‘*Here lieth interr’d’*

An examination of 17th-century British burial landscapes in eastern North America

by

Robyn S. Lacy

A thesis submitted to the

School of Graduate Studies

in partial fulfilment of the

requirements for the degree of

Master of Arts

Department of Archaeology

Memorial University of Newfoundland

September 2017

Abstract

An archaeological, historical, and geographical survey-based examination, this research focuses on the first organized 17th-century British colonial burial grounds in 43 sites in New England and a further 20 in eastern Newfoundland, and how religious, socio-political, and cultural backgrounds may have influenced the placement of these spaces in relation to their associated settlements. In an attempt to locate the earliest 17th-century burial ground at Ferryland, Newfoundland, this research focuses on statistical analysis, and identifying potential patterns in burial ground placement. The statistical results will serve as a frequency model to suggest common placement and patterns in spatial organization of 17th-century British burial grounds along the eastern seaboard of North America. In addition, text-based and geochemical analyses were conducted on the Ferryland gravestones to aid in determining age and origin.

Acknowledgments

I would like to thank everyone who has provided their support and guidance throughout the course of this project. First, I'd like to thank Dr. Barry Gaulton for his endless assistance and support of my ever-growing thesis. I could not have asked for a better supervisor throughout this project, and I hope his future students know how lucky they are. Secondly, I'd like to thank my reviewers, Dr. Meghan Burchell and Dr. Sherene Baugher for reviewing my thesis and helping to guide the final result. I must also acknowledge the financial support of the Social Sciences and Humanities Research Council (SSHRC), the J.R. Smallwood Foundation, the Institute of Social and Economic Research (ISER), the Newfoundland and Labrador Provincial Archaeology Office, the Colony of Avalon Foundation, and the Department of Archaeology and School of Graduate Studies at Memorial University.

Additionally, I'd like to extend my thanks to all of the archaeologists, archivists, and historians who have aided in my research when the trail ran cold: Gordon Harris of the Ipswich Historical Society, Carol Miles of the Scituate Historical Society, John Tramandozzi of the Malden Historical Society, Henry Miller of Historic St. Mary's City, Cynthia A. Young-Gomes of Museums of Old York, Emerson W. Baker of Salem State University, Bethany Austin of the Hampton History Museum, Francis P. O'Neill of the Maryland Historical Society, Lynn Calvarses of Old St. Paul's Episcopal Church in Baltimore, Maryland, Nicholas M. Luccketti of the James River Institute for Archaeology Inc., Rina Sandler of the Cambridge Historical Society, Meg L. Winslow of Mount

Aubon Cemetery, Anne Payne of the Petty Harbour / Maddox Cove Heritage Museum, Doug McCann at chafetree.com, and Eric Jerrett of the Bay Roberts Heritage Society Inc.

I'd also like to thank Maria Lear, curator of archaeological collections in the Department of Archaeology for the countless hours she spent tromping around Ferryland with a GPR, Bryn Tapper for aiding in the production of fieldwork maps in GIS, Drs. Mike Deal, Meghan Burchell, Peter Whitridge, and Mario Blaser for their parts in guiding my research over the course of my degree.

Special acknowledgment to Dr. Stephen Piercey for teaching me to conduct pXRF analysis of the gravestones and slate tiles and for processing the data and providing me with the final report, table, and figures which are presented in this thesis as part of Chapter 6.

Thank you to my wonderful cohort, Kayley Sherret, Meghan Walley, and Natasha Leclerc for helping me brainstorm, and clapping at all my talks! My thanks also extends to my wonderful fieldwork volunteers (in no particular order: Kevin Rickard, Michael Westcott, Curtis Robinson, Kate Pitcher, Tiffany Brazil, Meghann Livingston, Karen Northover, Nicole Baldwin, Dave Roberts, Holly Rafuse, Maggie Way, Kayley Sherret, Ian Petty, Meghan Walley, Megan Webb, Johanna Cole, Adrienne Watts, Rebecca Jones, JD Archer, Elsa Simms, and Natsuho Kaneko) without whom I would not have been able to investigate so many areas at Ferryland. Thank you for the time you have dedicated to my research, and for your endless enthusiasm even when I made you all work in the rain.

Finally I must acknowledge the endless support of my friends and family throughout this entire project, especially my mother, Barbara Lacy, for teaching me how to use SPSS from scratch. And above all, thank you Ian Petty.

