular stones (40%)	Deposit - rubble layer, equal to (2064) on exterior of builing	Length-2.0m Width-0.50m Depth- 0.07m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2064			
2065	Light greyish brown, silty clay, with poorly sorted pink sandstone inclusions ranging from 3-14cm (40%)	Deposit - rubble layer, equal to (2064) on interior of builing	Length-0.68m Width-2.72m Depth- 0.07m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2065			
2066	East - west aligned grave cut, with edge only clearly visable next to right tiba	Cut- grave cut for SK2062	Length- 1.76m Width- 0.69m Depth- 0.21m	215
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2066			
2067	Head and torso turned on to its side, pelvis half turned, leg straight. Looks like it would have been originally laid supine	Skeleton - Articulated human remains at the North of the eastern side of the trench		216
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2067			
2068	Yellow, blue and white, poorly sorted sub rounded burnt stones (4-11 cm) supported by a silty clay	Deposit - possibly a lining to an oven, part of a larger kiln	Length - 1.68 m Width - 0.46 m Depth - unexcavated	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2068			
2069	Large sub angular to sub rounded stones poorly sorted 8-24cm, supported by a silty clay	Deposit - rubble infliing kiln structure	Length - 9.68 Width - 0.59 Depth - 0.18	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2069			

2070	Compact, mid pinkish brown, silty clay with small sub angular poorly sorted inclusions (15%)	Deposit - mixed stony layer in NW extension	Length - 2.60 Width - 4.16 Depth - 0.05	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2070			
2071	Soft, mid brown, sandy clay, with small sub angular poorly sorted stones (10%)	Deposit - mixed stony layer in NW extension	Length - 2.26 Width - 3.03 Depth - 0.05	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2071			
2072	Compact, mid orangey brown, sandy clay, with burnt clay (15%) and poorly sorted small sub angular stones 4-9cm (20%)	Deposit - mixed stony layer in NW extension	Length - 2.05 Width- 0.85 Depth - 0.05	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2072			
2073	Supline, body under bulk, pelivis down has been excvated	Skeleton - Articulated human remains in southwest corner of trench 2 east.		218
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2073			
2074	Mid ornagey brown, sandy clay, with poorly sorted white and pink subangular sandstone 3-7cm (10%)	Fill - of burial SK2073	Length - 1.00m Width- 0.38 Depth - 0.15	218
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2074			
2075	Not fully excvabted and difficult to see	Cut- presumed grave cut for SK2073	Length - 1.00m Width- 0.38 Depth - 0.15	218
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2075			
2076	Elongated E-W aligned grave cut	Cut - grave cut for SK2067	Length - 1.83 Width- 0.48 Depth - 0.15	216
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2076			
2077	Mid orange brown, silty clay	Fill - of burial SK2067	Length - 1.83 Width- 0.48 Depth - 0.15	216

Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2077			
2078	Mid ornagey brown, silty clay, with poorly sorted sub-angular stones (10%)	Fill - of burial SK2079	Length - 1.95 Width- 0.50 Depth - 0.35	219
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2078			
2079	Supine with arms crossed over pelvis	Skeleton - Articulated human remains in NW of trench 2 W.		219
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2079			
2080	Void	Void		
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2080			
2081	Legs of E-W skeleton in supine position	Skeleton - articulated legs of human remains	Length - 0.90m Width - 0.35m Depth - 0.10m	218
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2081			
2082	E end of elongated grave cut pit	Grave - E-W cut	Length - 0.90m Width - 0.35m Depth - 0.10m	218
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2082			
2083	Redeposited burnt clay	Deposit - on S side of F217	Length - 1.00m Width - 0.60m Depth - not fully excavated	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2083			
2084	Line of large stones oriented E-W	Masonry - E-W wall	Length - 3.5m Width - 0.50m Depth - not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2084			
2085	Mid orange brown silty clay	Fill - of grave SK2081	Length - 1.00m Width- 0.38 Thickness - 0.15	218
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2085			
2086	Light yellow compact sand	Deposit - sand bedding layer	Length- 2.00m Width - 1.00m Thickness - 0.05m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2086			
2087	Duplicate of (2140)	Duplicate of (2140)		
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2087			

2088	Large stone sub angular stones supported by a sandy silt matrix	Deposit - rubble infilling pit	Length- 1.26m Width - 0.70m Thickness - 0.49m	221
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2088			
2089	Dark brown silty clay with charcoal inclusions	Deposit - charcoal spread	Length- 2.00m Width - 2.00m Thickness - 0.10m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2089			
2090	E-W aligned grave cut with near-vertical sides and flat base	Cut - grave cut for SK2091	Length - 1.75m Width - 0.50m Depth - 0.10m	220
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2090			
2091	Lying in supine position oriented E-W	Skeleton - Articulated human remains in NW corner	Length - 2.00m Width - 2.00m Thickness - 0.10m	220
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2091			
2092	Mid brown sandy clay	Fill - of grave SK2091	Length - 2.00m Width - 2.00m Thickness - 0.10m	220
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2092			
2093	Void	Void		
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2093			
2094	Void	Void		
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2094			
2095	Supine, only chest up could be excavated, some ploughing damage	Skeleton - Articulated human remains in S of slot against the bulk in trench 2 W. Lower chest and below are under baulk		222
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2095			

2096	Lying on its side, with right left extended with the left leg lying on top bent with the knees crossed, the feet where flexed, right hand placed next to upper femur, rest of the body was not excavated	Skeleton - Articulated human remains in N of SK2095 in slot against the baulk in trench 2 W. Upper femur up was not excavated		223
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2096			
2097	Duplicate of 2095	Duplicate of 2095		
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2097			
2098	Lying on its right side oriented E-W.	Skeleton - Articulated juvenile human remains in slot against the baulk in trench 2 W. Lower legs and feet under baulk.		224
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2098			
2099	Void	Void		
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2099			
2100	Stone-filled pit in NE corner of W side of trench	Cut - of pit	Length - 1.30m Width - 0.70m Depth - 0.60m	221
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2100			
2101	E-W cut for burial, heavily disturbed by ploughing so the shape in plan is difficult to see, not excavated	Cut - of burial SK2102	Length - 1.10m Width - 0.38m Thickness - Not fully excavated	225
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2101			
2102	Duplicate of 2105	Duplicate of 2105		
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2102			

2103	Loose, mid greyish brown, clayey silt, with occasional rounded quartz pebbles and poorly sorted stones	Fill - of burial SK2105	Length - 1.10m Width - 0.38m Thickness - Not fully excavated	225
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2103			
2104	The position of the body is unclear as the grave is badly disturbed due to post deposition ploughing and possible recutting of other graves - assumed supine	Skeleton - Partially articulated human remains in trench 2 E.		226
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2104			
2105	Badly disturbed burial, appears to be lying supine.	Skeleton - Partially articulated human remains in trench 2 E.		225
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2105			
2106	Lying in its right hand side, with body extended, from mid femur down under baulk	Skeleton - Articulated human remains in N of slot against the baulk in trench 2 W. Lower femur down under baulk.		227
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2106			
2107	Lower half of body appears to be supine, however the torso appears to have been twisted and is partially lying on right side facing south, possibly to make the inhumation fit into the grave which appears to be stone lined	Skeleton - Articulated human remains in stone lined burial. At S end of trench 2 E.		228

Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2107			
2108	Compact orange clay	Fill - of pit	Length - 0.85m Width - 0.40m Thickness - 0.35m	221
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2108			
2109	Drak brown sandy silt with frequent shells in S part of pit	Fill - shell midden within pit	Length - 0.60m Width - 0.50m Thickness - 0.35m	221
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2109			
2110	Compact, mid orangey brown, sandy clay, with frequent small to medium sub-angular stones	Deposit - rubble layer	Length - 8.00m Width - 4.00m Thickness - 0.20m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2110			
2111	Mid to dark brown sandy clay with frequent angular stone inclusions	Deposit - rubble layer	Length - 8.12m Width - 4.30m Thickness - 0.20m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2111			
2112	Extended supine burial facing east, with some disturbance	Skeleton - Articulated human remains. E of SK2107 (F228).		229
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2112			
2113	Oblong cut, sharp 90 degree corners at head of grave with stone lining. Base of cut unknown as burial was not lifted	Cut - of burial SK2107	Length - 1.4m (to LOE) Width - 0.42m Depth - not fully excavated	228
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2113			
2114	Two large stones, one oriented N-S the other E-W that line the grave [2113]	Masonry - grave lining	Height: 0.23m (to LOE) Width: 0.06m at widest point	228
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2114			
2115	Moderately loose, mid greyish brown, clayey silt with occasional quartz pebbles	Fill - of burial SK2107	Length - 1.4m (to LOE) Width - 0.42m Depth - not fully excavated	228
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2115			

2116	Cut close to body, the E most extent of the cut is under baulk. Rounded round the head	Cut - of burial SK2098	Length - 0.81m LOE Width - 0.26m Depth - not excavated	224
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2116			
2117	Soft, mid greyish brown, sandy silt, with rare charcoal flecks and small stones	Fill - of burial SK2098	Length - 0.81m LOE Width - 0.26m Depth - not excavated	224
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2117			
2118	Linear, W end of cut is under baulk, rounded corners almost circular at E end of cut	Cut - of burial SK2096	Length- 0.84 LOE Width - 0.41 Depth - not excavated.	223
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2118			
2119	Soft, mid greyish brown, sandy silt, with frequent charcoal inclusions and occasional small sand stone pebbles	Fill - of burial SK2096	Length- 0.84 LOE Width - 0.41 Depth - not excavated.	223
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2119			
2120	Linear cut, cut close to body, rounded around the head, E end under baulk	Cut - of burial SK2095	Length - 0.42m LOE Width- 0.44m Depth- not excavated	222
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2120			
2121	Soft, mid greyish brown, sandy silt, with rare small stone pebbles	Fill - of burial SK2095	Length - 0.42m LOE Width- 0.44m Depth- not excavated	222
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2121			
2122	Most of the body is under baulk, can be seen from shoulders up. Looks as though they were lying in their right side	Skeleton - Articulated human remains S of SK2106. Body under baulk.		230
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2122			

2123	Not full extent seen, as most of the burial is under baulk. Cut close to body, rounded around the head.	Cut - of burial SK2122	Length- 0.35m LOE Width - 0.33m Depth- not excavated	230
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2123			
2124	Soft, mid greyish brown, sandy silt, with occasional flecks of charcoal and rare small stone pebble inclusions	Fill - of burial SK2122	Length- 0.35m LOE Width - 0.33m Depth- not excavated	230
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2124			
2125	Curvy-linear, Close to body, can't be seen under baulk	Cut - of burial SK2106	Length - 1.04m LOE Width - 0.36m Depth - not excavated	227
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2125			
2126	Soft, mid orangey brown, sandy silt, with rare small stone incursions	Fill - of burial SK2106	Length - 1.04m LOE Width - 0.36m Depth - not excavated	227
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2126			
2127	Sub circular cut	Cut - of sub circular feature, not excavated, appears to be truncated by SK2106	Length- 0.45m (truncated) Width - 0.35m Depth - not excavated	231
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2127			
2128	Soft, dark orangey brown, sandy silt, occasional small stone pebbles	Fill - of sub-circular cut [2127]	Length- 0.45m (truncated) Width - 0.35m Depth - not excavated	231
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2128			
2129	Extended supine facing east, with arms placed across body with hands resting over pelvis. Pointing east toes slightly scrunched possibly due to rigor mortis at time of burial.	Skeleton - Articulated human remains at NE end of trench 2 E.		232

Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2129			
2130	Assumed East facing extended supine burial, only feet and lower legs excavated	Skeleton - Articulated human remains which appear to go under the building at NW of trench.		233
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2130			
2131	Lens of pale yellow ash	Deposit - lens of ash	Length - 0.40m Width - 0.30m Thickness - not fully excavated	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2131			
2132	Very loose, degraded pink sandstone with lenses of silt with occasional rubble stones becoming more frequent towards base	Deposit - rubble infilling robber cut	Length - 9.50m Width - 6.30m Thickness - 0.30m	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2132			
2133	Circular shape in plan, sharp breaks of slope with near vertical side and a flat base	Cut - possible robber cut	Length - 9.50m Width - 6.30m Depth - 0.30m	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2133			
2134	Compact pinkish red clay in NW extension	Deposit - clay spread SW of F217	Length - 5.50m Width - 3.00m Thickness - not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2134			
2135	Soft, mid greyish brown, clayey silt, with common large charcoal and burnt stone inclusions and occasional burnt clay	Deposit - full extent not excavated, under burnt lime and stone, probable related to kiln structure F217	Length - not fully excavated Width - not fully excavated Thickness - 0.30m	206
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2135			

2136	Moderately loose, mid pinkish/reddish brown, silty sand, with occasional flecks of charcoal and frequent stones ranging from small pebbles to larger cobbles.	Fill - of burial SK2130	Length - not excavated Width - not excavated Thickness - not excavated	233
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2136			
2137	Soft, mid greyish brown, clayey silt, with occasional sandstone pebbles and rare shell inclusions	Deposit - full extent not excavated, related to kiln structure F217	Length - 2.65 Width - not fully excavated Thickness- 0.30	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2137			
2138	Firm, mid reddish pink, silty clay, with rare sub angular sandstone pebbles	Deposit - full extent not excavated, related to kiln structure F217	Length- 2.70m Width- not full excavated Thickness - 0.12m	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2138			
2139	Ver soft, light yellowish white, lime powder	Deposit - full extent not excavated, related to kiln structure F217	Length- 0.23m Width - not fully excavated Thickness- 0.10m	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2139			
2140	compacted dark bluish black burnt silt and charcoal	Deposit - full extent not excavated, related to kiln structure F217	Length- 2.43m Width - not fully excavated Thickness- 0.05m	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2140			
2141	Burnt stone and lime supported by sandy silt	Deposit - full extent not excavated, related to kiln structure F217	Length- 0.40m Width - not fully excavated Thickness- 0.22m	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2141			
2142	Mid orangey red and light yellowish white burnt clay	Deposit - full extent not excavated, related to kiln structure F217	Length - 0.38m Width - not fully excavated Thickness- 0.16m	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2142			