Table of Contents

Abstract ii

Acknowledgements iii

Table of Contents v

List of Tables viii

List of Figures ix

List of Appendices x

Chapter 1

1.1 Introduction 1

1.2 Terminology 8

Chapter 2

2.1 Religious and Political Background 13

2.1.1 Pressures of change - Burial rites in Britain prior to the Protestant Reformation 13

2.1.2 Effects of the Protestant Reformation on British burial tradition 17

2.1.3 British North America in the early 17th century 21

2.1.4 The British & Irish in 17th-century Newfoundland 26

2.1.5 Ferryland as a town and site 30

2.2 Theoretical Approaches 32

2.2.1 Taskscape Theory 32

2.2.2 Landscape Theory 33

2.2.3 Taskscape & Landscape analysis at Ferryland 36

2.2.4 Burial Landscapes 39

2.3 Methodology 42

Chapter 3

3.1 Selection of Sites 44

3.1.1 Site Choice 44

3.1.2 Mainland North American Settlements 45

3.1.3 Eastern Newfoundland Settlements - 17th and 18th Century 69

3.2 Discussion of Sites 78

Chapter 4

4.1 Statistical Analysis 81

4.1.1 Site Selection and Analysis 81

4.1.2 Frequency of Burial Ground Traits Model 86

4.1.3 Results of Statistical Analysis 87

Chapter 5

5.1 Excavation at Ferryland 98

5.1.1 Excavation preparation 98

5.2 Non-invasive survey 103

5.2.1 Ground Penetrating Radar at Ferryland 103

5.2.2 Results of GPR Survey 108

5.3 Excavations at Ferryland 109

5.3.1 Ferryland Excavation – 2016 & 2017 110

5.3.2 Results and Discussion of Archaeological Fieldwork 112

Chapter 6

6.1 Gravestone Analysis 118

6.1.1 17th-century Gravestones 118

6.1.2 Informing through inscribed text 120

6.1.3 Gravestone carving in Newfoundland 127

6.2 Geological analysis 131

6.2.1 Geological analysis of the Ferryland Gravestones 131

6.2.2 Analytical Methods for pXRF for Gravestones and Samples 132

6.2.3 pXRF test results and discussion 133

Chapter 7: Discussion and Conclusion

7.1 Discussion 135

7.1.1 Discussion & Summary of Results 140

7.1.2 Further Questions & Directions 145

7.2 Conclusion 149

Bibliography

Primary Sources 152

Secondary Sources 153

List of Tables

Table 4.1: Frequency Analysis of 17th-century settlements (43 sites) 96

Table 4.2: Frequency Analysis for Comparison of three regions (31 sites) 97

Table 4.3: Frequency Analysis of settlements in Newfoundland, 17th & 18th century 97

List of Figures

Figure 2.1: Tynemouth Priory 18

Figure 2.2: Old Boston, 1645 24

Figure 2.3: Colonial gravestones 26

Figure 3.1: Map showing Hampton, VA. 47

Figure 3.2: Herrman Map of VA and MD 51

Figure 3.3: Historic Cambridge, re-drawn 1906 62

Figure 5.1: Ferryland 2016/2017 Excavation Map 102

Figure 5.2: GPR Survey at Ferryland 106

Figure 5.3 Slice-view of GPR survey data 109

Figure 6.1: The Ferryland Gravestones 120

Figure 6.2: Ferryland gravestone showing carved guidelines 121

Figure 6.3: Ferryland gravestone showing roman lettering and ligatures 124

Figure 6.4: Four 18th-century Newfoundland gravestones 130

Figure 6.5: pXRF data graphs 134

Figure B.1: 17th-century kaolin pipes 181

Figure B.2: Layer of slate in east profile, Area D (2) 185

Figure B.3: Profile of bastion construction, trench 6 202

Figure B.4: Layers of stacked sods in profile, bastion trench 7 203

List of Appendices

Appendix A: 17th and 18th-century burial ground spatial data 175

Appendix B: Ferryland fieldwork description 2016 – 2017 180

Appendix C: pXRF analysis report 205

Chapter 1

Introduction & Terminology

1.1 Introduction

"*Do not forget when this you view,*
That death ere long will call for you,
And take your fleeting breath.
Then you like me, must have your bed,
Among the cold and silent dead,
And sleep the sleep of death."[1]

The burial landscape of British North America is characterized in most peoples' minds by gravestones carved with grinning skulls, morbid epitaphs, haunting churchyards, and a plethora of other imagery reminding the viewer of what is to come. What appears as a fixation with death in the 17th century can be better understood as an awareness and connectedness throughout a community, of the final stage in every individual's life, regardless of politics, religion, or ethnicity. Political and religious turmoil in England, Scotland, and Wales between the Protestant Reformation and the English Civil War helped shape the burial landscape in colonial North America. The colonial dead were a mouthpiece to express a community's outlook on policies of the time, and through the investigation of the landscape in which they were interred 300 – 400 years ago we are able to explore the decision-making processes involved in burial ground placement in the 17th century.

[1] Sarah Lymen stone, 1801, Manchester, Connecticut.

Gravestone art and design is a thoroughly investigated area of research first propelled into popularity in North America by Harriette Forbes' 1927 book, which looked at New England gravestones as both art and document (reprinted 1967). This was followed by James Deetz and Edwin Dethlefsen's 1966 evaluation of what they refer to as Puritan gravestone art (reprinted in summary, Deetz 1977). Since then, there have been research projects examining the iconography and carvers of early gravestones along the northeastern coast of colonial America, which are discussed later in the thesis. While there has been some study of the burial landscape in North America (Worpole 2003; Fisher and Reha (eds. 2010), this thesis expands upon these works by way of a broad geographical comparison of 63 settlements and their associated burial grounds along the northeast coast of the United States and the Avalon Peninsula in Newfoundland.

There is a growing interest among some death professionals – people who work directly with the contemporary dead in funeral homes and cemeteries – in the West to re-connect with historic funeral traditions and more environmentally-conscious burials. Many advocate for green burials, free from embalming fluids and caskets which prevent natural decomposition, as well as calling for active discussions about death as part of everyone's lives. Although the American Civil War introduced the need to preserve bodies through embalming to return them to their families, war usually is not the reason that people are embalmed today. Along with changes to the burials themselves, the North American burial landscape has changed dramatically over the last few centuries, from varied Indigenous burial traditions through to the introduction of European practices and the imposition of new traditions. European burial traditions in North America began in

the homes of those who died, and moved to church services and out into the burial grounds.