2143	Moderately firm, mid greyish brown, clayey silt with Occasional small sand stone pebbles and charcoal flecks	Deposit - full extent not excavated, related to kiln structure F217	Length- 1.10m Width - not fully excavated Thickness- 0.13m	217
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2143			
2144	Oblong cut, with gradual breaks of slope	Cut - of burial SK2145	Length -2.09m Width - 0.48m Depth - 0.07m	234
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2144			
2145	Extended laying on right side orientation E-W	Skeleton - Articulated human remains. At S end of trench 2 E. S of burial F228.		234
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2145			
2146	Infant burial, extended lying on back in supine position orientated east west	Skeleton - Articulated infant remains. Found in same burial as SK2145.		234
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2146			
2147	Moderately loose, mid greyish brown, clayey silt, with rare small rounded pebbles	Fill - of burial SK2145 & SK2146	Length -2.09m Width - 0.48m Thickness - 0.07m	234
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2147			
2148	Oblong oval cut, with gradual breaks of slope, and a irregular base	Cut - of burial SK2129	Length 1.79m Width 0.86m Depth 0.15m	232
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2148			
2149	Loose, mid greyish brown, clayey silt, with poorly sorted rare rounded pebbles	Fill - of burial SK2129	Length: 1.88m Width: 0.7m Thickness: 0.11m	232
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2149			
2150	Soft black charcoal	Deposit - circular charcoal spread	Length - 1.00m Width - 0.80m Thickness - Not excavated	

Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2150			
2151	Roughly E-W line of five large flat stones	Masonry - grave capstones	Length - 1.85m Width - 0.60m Thickness - Not excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2151			
2152	E-W line of flat stones lying on side	Masonry - stone grave lining	Length - 1.72m Width - 0.15m Thickness - Not excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2152			
2153	Shape in plan is unclear due to post-depositional disturbance from other graves, not excavated	Cut - of burial SK2112	Length - not excavated Width - not excavated Thickness - not excavated	229
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2153			
2154	Mid reddish brown, clayey silt, with occasional quartz pebbles and moderately sorted rounded and sub angular stones	Fill - of burial SK2112	Length - not excavated Width - not excavated Thickness - not excavated	229
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2154			
2155	E-W line of roughly hewn rectangular blocks at S end of E side of trench	Masonry - E-W wall	Length - 1.80m Width - 0.30m Thickness - Not excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2155			
2156	Soft, light yellowish white, silty sand, with frequent sandstone cobbles	Deposit - layer under (2015)	Length - 11.00m Width - 7.00m Thickness - Not excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_2156			

Table 1: Trench 2 context descriptions

Trench 4	**Dimensions:** 2m x 1m			
	Orientation: East-West			
	Reason for Trench: to confirm the interior wall of the infirmary identified within the geophysical survey and to identify its depth below the exiting ground surface			
Context	**Description**	**Interpretation**	**Dimensions (m)**	**Feature**
4001	Loose mid orange brown silt.	Deposit - Topsoil	Length – 2.00m Width – 1.00m Depth – 0.10m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_4001			
4002	Medium dark brown sandy silt.	Deposit - Subsoil	Length – 2.00m Width – 1.00m Depth – 0.25m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_4002			
4003	Firm mid orange brown silty clay with charcoal flecks, lime, rubble and bones inclusions (<5%).	Layer - Sediment on eastern side of wall	Length –1.00m Width –0.55m Depth – 0.36m	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_4003			
4004	Firm mid reddish brown silty clay with stone rubble inclusions possible spill from 4005.	Layer - Layer west of wall	Length –1.00m Width –0.54m Depth – Unknown not fully excavated	
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_4004			
4005	Unworked (or minimal finishing) stone orientated E-W with no bonding material.	Masonry – Stone wall of presumed infirmary	Size of material 0.35m by 0.18m	F401
Link	https://digventures.com/lindisfarne/ddt/cxt/LDF_4005			

Table 2: Trench 4 context descriptions

Appendix B: Human remains catalogue

Sk No	Feature	Cut	Fill	Condition			Broad Age Group	Potential for:			Parts Present:									Pathology	Notes
				F	SP	%		Age	Sex	Stature	Skull	Dentition	Torso	Arms	Hands	Pelvis	Legs	Feet	Joints		
2024	F204	2023	2025	mod	2-3	75+	A	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Some cleaning of dentition required; dental disease
2030	F205	2028	2029	sli	0-1	75+	A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Dental disease
2062	F215	2066	2063	sli	0-2	75+	Ad/A	Y	Y?	Y?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Sex & stature may be possible if adult; L tibia - fracture/infection, radiograph required; metabolic disease; dental disease
2067	F216	2076	2077	min/ sli	0-2	75+	A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Common developmental spinal anomaly; dental disease
2079	F219	2082	2078	min	0-2	75+	A	Y	Y	Y	-*	-*	Y	Y	Y	Y	Y	Y	Y	Y	Common developmental spinal anomaly
2081	F220	2080	2085	min	0-1	<25	A	N	N	N	-	-	-	-	-	-	Y	Y	Y	N	Long bones intact, but stature not possible without sex estimation

2091	F214/ F220	2090	2092	sli/ mod	1-2	<25	A	Y?	Y	N	Y	Y	-**	-**	-**	-**	-**	-**	-	-	Dental disease
2129	F232	2148	2149	mod	1-2	75+	A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Dental disease; joint disease; some extra cleaning of some vertebrae and joint surfaces required, also pubic symphysis
2145	F234	2144	2147	sli	2-3	75+	A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Cranium mostly intact; dental disease; joint disease; trauma; inflammation; some further cleaning of vertebrae and some other joints required. N.B. non-adult remains co-mingled, either Sk 2146 or the second non-adult comingled with Sk 2146
2146	F234	2144	2147	mod	1-2	50-75	I	Y	N	N	Y	Y	Y	Y	-	Y	Y	-	-	N	At least one developing tooth crown present; most long bones too damaged to measure but could give minimum age. N.B. second non-adult present, probably a foetus/perinate/ neonate, plus some adult bones (Sk 2145?)

Table 3: Catalogue of articulate skeletons

% = Completeness expressed as a percentage; SP = Surface Preservation: 0 (excellent), 1 (very good), 2 (good), 3 (moderate), 4 (poor), 5 (very poor), 5+ (extremely poor), adapted from McKinley (2004); F = Fragmentation: min (minimal), sli (slight), mod (moderate), sev (severe), ext (extreme); * should have skull & dentition based on in situ photo; ** Should have rest of body, not just skull based on in situ photo.

Context	Broad Age Group	Condition		Potential for:		Notes
		F	SP	Age	Sex	
2015?	A	sli/mod	3-4	N?	Y?	Note in bag - 'was labelled LDF17 Sk 2015, skeleton number does not exist'; now in bag with no context number
2015 A	A	sli/mod	2-3	N?	Y?	Incomplete, calvarium only
2015 B	A	mod	3	N?	Y?	Dental disease
2022, Skull 1	A	sli/mod	1-2	Y?	Y?	N.B. box labelling says 'Skull 1', but note in bottom of the box says 'Skull 2'; dental disease
2022, Skull 1	A	sli/mod	2-3	Y?	Y?	Second skull also labelled '2022 Skull 1'; two mandibles present; dentition will need cleaning; dental disease
2022, Skull 2	A	sli/mod	3-4	Y?	Y?	-
2061, Skull 1	A	sli/mod	2-4	Y?	Y?	Dental disease, sinusitis