The term ‘cemetery’ was not used in North America until well into the 19th century (Baugher and Veit 2014:11-12), however the idea that having death as a central part of one’s daily life was unhealthy had already began to percolate across the colonies. Prior to that, the stereotypical English churchyard model or the unconsecrated burial ground, along with family plots, were the organizational standards of New England and Newfoundland during the colonial period. Through the study of these 17th-century traditions, evolving away from what we often see in the British Isles during the same time, we can gain a better understanding of the layout of British colonial settlements and the accessibility and agency of the dead within those spaces.

This project can be broken down into two mains goals: 1) a spatial analysis of the 17th-century British burial landscape in northeastern North America; and 2) the application of this analysis to the search for the 17th-century burial ground at Ferryland, Newfoundland.

1) The first goal was to examine the relationship between burial grounds and their associated settlements. I looked specifically at 17th-century British-founded settlements whose earliest organized burial ground(s) were known. For the purposes of this project, I looked at organized burial grounds and did not take family plots into consideration. Through a spatial analysis of the relationship between burial grounds and their associated settlements, a statistical frequency model was created with the goal of applying potential patterns in burial ground placement to the case study of Ferryland, Newfoundland. The

most frequent geographic and socially dictated placement of burial grounds was deemed the ‘popular’ choice by the contemporaneous communities, and this information was used to guide the search at Ferryland, by narrowing down excavation locations within the wider landscape. The outcome of this research can also be implemented anywhere within the survey area, to other similar settlements for which the location of the earliest 17th-century burial grounds are unknown, providing that they fit within the criteria of the research model.

2) The second goal was to apply the results of the statistical frequency model to the 1621 colony at Ferryland, in order to inform the 2016/2017 excavations in search of the lost early 17th-century burial ground. This burial ground is associated with the Calvert occupation period, dating between 1621 and 1637; prior to the 1638 arrival of Sir David Kirke and his family and the major changes he made to the physical and spiritual organization of the settlement.

This thesis is broken down into seven chapters which cover the major themes addressed by the research. Chapter one introduces the main themes and goals of this research project, and discusses the changes to burial practices in North America over the last several centuries. The importance of studying historic burial practices is explored briefly. It also discusses the issues of nomenclature that arise in this field, and lays out the decisions and definitions behind the terminology used throughout the thesis. These parameters are important, as there are many ongoing debates over the proper terms for burial spaces, both in historic and modern contexts.

Chapter two discusses the political and religious background of the research area, as well as the theoretical and methodological approaches employed throughout the project. The background begins with the Protestant Reformation in England as an approximate start to the forces at play in colonial North America. It outlines the ceremony surrounding burials in Catholic, pre-Reformation England, and how funerals, burials, and gravestones changed in the century following. The effects of political turmoil in the British Isles impacted North American colonies during the 17th century, and as a result is reflected back today, through the organization of settlements and their relationship with burial grounds. The theoretical landscape approach applied to this research, takes into account Ingold's (1993) concept of taskscapes and how a taskscape analysis of Ferryland allows one to consider different uses of space and how these spaces could be audibly as well as visibly perceived within the community and surrounding area. In addition, this section will touch on the methodological approaches applied to the research and fieldwork at Ferryland.

Chapter three outlines the history and organization of the 63 settlements in order to facilitate the creation of the statistical frequency model. A brief history of the founding of each settlement is provided, as well as the establishment and placement of their oldest organized burial ground(s) within their associated settlements. Mainland North America and Newfoundland are broken into separate sections, and arranged from south to north. Appendix A displays the data for the statistical frequency model.

Chapter four covers the statistical analysis of the 17th-century settlements, including the methods employed to create the statistical frequency model, the results of said model, and how these results were applied to Ferryland in order to narrow down

potential burial ground locations within the known confines of the archaeological site. The data is discussed in terms of use as a wide-scale survey and a regional-based survey, and how this information can be applied to future research within the project area.

Chapter five discusses the Ground Penetrating Radar (GPR) survey and fieldwork outcomes of the 2016/2017 seasons, laboratory analysis and a discussion of the fieldwork results. The details included in this chapter are especially important to the project, as Ferryland is the case study for the statistical frequency model.

Chapter six explores an analysis of the Ferryland gravestone fragments which forms a separate but related line of inquiry, for the stones' typeface and geology can shed light on where they came from and how they were carved. Geochemical analysis was carried out on the gravestones via pXRF and the results of these analyses are discussed in this chapter.

Chapter seven, the discussion and conclusion, sums up the results of this research as a whole as well as the outcomes of both the accuracy of the statistical model and the field excavation at Ferryland. The excavations at Ferryland, though unsuccessful in the search for human burials, greatly added to our working knowledge of the extent of the historic settlement and land use in the 17th century.

The burial ground is a fixture within any social landscape, regardless of the form it takes within different cultures. Organized or not, individual burials or shared tombs, a burial ground is a reminder of generations who have long since passed, and keeping them close allows people to maintain a connection with their former friends and family. Even though these spaces are slightly more marginalized today than they were 300 years ago,

the importance of engaging with a burial landscape is a significant and cathartic experience for many. While in many cases, historic burial sites were located near the centre of town in order to keep loved ones, as well as the church, close and in constant view, these sites were eventually relocated outside of town due to overcrowding, growing health concerns, and the idea that too much exposure to graves would make viewers too 'familiar' with mortality, and thus the feelings associated with that apparent reflection would not be produced. This 19th-century sentiment was expressed by Dwight (1800) when he passed through the town of Guilford, Connecticut, and with the increase in funeral professionals, death was removed from the home and the centre of the community to the outskirts. Today, the 'Death Positive[2]' movement in the West is attempting to bring death, as the last act of one's life, back into our minds as a topic that should be openly discussed, not shied away from. Being aware of one's own mortality, as the early settlers in North America demonstrated through the organization of their burial landscape, allows one to live a fuller life. Through my research into burial ground organization in the early day of British North America, I hope to not only shed light on certain trends and patterns between burial grounds and their associated settlements, but also to open a dialogue about burial landscape evolution and the way in which this has impacted how we act in and incorporate burial landscapes into modern settlements.

Overall, this research will expand upon our understanding of how European immigrants in North America interacted with death in a space unconfined by previous practices at the local community level. The patterns identified through the spatial analysis

[2] Term coined by mortician Caitlin Doughty.

shows that while the frequency model can be used to suggest potential locations for a lost burial ground, when combined with other sources of information about the site's layout and archaeological record, it is more useful on a regional scale. The study specifically conducted on early Newfoundland burial grounds shows that geography and growing folk traditions dictated much of the development of the burial landscape along the east coast of the Avalon Peninsula.

1.2 Terminology

This section provides an overview of the terminology used throughout the thesis and my justification for the use of specific terms in cases where several different words are commonplace. Terms were selected for clarity and general understanding. Words or terminology that will come up infrequently will be clarified in footnotes in their respective sections.

Throughout this thesis I will be referring to organized burial grounds as 'burial grounds' and anything else, such as a family plot, as a 'burial plot'. This includes the 'lost' burial ground at Ferryland. The terms *burial / burying ground, cemetery,* and *churchyard* are all used interchangeably in the present vernacular to refer to a place where a body or bodies have been buried. However, the terms have specific, if underutilized, meanings which do not necessarily overlap with one another.

The term *churchyard* is meant to define the area surrounding a Christian church. This space is often referred to as 'God's Green Acre'; in historic churches in the British Isles, the size of the churchyard often varies from a portion of the traditional acre to much more, such as St. Michael's, Lichfield, which encompasses seven acres (Rodwell

2012:296). The space is often enclosed by a wall, fence, or in some cases a road or path borders the space. Within this barrier is the consecrated ground in which the church has been built as a safe haven and place of worship, and is also where members of the congregation were buried. The consecrated ground is used both historically and in the present day to refer to the yard surrounding a Christian church.

Graveyard and *Cemetery* are often used in the present to refer to the same site, or are used interchangeably to describe a number of sites. In modern archaeological and historical parlance, the term *cemetery* refers to an organized burial space which is often not directly associated with a church, and can often be thought of as more of a municipally-run burial space. In fact, the term *cemetery* was not even in use in the 17th century, and only appeared as a term for a model of burial site in America during the first half of the 19th century with the construction of Mount Auburn Cemetery (in 1831) in Cambridge, Massachusetts, which sparked the rise of the "rural" cemetery garden in America (Linden-Ward 1989:293; Curl 2001:69-72; Baugher and Veit 2014:125-133). The changes in not only tradition but also in terminology shows a linguistic reflection of the changing burial practices associated with the colonial period, referencing the replacement of the disordered and "unsanitary" (burial grounds and graveyards) with the pre-planned and architecturally organized cemeteries (Baugher and Veit 2014:125).

For some, the word *graveyard* often conjures up images of morbid carvings on stones, and eerie trees leering in the shadows beside a darkened church. The term *graveyard* in itself, however, refers only to an organized burial space within the churchyard, as defined above. It is directly associated with a specific church and parish area, and will only be filled with members of that parish's congregation or others that

have been snuck into the soil. It meant, and still means, a sacred and respected resting place.

In the way that a graveyard indicated consecrated ground for religious burials, the term *burial / burying ground* was often used historically by settlers in New England and dissenters in the British Isles to reiterate the un-religious ceremonial nature of their lots used for burials (Hopkins 2014:15-17). These spaces, primarily spaces founded by Puritans in the New England area, were unconsecrated grounds used for organized burial of the settlers. By refusing to bury, or often even construct churches or have the grounds consecrated, the New England settlers in areas such as Massachusetts Bay and Connecticut were staging an obvious political and religious protest against the Church of England and the acting government at the time (Hopkins 2014:9-10). In the 17th century, burial grounds could refer to a general place for burial, but by going ahead and naming these spaces *burying ground* as is often seen on historic maps, the settlers in New England were making a statement, the motivation of which will be discussed in the background section of this thesis. *Burial ground* is not a perfect catch-all term to describe all burial spaces in the period, but for the purposes of this thesis, the definition is accurate to use as such.

While the many different regions of the east coast of North America and Newfoundland upheld many different burial traditions and practices during the 17th century, for the intentions of this research, I will only be dealing with organized burial grounds and graveyards from the settlements included within the study, and will not be taking into account private family burial plots located on private lands or potter's fields. When referring to an organized Puritan burial place, a 17th-century site that was

organized and used prior to the designation of a church on that land, or a potential burial ground of which the nature is not yet known fully, such as the site at Ferryland, I will be using the term *burial ground* to describe the nature of the space. If indicating a burial place which was directly associated with the immediate construction of a church and was consecrated, or in which burials around the church took place after the construction of the church, then I will use the term *graveyard* to indicate the nature of the space and its use. In using the word *settlement* I will only be indicating those created by immigrants originally of from Britain or Ireland, unless otherwise specified. This is not meant to downplay the occupation of these lands by the Indigenous peoples whose traditional territories were wrongly stolen and built upon by this colonialist architype, but as a means of streamlining the terminology used for the sake of this thesis. When Indigenous settlements are mentioned, they will be indicated as such.