Table 4: Disarticulated human skulls and crania, Trench 2

Context	Description/Interpretation	No. of Frags	SP	Frag.	Species
U/S		2	1-2	mod	1 animal, 1 human
U/S	Loose in base of box	2	2-3	mod	human
2001 E	Topsoil	25	2-3	sev	mostly human, some animal
2001 W	Topsoil	35	2-3	sev	mix human & animal
2001	Topsoil	20	2-3	sev	human
2002	Subsoil	245	2-4	mod-sev	mix human & animal
2008	Rubble deposit - related to cemetery clearance?	55	2-3	mod-sev	mostly human, some animal
2008	Rubble deposit - related to cemetery clearance?	30	2-3	mod	mostly human, some animal
2008	Rubble deposit - related to cemetery clearance?	1300	1-4	min-ext	mostly human, some animal
2015	Clay surface	400	2-3	sli-sev	mix human & animal
2017	Fill of charnel pit (2016)	100	2-3	sli-sev	mostly human, some animal
2018	Skeletal remains in charnel pit 2016	1	0-1	min	probable animal tooth
2018	Skeletal remains in charnel pit 2016	750	2-4	sli-ext	human
2019	Stonier subsoil in north part of Trench 2 west	10	2-3	sev	human
2019	Stonier subsoil in north part of Trench 2 west	350	3	mod-sev	mostly animal, some human
2020	Plough furrow	60	3-4	sev	mostly human, some animal
2021	Collection of animal & human bone in north east part of Trench 2 west	10	2-3	sev	mostly animal & some human?
2021	Collection of animal & human bone in north east part of Trench 2 west	7	3-4	sev	human?
2022	Rubble layer in south part of Trench 2 east	10	2-3	sev	human
2022	Rubble layer in south part of Trench 2 east	300	1-3	sli-mod	mix human & animal
2025	Backfill of grave cut 2023 (for Sk 2024)	3	3-4	mod	human
2039	Rubble spread at southern end of Trench 2 west, below subsoil 2002	10	2-3	sev	mix human & animal

Context	Description/Interpretation	No. of Frags	SP	Frag.	Species
2039	Rubble spread at southern end of Trench 2 west, below subsoil 2002	31	2-4	sli-mod	mix human & animal
2056	Clay layer below 2019 on west side	5	1-2	sli	mix human & animal
2057	Subsoil (Trench 2 extension)	100	2-3	sev	mix human & animal
2061	Layer under 2057 (Trench 2 extension)	6	3-4	sev	human & ?species
2062	Articulated skeleton 2062	3	1-2	sli	human
2063	Backfill of grave cut 2066 (for Sk 2062)	5	3-4	sev	human
2067	Articulated skeleton 2067	16	0-3	min-sev	mostly human, some animal
2071	Loose brown soil in Trench 2 extension	1	2-3	sev	human
2077	Backfill of grave 2076 (for Sk 2067)	2	1-2	sev	?species
2078	Backfill of grave 2082 (for Sk 2079)	5	1-2	mod	human
2081	Articulated skeleton 2081	3	-	-	animal

Table 5: Disarticulated human bone, Trench 2

Context	Description/Interpretation	No. of Frags	SP	Frag.	Species
4001	Topsoil	110	2-4	mod-sev	mix human & animal
4002	Subsoil	40	2-3	sev	mix human & animal
4002	Subsoil	25	2-3	sev	mix human & animal
4003	Sediment on eastern side of wall	20	2-3	sev	human
4004	Layer west of wall	1	4	sev	human?
4007	Orangey soil layer on east side of wall, under 4003	15	2-3	mod	human

Table 6: Disarticulated human bone, Trench 4

Appendix C: Animal bone catalogue

Context	Whale	Cetacean?	Equus	Bos	Bos/Cervus	Bovid	Sus	Grey/harbour seal	Seal?	Ovis/Capra	Canis	cf. Lepus	Leporidae	Mustella sp.	Arvicola	Rattus sp.	Small rodent cf.
2001				30			11			17	1		1		1		
2002				4													
2008		4	2	31	1		4	1		22					1		
2012										1							
2015			2	21			5			15				1			
2019				2			2		1	1							
2020				2													
2021				1													
2022			1	1													
2039			2	43	1		7			23							
2056				7			1	8	1	4							
2057				7	1		1	1		6							
2061				1	1		3		2	5				1			
2067				1				1		1		1				1	
2071										2							
2077			2														
2078	1								1								
2079										1							
2089				2				1									
2092									2								
2103				1						1							
2106													1				
2110				3		3	2		1								
2112				1													1
Total	**1**	**4**	**9**	**158**	**4**	**3**	**36**	**12**	**8**	**99**	**1**	**1**	**2**	**2**	**2**	**1**	**1**

Table 7: Summary of mammal remains identified at order level or lower from Trench 2

Context	Anser anser domesticus	Anatidae	Gallus gallus domesticus	Gallus/Phisanus	Galliformes	cf. Uria aalge	Fratercula arctica	cf. Turdus merula	Corvus	Laridae
2001			1							
2008		3	2	1		1			1	
2012										
2015							1	2		
2039					1			1		1
2056		1			1					
2057	1									
2061		2								
2071		1								
2110								1		
Total	**1**	**7**	**3**	**1**	**2**	**1**	**1**	**4**	**1**	**1**

Table 8: Summary of bird remains identified at order level or lower from Trench 2

Context	Rajidae	Conger conger	Gadus morhua		Gadidae	Molva molva	Gadiformes	Eutrigla gurnardus	cf. Lophius piscatorius	Labrus bergylta	Salmo sp.
2001									2		
2015		1						1			
2021			3		1						
2022	1										
2039						2	1				1
2056										1	
2104					2						
2106					1						
Total	**1**	**1**	**3**		**4**	**2**	**1**	**1**	**2**	**1**	**1**

Table 9: Summary of fish remains identified at order level or lower from Trench 2

Context	Mammal								Bird					Fish	Total
	Large ungulate	Small ungulate	Ungulate	Large mammal	Medium/large mammal	Medium mammal	Small/medium mammal	Small mammal	Large bird	Medium/large bird	Medium bird	Small/medium bird	Small bird	Fish	
2001	3	12		66	169	40				3	2			2	297
2002				1		3									4
2008	12	14	2	68	186	22		3	1	2	6	1	2	1	320
2015	5	17		54	73	33				3			1		186
2019		6		6	16	12									40
2020				2		10									12
2021		1			9	11									21
2022						1		2	1						4
2039	7	7	1	58	214	13			1		2				303
2056			1	26	14	17					2				60
2057	2	4		24		32		3		2				3	70
2061	5	2		16		9									32
2067		4		3											7
2070				1	1	1									3
2071			4	1		6		1							12
2072						2									2
2077				1		1				1					3
2078		2			3										5
2079				1									1		2
2086				6											6
2088		1													1
2089				2	7								2		11
2092		1		1		5	1								8
2103						1									1
2104		1													1
2106				2	3										5
2110		5		20	17	18									60

Context	Mammal								Bird					Fish	
	Large ungulate	Small ungulate	Ungulate	Large mammal	Medium/large mammal	Medium mammal	Small/medium mammal	Small mammal	Large bird	Medium/large bird	Medium bird	Small/medium bird	Small bird	Fish	Total
2111				4											4
2140	1			2		1									4
Total	35	77	8	365	712	238	1	9	3	11	12	1	6	6	1484

Table 10: Summary of vertebrate remains identified to sized-based clade or class level from Trench 2

Context	Species	Element	Butchery type
2001	Cattle	Calcaneum	Chop
	Cattle	Radius	Chop
	Pig	Femur	Saw
	Sheep/goat	Radius	Saw
	Sheep/goat	Pelvis	Chop
	Large mammal	Longbone shaft	Saw
2008	Bos	Tibia	Chop
	Cattle/red deer	Metapodial	Chop
	Sheep/goat	Astragalus	Cut
	Medium/large mammal	Unidentified	Chop
	Medium mammal	rib	Cut
2015	Sheep/goat	Phalanx 1	Cut
2039	Cattle	Radius	Chop
	Cattle	Radius	Cut
	Medium/large mammal	Unidentified	Chop
	Large mammal	Vertebra	Chop
2057	Sheep/goat	Mandible	Cut
2067	Cattle	Humerus	Chop

Table 11: Evidence for carcass processing in Trench 2

Context	Mammals																	Total
	Equus	Bos	Sus	Ovis/Capra	Canidae	cf. Lepus europeaus	Oryctolagus cuniculus	Rattus sp.	Large ungulate	Small ungulate	Large mammal	Medium/large mammal	Medium mammal	Small/medium mammal	Small mammal	Anatidae cf. Branta bernicla	Anatidae	
4001	2	12	14	11	1	1	3	1	3	14	48	11	51	2	2	1	1	**178**
4002	1	5	7	2	2		1		2	6	29	12	26	1				**94**
4003		1					1				5	4	1					**12**
4006										6	1	1	4					**12**
4007		2																**2**
Total	**3**	**20**	**21**	**13**	**3**	**1**	**5**	**1**	**5**	**26**	**83**	**28**	**82**	**3**	**2**	**1**	**1**	**298**

Table 12: Summary of mammal remains from Lindisfarne Trench 4

Context	Birds								Fish								Total
	Gallus gallus domesticus	Gallus/Phasianus	Galliformes	Phalacrocorax sp.	Medium bird	Small bird	Galeorhinus galeus	Rajidae	Conger conger	Gadus morhua	Melanogrammus aeglefinus	Gadus/Molva	Gadidae	Gadiformes	Flatfish - Plaice/flounder/dab	Fish	
4001	1	2	3	1	2			1	2	4	1	1	1		1	5	**25**
4002				1	2	2		1		1	2		1	1		1	**12**
4003			1														**1**
4006							1			1	1						3
4007																	**0**
Total	**1**	**2**	**4**	**2**	**4**	**2**	**1**	**2**	**2**	**6**	**4**	**1**	**2**	**1**	**1**	**6**	**41**

Table 13: Summary of bird and fish remains from Lindisfarne Trench 4

Appendix D: Ceramics catalogue

Ctx	SF	Fcode	Form	Nosh	Wt	NoV	Part	Comment	SV
2001		DAUB		2	19	0		1 Poss kiln prop/stacking piece. Oxidised red firing fab	
2001		TGE	FW	3	8	0		Misc sherds	
2001		SWSG	HV	1	1	0			
2001		SWSG	JAR?	1	18	0			
2001		LGRESL		1	8	0			
2001		LBLACK	HV	1	19	1	BASE		
2001		BURNT	HV?	1	15	1	RIM	Burnt or overfired potting waste - Burnt/blistered glaze and glaze blooms on fracture.	
2001		ERSLRV	FW	1	7	0			
2001		ER		1	6	0			
2001	E	DTGW?	FW	1	12	0			
2001	E	ERBERSL type	BOWL?	1	8	1	RIM		
2001	E	BLACK	HV	1	4	1			
2001	W	CHPO	CUP	3	4	1	RIM		
2001	E	CREA		1	2	0			
2001	W	CREA	BOWL/CUP	1	1	1	RIM		
2001	E	CSTN	HV	1	4	1			
2001	W	CSTN	HV	1	8	1	BASE		
2001	E	DUTSD	HV	1	6	1	RIM		

2001	E	ENGS	JAR/JUG?	2	25	2	RIM		
2001	E	ENPO	CUP?	1	2	1	BASE		
2001	W	ER		3	28	0		Misc sherds	
2001	W	ER	JAR	1	49	1	RIM		
2001	W	ER	JAR?	1	28	1	BASE		
2001	W	ER?	HV	1	13	1	BASE	Burnt	
2001	E	ERSL	FW	2	21	0			
2001	W	LGRESL		4	32	0		Misc sherds	
2001	E	LGRESL		2	3				
2001	E	LGRESL	BOWL/DISH	1	26	1	RIM		
2001	E	LGRESL	HV	2	28	2	2 BASE		
2001	E	LOC PMRE	HV	1	4	1			
2001	W	OBGG type	HV	1	6	0			
2001	E	REFR	HV	2	8	1	HANDLE	Misc sherds	
2001	E	REFW	HV	3	22	1	BASE	Misc sherds	
2001	W	scrap		1	2	0			
2001	W	SWSG	HV	1	1	0			
2001	E	SWSG	HV	1	3	0			
2001	W	TGE		1	1	0			
2001	E	TGE		6	13	0		Misc sherds	
2002		TGE	FW	1	4	0			
2002		TWV2	HV	1	7	0		Reduced fabric	
2002		FREC	HV	1	22	0	HANDLE		
2015		EGSW3 type	JUG?	1	6		RIM		

2020		RG type	hv	1	5	0		Dark grey sandy fab. Northumberland type.	
2039		DTGW?	FW	1	1	0			
2039		LORG	JUG?	1	4	0		Finer Shotton type fabric	
2039		ER	HV	1	10	1	BASE		
2039		MEDOX		1	2	0		scrap	
2039		TWV type	HV	1	10	0			
2057		OXMIC type	HV	1	6	0		burnt	
2057		REFR	HV	1	1	0			
2057		REFW		2	6	0		Misc sherds	
2057		TWV	JUG	1	15	1	RIM		
2061		TWV type	HV	1	2	1			
2061		TWV type	HV	1	4	0			
2070		DAUB		2	6	0		Red oxidised, fine fabric. Poss potting waste.	
2070		DAUB		2	34	0		Sandy red oxidised fabric poss brick or tile production waste?	
2071		MEDOX type		1	1	0		Poss daub frag	

Table 14: Pottery catalogue – Trench 2

Ctx	SF	Fcode	Form	Nosh	Wt	NoV	Part	Comment	SV
4001		BLACK	HV	1	18	1	HANDLE		
4001		BLACK	HV	2	30	1	HANDLE		
4001		BONE	CUP	1	14	1	BASE		
4001		BONE LUST	PLATE	1	4	1	RIM		
4001		BUGR	HV	2	5	0			
4001		CREA	FW	1	1	1	RIM		
4001		ENPO	CUP	1	1	1	RIM		
4001		ENPO	HV	1	1	0			
4001		ER	FW	1	24	1	RIM		
4001		ER	HV	15	112	2	2 RIM	Misc sherds	
4001		ER type	?	1	35		HANDLE?	Very work poss skillet handle. Poss water worn. Poss not pot.	
4001		ERBER	FW	3	16	1	RIM		
4001		FREC	HV	2	20	1			
4001		LCR	HV	1	8				
4001		LGRESL		1	2	0			
4001		LGRESL	DISH/BOWL	2	60	1			
4001		LGREU	HV	1	11	0			
4001		LRG type	HV	1	11	1	BASE		
4001		LUCK type	HV	2	10	0			
4001		PEAR	BOWL	1	2	1	RIM		
4001		RAER	HV	1	13	1	BASE		
4001		RAER	HV	1	3	0			
4001		REF SPON	DISH	2	9	1	RIM		