Within the historical archaeology of burials, there has always been contention over what to call the markers over a grave, or the marker which is not over a grave, in remembrance of an individual. Anything from *gravestone*, *tombstone*, *gravemarker*, *memorial stone*, *mortuary sculpture*, *monument*, or *memorial* could be used to indicate the marker of a grave. While often encompassing the word 'stone', these terms are occasionally used to refer to sculptures made from metals or ceramics as well. For the purposes of this research, I will be referring to all such markers as *gravestones* unless a specific example arises which requires the use of another term. However, as most of the examples mentioned specifically in this thesis were made from stone, the term overall will be the most encompassing.

The most common gravestone lettering style in the British Isles is the ‘roman’ script. For ease and separation from ‘Roman’— the people / culture — the script name will be written in lowercase unless at the beginning of a sentence. This convention was suggested by Thomson (2009b), and ensures the easy distinction between the script and the people. The script style will be discussed later in the gravestone analysis section.

Throughout this thesis I will be using the terms *British Isles, British,* and *Irish* in order to denote the places where North American settlers and their decedents organized. The majority of the settlements discussed were backed by companies founded in England but were comprised of many individuals from Wales and Scotland as well, and thus are referred to as *British* in origin as the term today encompasses England, Wales, and Scotland. Thus, I refer to many settlements as *British founded.* However, the Irish also played a major role in the development and peopling of these colonial settlements and I will indicate this by noting that settlers were *British* and *Irish.* As a general term, I will often refer to the groups of people travelling to New England and Newfoundland as coming from the *British Isles.* This is for simplicity as the term covers not only the modern British countries, but Ireland and Northern Ireland as well. Saying that people came from the *British Isles* is meant as a catch-all term by using the name of the island group, and in no way indicates that people from Ireland are British.

Chapter 2

2.1 Religious & Political Background

2.1.1 *Pressures of change – Burial rites in Britain prior to the Protestant Reformation*

The way in which Western society views and interacts with death and burial traditions has always been in fluctuation, with different generations and groups altering traditions and introducing new practices to fit within with their world view. In the 21st century, we are witnessing a transition away from embalming towards more 'green' burial options, and the advocacy of family involvement in the death-care process. In the 16th and 17th centuries, personal involvement with the dead would have been regular practice, and the presence and awareness of burial grounds in proximity to daily life reflects this. Leading into the colonial period, Britain was undergoing intense turmoil which lead to the enactment of the Protestant Reformation, the Dissolution of the Monasteries, and ultimately the English Civil War in the mid-17th century. These events shaped the British Isles that we see today, altering relationships with politics, religion, and even the way that communities handled burial rites. In turn, the effects of these events can be seen in the way North American settlers created and organized their living spaces, and in turn their death spaces. The story of British burial landscapes can be explored from many angles and the forces which shaped the burial grounds of early 17th-century North American colonizers were ultimately the products, in part, of the political and religious changes in Britain and Europe leading up to and through the colonial period. In order to better understand this period, one must start by examining the practices which preceded the sites in question.

Death and commemoration were at the centre of medieval church life in Britain. With a high mortality rate, the death of friends and family would have become a regular occurrence for many people. In late-medieval Christianity (*i.e.* medieval Catholicism) the recent dead had agency over the living in two major respects: firstly, in the promised torment of purgatory, and; secondly, that the living and dead were all connected through the "communion of saints" and through prayer and thought had the duty to ease and shorten the suffering of the dead who were stuck in purgatory (Marshall 2002:7). Purgatory is where the souls of those who still had temporal sins to repent were forced to suffer and "await with certainty the glory to come" (De Voragine 1993:282; Marshall 2002:11). Purgatory became a main focus of the faith in the medieval period and rose in popularity to become a central theme in peoples' daily lives. A focus of the church doctrine, the effects of this mindset are reflected in the both the fabric of the church and churchyard within a community, and the way in which death and burials were approached and represented.

In the medieval period, one must first obtain a "good death" before the journey to purgatory (be it a concept or physical place) (Binski 1996:33; Houlbrooke 1998:183; Curvers 2010:9). This meant that one died at home in peace, surrounded by family, and in the presence of a priest who would absolve the dying individual of their deathbed confessions (Duffy 2005:314-316; Binski 1996:40). Dying well meant that the death was foreseen and prepared for, as an unexpected or violent death would be considered a bad death and potentially occurred due to interference from the devil (Curvers 2010:9). Once a good death had been achieved, it was important to keep the memory of the individual alive through prayer to lessen their time in purgatory, through the construction of

monuments and masses on the anniversary of the dead to speak of them (Harding 2003; Fossier 2010:135).

The stereotypical church and churchyard in the heart of the English village was very much a reality in this period, allowing interaction with a burial space as a normal and everyday occurrence. The need for salvation and absolution was powerful, and effected the placement of bodies in both the church and churchyard. Wealthy and powerful individuals were buried inside the church, which was far more expensive than the churchyard. The closer to the chancel and nave, the more prestigious your location. This placement of individuals shows a conscious display of families' connections with the clergy and the community (Harding 1992: 119; Harding 2003). An epitaph from the 18th century perfectly describes the pressure to place your body close to the altar, and the idea that perhaps placement did not matter as much as people thought it might:

> Here lie I by the chancel door,
> Here lie I because I'm poor.
> The further in, the more you'll pay,
> Here lie I, as warm as they. (Kingsbridge, Devon) Rodwell 2012:312

The preference for interment location continued into the late and post-medieval periods, but for reasons of status, rather than salvation from purgatory (Harding 2003).