Ctx	SF	Fcode	Form	Nosh	Wt	NoV	Part	Comment	SV
4001		REF SPON	HV	4	6	1	RIM	Misc sherds	
4001		REF SPON1	DISH	1	13	1	RIM		
4001		REFR	HV	4	5	0		Misc sherds	
4001		REFRSL	FW	2	4	1	RIM		
4001		REFRSL	HV	3	2	2	RIM	Misc sherds	
4001		REFW		8	18	1	RIM	Misc sherds	
4001		REFW	HV	1	4	1	RIM	burnt	
4001		REFW BAND	HV	1	5	0			
4001		RG type	HV	2	7	0			
4001		TGE		8	7			Misc sherds	
4001		TGE	DISH	1	6	1	RIM		
4001		TPW	FW	5	13	4	2 RIM	Misc sherds	
4001		TWV type	HV	3	23	0	BASE		
4001		YELL	HV	1	4	1	RIM		
4002		BLACK	HV	1	5	0			
4002		BURNT		2	4	0			
4002		CSTN	HV	1	5	0			
4002		ER	DISH/BOWL	1	36	1			
4002		ER	HV	1	2	0			
4002		ERSL	FW	2	40	1	RIM		
4002		LBLACK	HV	1	6	0			
4002		LGRESL	HV	1	6	0			
4002		REFRSL	HV	1	1	0			
4002		REFW	BOWL	3	2	1			

Ctx	SF	Fcode	Form	Nosh	Wt	NoV	Part	Comment	SV
4002		STONE		1	5	0			
4002		SWGR type	HV	3	10	1	HANDLE	Misc sherds	
4002		TGE		2	4	0		Misc sherds	
4002		TWV	HV	2	4	0			
4003		ERSL	hv	1	1	0			
4006		ER	hv	3	46	1	BASE		
4006		ER	hv	1	1	1	RIM		
4006		REFW		1	1	0			
4006		TPW	hv	2	2	0			

Table 15: Pottery catalogue - Trench 4

Table 16: CBM catalogue – Trench 2

Context	Fabric Code	Form	Confidence	NoSh	Wt	corner	Length	Width	Thickness	Mortaring	Soot	Comments
2001	TZ01	B/T		7	20	0	0	0	0			
2001	TZ11	Brick		1	94	0	0	0	55			
2001	TZ12	Pan Tile		1	134	0	0	0	0			
2001e	TZ12	Pan Tile		4	230	0	0	0	0			
2001e	TZ12	Pan Tile		1	28	0	0	0	0			
2001e	TZ11	Tile		6	58	0	0	0	0			
2001w	TZ11	Brick		16	184	0	0	0	0			
2001w	TZ12	Tile		2	101	0	0	0	0			
2002	TZ11	B/T		25	331	0	0	0	0			
2015	TZ01	B/T		1	6	0	0	0	0			
2018	TZ01	B/T		1	22	0	0	0	0			
2018	TZ01	Brick		61	384	0	0	0	0			fragments from a low fired brick
2019	TZ11	B/T		1	10	0	0	0	0			
2019	TZ11	Brick		28	187	0	0	0	0			
2020	TZ01	B/T		4	11	0	0	0	0			
2035	TZ01	B/T		4	21	0	0	0	0			
2039	TZ01			2	17	0	0	0	0			
2056	TZ01	brick		4	56	0	0	0	0			
2056	TZ01	brick		1	76	0	0	0	0			
2056	TZ01	Flat	1	1	38	0	0	0	11			flat irregular fragment low fired or burnt clay
2057	TZ01			10	36	0	0	0	0			surface fragment
2061	TZ01	B/T		4	9	0	0	0	0			
2061	TZ01	B/T		1	10	0	0	0	0			low fired
2061	TZ01	Brick		3	37	0	0	0	0			

Context	Fabric Code	Form	Confidence	NoSh	Wt	corner	Length	Width	Thickness	Mortaring	Soot	Comments
2061	TZ01	Brick		51	632	0	0	0	0			
2061	TZ01	brick		2	70	0	0	0	0			
2061	TZ01	brick		2	52	0	0	0	0	1		
2061	TZ01	Brick		105	###	0	0	0	0			
2061	TZ01	Brick		17	228	0	0	0	0			
2061	TZ01	brick		1	125	0	0	0	48			
2061	TZ01	brick		1	159	0	0	0	40			probable thickness
2061	TZ01			11	574	0	0	0	0			1 edge tapering
2061	TZ01			61	364	0	0	0	0			
2065	TZ01	B/T		1	3	0	0	0	0			
2070	TZ01	Flat		2	22	0	0	0	19			
2071	TZ01	Brick		1	36	0	0	0	0			hard
2072	TZ01	Brick		34	###	0	0	0	0			
2072	TZ01	brick		1	176	0	0	0	44			44mm thick? Not clear if this is full thickness
2079	TZ01	B/T		1	3	0	0	0	0			
2091	TZ01	B/T	2	1	6	0	0	0	0			pale
2092	TZ01	B/T		1	2	0	0	0	0			
2111	TZ01	B/T		2	23	0	0	0	0			
2111	TZ01			1	11	0	0	0	0			
2134	TZ01			52	348	0	0	0	0			fragment of surface
2136	TZ01	B/T		3	28	0	0	0	0			

Appendix E: Metalworking debris catalogue

Site Code	Context	Ore		Fe metal		Cu alloy		Pb metal		Smithing slag		Green glazed slag		Yellow/grey slag		Slagged lining		Black vitrified stone		Clinker	
		No.	g	No.	g	No.	g	No.	g	No.	g	No.	g	No.	g	No.	g	No.	g	No.	g
LDF19	2001							1	221												
LDF19	2015	1	12							5	4										
LDF18	2019													1	24						
LDF19	2039																			1	0.5
LDF19	2057									1	10			1	18					12	28
LDF19	2061											2	25	7	1355						
LDF19	2061													18	370						
LDF18	2067									1	48										
LDF19	2069									1	30										
LDF19	2070					1	9.5														
LDF19	2071															1	483				
LDF18	2078													1	29						
LDF19	2111													2	13						
LDF19	2134									1	9										
LDF19	2135																				
LDF18	4001			1	4.3					3	30										
LDF18	4006																	1	40		

Table 17: Metalworking debris catalogue – Trench 2 and Trench 4

Appendix F. Lithics catalogue

Context	SF	Type	Count	Weight (g)	Complete	Burnt	Post-depositional damage	Patination	Mode of percussion	Period(s)	Description
2020		Flake	1	5.8	N	Y	Indeterminate	N/A	N/A		Heavily burnt partial flake fragment with crazing
2039		Primary element	1	0.8	N	N	Heavy	Light	SH>5mm		Elongated primary flake with heavily damaged margin and missing distal end. Made on flint, with abraded cortex.
2061	155	Double endscraper	1	11.9	Y	N	None	None	N/A		Made on a primary flake. Both ends have been truncated by direct semi-abrupt/abrupt retouch forming a convex scrapers. Proximal end scraper is not invasively retouched and shaped, and may have been the predominate working surface. Made on reddish-brown flint with abraded cortex, probably from a beach pebble. 35.6 x 22.4 x15.45 mm
2071		Flake	1	5.5	Y	N	Light	None	Indeterminate		Made on yellowish-brown chert with chalky cortex

Table 18: Lithics catalogue – Trench 2

Appendix G: Small finds register

Small Find	Context	Object	Type	Quantity	Description
60	2001	Object	Iron	1	Clench bolt
61	2001	Object	Glass	1	Glass fragment
62	2001	Object	Lead	1	Large lead object
63	4001	Nail	Iron	2	Iron nail
64	4001	Bead	Stone	1	Cuthbert's bead
65	4001	Object	Copper		Copper alloy
66	4001	Shot	Copper	2	Possible artillery shell
67	4001	Nail	Iron	1	Corroded iron nail
68	4001	Object	Iron	1	Blade shaped ferrous object
69	4001	Coin	Copper	1	Victorian penny
70	4001	Object	Iron	1	Corroded iron nail
71	4001	Coin	Copper	1	George V 1928 penny
72	4001	Coin	Copper	1	Victorian half-penny
73	4001	Nail	Iron	1	Corroded iron nail
74	2001	Window	Glass	1	Glass fragment
75	4001	Object	Iron	1	Corroded iron mass
76	4001	Object	Glass	1	Small piece of clear blue/ pale green tinted glass
77	4001	Object	Iron	1	Bent iron object
79	4001	Object	Iron	2	Corroded iron nail
80	2057	Coin	Copper	1	Anglo Saxon century coin: The coin we have found was issued by the Northumbrian king, Aethelred II, who ruled in the mid-9th century. He is not to be confused with the more famous Aethelred II (better known as 'the Unready'). Very little is known about our Northumbrian Aethelred, there are very few records that give us an insight into the history of 9th century Northumbria, and those are late in date. It seems though that he probably succeeded Eanred as king and was most active c. 854-62. He seems to have been deposed as king by Raedwulf, who himself died fighting against the Vikings. The removal of Raedwulf allowed Aethelred to return to power, but he was killed not many years later. The coin is of a type known as a styca, a small copper

Small Find	Context	Object	Type	Quantity	Description
					alloy coin containing a little silver. They were first produced by Eanred and seem to have been produced in large numbers in York. The men responsible for minting the coins were recorded on the coins; in this case, our coin carries the name Fordred, who was probably based in York
81	4001	Buckle	Copper	1	Small buckle
82	4001	Shot	Metal	1	Approx. 1cm diameter metal ball
83	4001	Nail	Iron	1	Iron Nail heavily corroded
84	4001	Object	Metal	1	Small possible copper metal fragment
85	2057	Nail	Iron	1	Iron nail head
86	2008	Nail	Iron	1	Iron nail
87	4002	Nail	Iron	2	2 Iron nails
88	2022	Nail	Iron	1	Iron nail
89	4001	Nail	Iron	1	Iron nail
90	4002	Nail	Iron	1	Iron nail
91	4002	Nail	Iron	1	Iron nail
92	4002	Coin	Copper	1	Copper coin
93	4002	Nail	Iron	1	Iron nail
94	2002	Nail	Iron	1	Corroded iron object
95	4002	Window	Glass	1	Gold colour stained glass
96	4002	Object	Glass	1	Green glass fragment
97	4006	Nail	Iron	1	Iron nail
98	4002	Window	Glass	1	Clear glass fragment
99	4002	Nail	Iron	1	Iron nail
100	4002	Nail	Iron	1	Iron nail
101	4002	Nail	Iron	1	Iron nail
102	4001	Object	Bone	1	Fragment of worked antler. Sawn flat plate with rounded end. Partial holes have been drilled/pierced through the object. Perhaps scale handle from strip-tanged implement – if so, then 13th century date or later
103	2008	Object	Stone	1	Top of head stone: same head stone as SF 17. Worked stone with cross decoration in an Irish style.
105	2064	Spindle	Stone	1	Stone object: potentially part of a broken spindle whorl

Small Find	Context	Object	Type	Quantity	Description
106	2019	Object	Iron	1	Large oblong piece of ferrous metal
107	2034	Object	Copper	1	Tiny fragment of copper alloy
108	2008	Object	Stone	1	Name stone: Has writing, potentially a name. Sunken circle that would have had a glass or metal fitting. 8th cent.
109	2008	Nail	Iron	1	Iron nail
110	2008	Object	Stone	1	Stone rubber
111	2008	Hone	Stone	1	Honing stone
112	2072	Bead	Stone	1	Stone bead
113	2008	Object	Stone	1	Fragment of Anglo-Saxon sculptures
114	2019	Vessel	Ceramic	1	Medieval pottery
115	2039	Coin	Silver	1	Half a short cross penny: Henry III class 5g minted by Willem of London. The obverse legend reads as hENR[ICVS REX/ I]II and the reverse reads as WIL/[LEM/ONL]/VND, the date is c.1258-70. 09
116	2008	Nail	Iron	1	Iron nail
117	2039	Object	Stone	1	Head stone with writing maybe a name, probably has a Celtic cross, from the Anglo-Saxon period
118	2015	Object	Bone	1	Potentially femur of SK 2067
119	2078	Object	Iron	1	Heavily corroded iron object
120	2019	Object	Iron	4	Iron object – possible nail.
121	2001	Nail	Iron	1	Iron nail
122	2015	Object	Stone	1	Worker stone, it's possibly got markings on one side and tool marks on the other side
123	2020	Object	Flint	1	Worked flint possibly scraper
124	4002	Bead	Bone	1	Shell bead
125	2057	Window	Lead	2	Two fragments of medieval lead window came probably associated with the medieval priory. They are 'T-shaped' in profile but were probably originally H-shaped.
126	4002	Object	Bone	1	Fragment of worked bone: peg or broken fragment of shaft decorated by a group of three parallel incised lines. Given the fragmentary nature and simple decoration on this object it is impossible to identify its function with certainty, although it does have some parallels with the bone styli recovered from medieval contexts at Monkwearmouth and Jarrow

Small Find	Context	Object	Type	Quantity	Description
127	2056	Nail	Iron	1	Iron nail
128	2056	Nail	Iron	1	Iron nail frag
129	2002	Coin	Copper	1	Coin
130	2057	Hone	Stone	1	Rectangular stone with very smooth edges – maybe a honing or whet stone.
131	2002	Object	Glass	1	Glass object
132	2057	Object	Lead	1	Lead object
133	2015	Nail	Iron	3	Iron Nail
134	2015	Object	Lead	1	Lead object
135	2089	Object	Glass	1	Glass fragment
136	2089	Nail	Iron	1	Iron nail
137	2008	Object	Stone	1	Fragment of name stone
138	2015	Nail	Iron	1	Possible coffin nail
139	2071	Slag	Metal	1	Slag
140	2015	Object	Iron	1	Iron nail
141	2015	Object	Stone	1	Potential name stone
142	2015	Nail	Iron	1	Iron nail
143	2015	Nail	Iron	1	Fe object
144	2015	Object	Copper and Bone	3	2 copper alloy rings 4g, and 1 finger bone 3g, 2 rings measuring 21mm x 3mm and 24mm x 5mm and the finger bone measuring 41mm x 14mm x 11mm
145	2056	Nail	Iron	1	Nail
146	2020	Nail	Iron	1	Nail
147	2015	Nail	Iron	1	Nail
148	2015	Object	Lead	1	Lead object
149	2015	Nail	Iron	1	Iron nail
150	2111	Pin	Copper	1	Possible copper pin
151	2061	Coin	Copper	1	Coin
152	2061	Object	Metal	1	Industrial residue
153	2110	Object	Stone	1	Name stone with Celtic knot carvings
154	2110	Nail	Iron	2	Iron nail
155	2016	Object	Flint	1	Double ended hand scraper
156	2015	Object	Glass	1	Glass fragment