Monumentation in the medieval period, meant to commemorate the dead, expressed the need for remembrance by not only family members but anyone who visited the grave. The traditions of aesthetic changed to suit economic changes but the message, for many years, remained the same: pray for the dead. Unfortunately many pre-Reformation monuments and gravestones were vandalized, destroyed, or lost in the years to follow, or were made of materials which did not survive the test of time. Monuments

which do survive today allow us a glimpse of the doctrine of purgatory are the monumental brasses, hard-wearing objects that can last hundreds of years providing they avoided the reformers. Brasses were cheaper than stone or alabaster effigies, and could be produced using general templates and smaller sizes, gaining popularity in churches by the mid-15th century (Houlbrooke 1998:344; Monumental Brass Society 1988; Duffy 2005:332). In order to suggest prayers for the dead, brasses would often depict one or more persons with their hands up in prayer, coats of arms, and sometimes inscriptions which asked the viewer for their thoughts and declared the needs of the dead. These images and requests for prayer were part of 'intersession', or prayers said to aid the dead through Purgatory. Occasionally, brasses would show shrouded individuals or decomposing bodies in order to invoke compassion (these designs can be found in the form of effigies as well, called cadaver tombs), and pity for those who had died and to pray for them while considering one's own mortality (Litten 1991 revised 2002:60).

Unlike today, the family and friends of the recently deceased were very involved in the funeral process in medieval Britain, washing the body and preparing it for burial. There was no embalming, and no cremation as the body was needed intact for the resurrection. Cremation was previously used in the British Isles, but with the introduction of Christianity, had been pushed from popularity and would not return until the late 1800s. The church was involved with the funerals, as bells were tolled for the deceased individual and a priest lead the solemn funeral procession and said last rites over the gravesite (Binski 1996:33-37; Curvers 2010:10). All of these rituals, however, were about to undergo a drastic transformation under the Protestant Reformation.

2.1.2 *Effects of the Protestant Reformation on British burial tradition*

The Protestant Reformation in Europe began in 16th-century Germany with Martin Luther and the publication of the *Ninety-Nine Theses* protesting the beliefs and corrupt nature of the Catholic Church (Hillerbrand 1968:xiv). Luther's ideas spread rapidly throughout Europe. The Protestant Reformation in the British Isles, while championed in earlier years by several individuals, was hallmarked by King Henry VIII's famous severance from the Catholic Church in an act of state, with support from the anti-Roman sentiment already brewing in the country (Powicke 1941:1; Hillerbrand 1968:xvii; Gaimster and Gilchrist 2003). Henry VIII passed an act in 1538 which required all parish churches in England to own a copy of the English Bible and to have it available be read by citizens, something which was previously not possible as texts were often in Latin and churches kept many aspects of the ceremonies out of sight behind rood screens. The monastic communities were disbanded in 1536 via the Dissolution of the Monasteries, in order to benefit from their wealth as well as crush any political resistance the powerful communities might exert over the government (British Library Board 2017). With these major changes to the religious organization of England came a radical shift in the way that death, dying, and the afterlife were perceived and enacted by members of the church and the general public. The fabric of the Christian church in England had been altered, and after King Edward VI's further reforms of what is now called the Anglican Church, came the destruction of sacred imagery, adornments, statuary, and rituals (Stannard 1977:106).

One of the main targets of reform through the Anglican Church was the removal of the idea of purgatory, as well as the idea that the living could have influence over what

happened to the dead, with regard to whether or not they went to heaven or hell. This came with a slow suppression of the now-banned intercession, and while a form of this practice could be seen as priests still spoke over the bodies at the grave site, the Book of Common Prayer never forbid the practice specifically (Gittings 1984:42; Curvers 2010:17). Other practices which brought attention to the dead were discarded as well for fear of a continued belief in purgatory, such a bell-ringing on a large scale, and long or extravagant processions (though these would still occur). Of course most of these traditions were hard to remove as they were so ingrained in social practices, especially in more rural areas.

Because of the changes to the fabric of the church as a result of the Reformation — such as the removal of the rood screens in order to make the ceremony more visible and accessible to the congregation, and the altars stripped and replaced with "communion

Figure 2.1: Many monastic buildings were destroyed during the Dissolution of the Monasteries, such as Tynemouth Priory pictured above. Photo by author, 2013.

tables" — one would expect that the burial placement within the church would alter as well, but this is not the case. Harding (2003) expresses shock in discovering how little the preferences and rituals surrounding the placement of the body had changed by this time. With the Dissolution of the Monasteries, the burial of individuals within living ecclesiastic communities stopped (see Figure 2.1), but peoples' preferences for burial location remained relatively the same; near the altar / communion table, and outside as close to the church walls as possible (Harding 2003).

Commemoration of the dead during the Reformation and indeed into the 17th century, was great affected by the changes to the official religion. Gravestones or other mortuary sculptures were not particularly common in organized burial grounds prior to the middle-medieval period, with gravestones and memorials being rare prior to the 12th century (Houlbrooke 1998:360-361), and few 'proper' gravestones have survived which date earlier than 1600 (Bartram 1978:1). Memorials and art works within churches were also the target of reformers seeking to remove aspects of popery from religious spaces. As the Word of God was meant to be worshipped in place of images and idols, sculptures, carvings, and paintings of saints and other figures in the churches were the target of iconoclasm, having the faces and heads scratched or torn off. This can be seen as a ritual killing of the individuals and during the reign of Mary I, with Catholicism reinstated, evidence shows that the focus of iconoclastic attacks was on Protestant imagery instead (Graves 2008:37). In the case of the shining monumental brasses, the metal was easy to remove and was often completely torn out of the stone ledgers, motivated by the banishment of intercessional practice (Monumental Brass Society 1988; Duffy 2005:494-495) and in many cases 'by financial greed, thinly masked by religious fervour'

(Hutchinson 2003:450). The monuments were often sold to be reworked into brasses for Protestant individuals, and the backs of some of these surviving pieces contain images from their earlier Catholic lives.

Monumental brasses and other forms of medieval grave markers did contain inscriptions, and prior to the Reformation the Catholic variety most often asked for the viewer to pray for their souls with opening lines such as "Orate pro anima" or "Of your charite pray for the soule" (Houlbrooke 1998:347). Once the reformers had their way with the formula of the epitaphs, the inscriptions turned away from prayer and as more and more gravestones survived with an emphasis on the written word, epitaphs spoke of the individual's life and family, their Christian values, or simply their names (Norris 1977; Houlbrooke 1998:35; Duffy 2005:332). We can see gravestones that simply start 'Here Lies the Body of' or 'This Stone Was Erected by' and mention a relation or only the person's name, age and date of death. This switch in inscription styles directly reflects on the way in which reformers were suspicious of all things popely, and tried to separate the church from worship of images and intersession. Many monuments and works of art were destroyed during this period, and into the 17th century as the official religious views of the country flipped back and forth for many years. It wasn't until 1560 that Elizabeth I decreed that there would be no more destruction of grave markers and monuments for both the continued honour of noble persons and public servants, as well as for genealogical information (Houlbrooke 1998:348).

The practice of being buried in consecrated ground was not an important or needed part of some reformers' burial rituals. While previously the body was required to be buried in land with close ties, both spiritually and geographically, to the holy space

that made up the church or chapel of the parish, particularly staunch reformers (Puritans) did not believe that this kind of sacred space was required for the disposal of one's earthly remains. As a result of the removal of purgatory from the belief system, and the idea that the prayers of the living did not aid the dead in the afterlife, neither did the placement in consecrated grounds. If you would not spiritually benefit from being closer to the altar, some dissenter groups thought it would be best practice to do away with the concept of consecrated ground, and move the bodies to grounds away from the churches. The changing ideas in the organization of burial spaces and the belief by some that religious ties to a burial space were no longer needed became one of the largest influences on the burial landscape in colonial British settlements on the east coast of North America in the 17th century.

The political and religious struggles in Great Britain came at a time of colonialism and conquest in North America, culminating with the English Civil War in the mid-17th century and the removal of the royal family from power. As a result, the layout of early settlements founded by the British in North America during the early 17th century mirror the struggles which were going on back at home.

2.1.3 *British North America in the early 17th century*

Throughout the Reformation, and the subsequent reigns of Elizabeth I and James I, the Protestant faith governed much of the British Isles, which resulted in Catholic spaces and individuals being targeted for religious persecution. The early-modern period in Britain was a time of turmoil, and religious prejudices affected the way in which early

settlers explored their relationship with burial landscapes that they themselves were newly creating in North America.

An excellent example of the changes that were taking place can be seen when comparing settlements founded and financed by the Massachusetts Bay Company and the Virginia Company. The Virginia Company was one of the first British economic business ventures into North America, most famous for financing Jamestown. The settlers at Jamestown were left with strict instructions on how to conduct their time in the area and organize their settlement. From the archaeological record, we can see that the relationship settlers had with the church was similar to that in a stereotypical English town; the first church was constructed in the centre of the 'town' and burials took place within the church (Kelso 2006:50; Jamestown Rediscovery). Of course, Jamestown saw many tragedies that lead to anomalous burial practices, partially influenced by a direct order to keep their dead out of sight of the Indigenous peoples in case 'they perceive that they are but common men (Virginia Company 1606). The settlers at Jamestown were Anglican, and held fast to their ties with Britain and a traditional relationship between the church and communal burial spaces. This is the case for the region through most of the 17th century, and the statistical analysis conducted in this thesis comes to the same conclusion. Such a relationship is expected, because of the political and religious foundations on which the early Virginia settlements were based, and is the opposite of what we see when considering areas such as modern-day Connecticut and Massachusetts.

The Massachusetts Bay Company had strong ties to the Puritan movement into North America, beginning with the establishment of the Plymouth plantation in 1620. These 'Pilgrims' (very strict Protestants) claimed to be fleeing England's Anglican rule,

for just as Catholics were persecuted for their beliefs, dissenters weren't granted rights to worship as non-conforming / non-Anglican Christians until the Glorious Revolution in 1688 and were not allowed funerals in churchyards until the Burial Act of 1880 (Sayer 2011:117). Because Puritan settlements in North America did not have to fit into already existent towns, settlers who were seeking a new start were able to mould their new home based on their beliefs. These beliefs included the spatial association between church, burials, and living quarters. In an effort to secularize burial rituals (and other rites such as marriage), the burial grounds established in many major centres of New England were municipal, accessible by all, and devoid of holy presence (Hopkins 2014:27). The burial landscape of New England was used as strategically as possible to rebut against the Church of England and their organization and cultivation of burial grounds as holy spaces.