Small Find	Context	Object	Type	Quantity	Description
157	2015	Nail	Iron	1	Iron nail
158	2061	Bead	Stone	1	St Cuthbert bead
159	2069	Slag	Metal	1	Slag
160	2110	Key	Iron	1	Possible iron key
161	2061	Object	Stone	1	Stone with possible plaster/ paint
162	2061	Object	Stone	2	Industrial residue
163	2034	Slag	Metal	3	Fuel ash slag
164	2015	Object	Stone	1	Upper Left corner of square namestone. Decoration worn. Upper part of an arm of a cross visible with a semi-circle terminal. Square border with runic (?) writing. 174mm x 141mm x 35mm; 1154g
165	2001	Buckle	Copper	1	Possible belt buckle
166	2015	Object	Glass	1	Square glass object (?). Blue/green and white. 14mm x 14mm; 2g
167	2020	Coin	Copper	1	Northumbrian Styca. Archbishop Wigmund (837-849/50). Moneyer - HVNLAF. Spink 870: Equal armed crosses with crosses on both sides. border of raised dots on both sides. 13mm x 1mm; 2g
168	2110	Nail	Iron	1	Iron nail
169	2020	Coin	Copper	1	Northumbrian Styca. Eanred (810-830). Moneyer - MONNE. Spink 862. Writing on both sides, translation = Eanred (reigned 810-841AD). 13mm
170	2135	Coin	Copper	1	Very degraded coin
171	2070	Slag	Copper	1	Copper slag
172	2001	Coin	Copper	1	c.710-760 Spink 806, Series N, Type 41b: One side beast with raised tail; other side two humans stood.
173	2015	Object	Lead	1	Lead object
174	2145	Bead	Stone	1	St Cuthbert's bead: found near the ribs of SK2145 perhaps a rosary
175	2135	Object	Ceramic	2	Found near probable kiln, potentially a flume pipe: Larger piece 126mm x 88mm x 33mm. Smaller piece 81mm x 70mm x 32mm. Total weight 610g
176	2039	Bead	Stone	1	St Cuthbert's bead
177	2145	Nail	Iron	1	Iron nail: From sample 118, hand sieved from SK2145. 41mm x 24mm; 16g
178	2056	Object	Lead	1	Lead object: spanner-like shape on one end, H-shaped cross section. 38mm x 12mm x 8mm; 14g

Table 19: Small finds register

Appendix H: Environmental catalogue

Table 20. Plant macrofossils recovered from Trench 2 and 4 during 2018 and 2019 excavations

Sample No	111	
Context	2034	
Feature		
Feature Type		
Latin Binomal		Vernacular
Indeterminate Cereal	5	Indeterminate Cereal

Taxonomy and nomenclature follow Stace (1997) *lots of fragmentary grains, but preservation is too poor to identify

Table 21. Charcoal recovered from Trench 2 and 4 during 2018 and 2019 excavations

Sample No.r	100	108	112
Context	2078		2135
Feature			
Feature Type		SK 2091	
No. fgts.	38	5	100+
Max. size (mm)	9	12	22
Latin			
Salix / Populus			6
Quercus	5	2	25
Indeterminate	33	3	69

Taxonomy and nomenclature follow Schweingruber (1978). Numbers are identified charcoal fragment for each sample.

Table 22. Components of samples from Trench 2 and 4 during 2018 and 2019 excavations

Sample Number	100	100	106	108		111	112
Context Number	2078	2078	2098	2091	2109	2034	2135
Feature Number							
Feature type							
Charcoal	3		1	1			4
Earthworm egg capsules	1		1	1		3	2
?Hammerscale fgts.			1				
Insect fragments	1		1			2	3
Plant macrofossils – charred						1	
Plant macrofossils – modern contaminant				1			
Root / rootlet fragments	4		3	4		3	3
Sand	3		4	2		4	3
Snails				1		1	
Undisaggregated Material		4			4		

Semi quantative scale: '1' – one or a few specimens (less than an estimated six per kg of raw sediment) to '4' – abundant remains (many specimens per kg or a major component of the matrix).

Appendix I: Radiocarbon dating catalogue

Site Code	Context	Lab no.	C14	±	$\delta^{13}C$ relative to VPDB	$\delta^{15}N$ relative to air	C/N ratio (Molar)	Calibrated radiocarbon ages (cal AD)	
								68.2% probability	95.4% probability
LDF17	SK2024	SUERC-86261 (GU51025)	948	29	-19.8 ‰	11.4 ‰	3.4	1040-1100 AD (27.0%) 1110-1190AD	1020-1230 AD (95.4%)
LDF17	SK2030	SUERC-86262 (GU51026)	985	29	-20.1 ‰	12.2 ‰	3.4	1016-1046 AD (40.5%) 1094-1121 AD (23.1%) 1141-1147(4.6%)	991-1055 (51.9%) 1077-1154 AD (43.5%)

The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon

Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using a mix of the IntCal13 and Marine13 calibration curves. †Human bone collagen with a $\delta^{13}C$ value above -20‰, accompanied by a raised $\delta^{15}N$ value, is taken to indicate

a marine component in the diet. The percentage contribution of this marine component is calculated using

end-members of -21.0‰ (fully terrestrial) and -12.5‰ (fully marine) with an uncertainty of 10% applied.

The $\delta^{13}C$ value of -19.8‰ gives a 14% marine contribution (±10%).

A regional marine offset (ΔR) of 0 ± 50 years has been used in the calibration.

Appendix J: Social impact methodology

Table 23: Social impact methodology

	Activities	Outputs	Outcomes	Standards of Evidence
	the processes and tasks undertaken by the organisation	*a quantifiable unit of 'product' or 'service' measurable once completed*	*observable change for heritage, individuals or communities*	*data collection and confidence rating demonstrating the positive difference made by an intervention*
For archaeology and heritage	1. Stakeholder consultation with national and local heritage bodies, societies and local authorities 2. Archaeological investigation of nationally significant site 3. Accessible archaeological archive	✓ Scheduled Monument Consent ✓ Archaeological Project Design ✓ Archaeological Assessment Report with recommendations ✓ Archaeological Archive	Through our work, heritage will be: ➲ identified, interpreted, and better explained ➲ better managed and in an improved condition	Level 3 – Analytical report, synthesising specialist reports with previous regional, national and international work to determine significance, importance and potential of the site.

	Activities	Outputs	Outcomes	Standards of Evidence
	the processes and tasks undertaken by the organisation	*a quantifiable unit of 'product' or 'service' measurable once completed*	*observable change for heritage, individuals or communities*	*data collection and confidence rating demonstrating the positive difference made by an intervention*
For people	4. Half-day family friendly DigCamp sessions 5. Finds Lab participation 6. Excavation skills training 7. Heritage skills workshops	✓ Excavation and finds room skills training for 87 participants ✓ 14 Participants learn new skills DigCamp ✓ 23 Participants in poetry and creative skills workshops	By taking part in our work: ➲ a wider range of people will be involved in archaeology and heritage ➲ people will have greater wellbeing ➲ people will have learnt about the archaeology and heritage of Pontefract Castle, leading to changes in ideas and actions ➲ people will have more skills in excavation and finds processing, giving greater confidence to get involved	Level 3 – Field school training programme quality assured and endorsed by ClfA. Level 2 – Project evaluation report including survey data for users of DigLab and project participants to determine changes for individuals as a consequence of taking part, and highlighting scalability, implementation and ability to meet national needs.
For communities and society	8. Education programme for primary schools 9. Daily trench-side tours during archaeological investigation 10. Published web content and native social posts 11. Traditional broadcast and print media	✓ 45 school pupils benefit from tailored education content ✓ Daily trench-side tours reach new and more diverse audiences (~1500 per people week) ✓ 500,000 combined impression across Facebook & Twitter ✓ 7,000 unique microsite views ✓ Regional and National News Coverage by BBC, Daily Mail, Forbes, The Guardian, Telegraph, amongst many others	As a consequence of our work: ➲ more and a wider range of people will be involved in heritage ➲ people have learned about archaeology and heritage, leading to change in ideas and actions ➲ the local area will be a better place to live, work or visit	Level 2 – Collection of evaluation survey data for participating schools, visitors to the archaeological site to quantify audience demographics and determine any changes which took place as a consequence of the visit