Governor John Winthrop's final resting place was marked by civil, not religious, ceremony in 1649 as he was placed in the unconsecrated dirt of Boston's first municipal "burying ground" (Morton 1669; Hopkins 2014:15). Prayers were not said at his graveside, nor was he buried near a church altar as there was none in the city. He was honoured with an artillery salute befitting of his station and service to the city (Stannard 1977:110; Hopkins 2014:15), but religion took no part in his burial ceremony. The site, known to us today as King's Chapel Burying Ground, was in the centre of the city and was often used for grazing cattle. It would have been easily accessible as a public space, but not regarded with the sacred air that churchyards in the British Isles carried with them. Instead, when considering the 1645 Book of Possessions of Boston map, redrawn in 1881 by George Lamb, the city indicates a blasé reminder of the burial ground marked

only with a dotted line to indicate the boundaries of the land with no labels at all (Figure 2.2). This representation of the site is indicative of its separated nature from the church, as it had been present in the Boston landscape for 15 years already, and yet was only shown as a literal lot amidst the city. Later maps show this site and the other two burial grounds labeled as such, usually indicated on the map by their association with a church rather than as a simple burying ground.

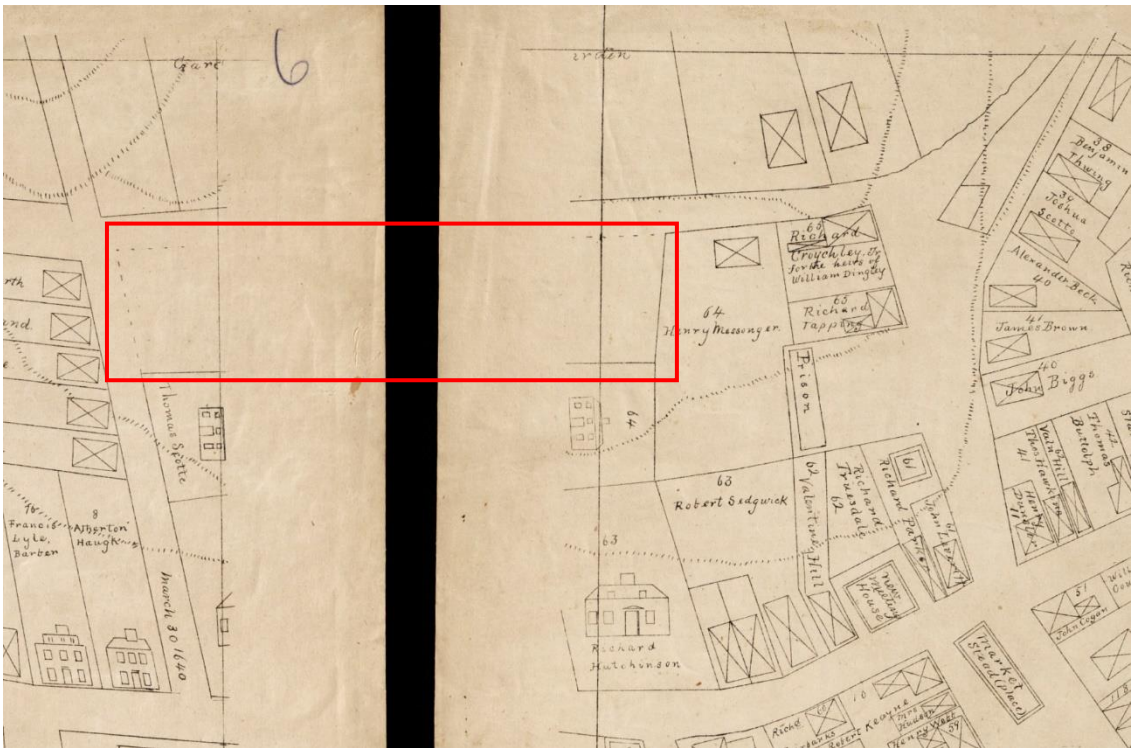

Figure 2.2: Section of sheet 6 and 7 of the Old Boston map from the 1645 Book of Possessions, redrawn in 1881 by George Lamb. The box indicates the unlabeled Common Burying Ground, now known as King's Chapel Burial Ground. Author located the site by using the prison as a fixed point, as it is unchanged and labeled on other historic maps
Map image courtesy of the Norman B. Leventhal Map Center at the Boston Public Library.

The association of burial grounds with churches is something that can be seen on the New England landscape in the later 1600s into the 1800s, as a part of the 'Anglican

Dominion of the New England Government' (Hopkins 2014:8). In 1686, The Anglican "King's Chapel" was constructed on top of a portion of the 1630s burial ground in Boston, much to the dismay and anger of the residents. The North Church was subsequently constructed adjacent to Copp's Hill Burying Ground in 1723, and the Park Street Church was erected beside the Granary in 1810 (Hopkins 2014:40). Events such as this occurred across New England, with historic burial grounds being re-associated with churches built on or near the property to establish control over the spaces. Sometimes this took the form of a meeting house, often created by Puritan settlers as a municipal space where town business could be taken care of as well as religious services, but these were often located on different land than the burial ground. If they were in the same space, as was the case in New Haven, Connecticut, the meeting house was usually built at a later date and the land had already been set aside for use as a burial ground.

Commemoration of the dead changed with the migration into New England as well, though, like their British counterparts there are not many surviving gravestones from the early period. The majority of what remains in early colonial burial grounds is represented by the late 17th century and through the 18th century, with examples displaying everything from death's head, cherubs, and portraits, to trees, broken flowers, and eventually more religious iconography (Figure 2.3). As mentioned above, the rise of Puritanism saw the removal of many funerary rites that had become engrained in British tradition. Religious practices were removed from the rites in parts of the New England colonies which were under Puritan rule in the early 17th century.

It has been said that around 1650, the funeral customs in North America began to diverge from those in Britain with new customs and traditions (Stannard 1977:109-117). I

would suggest that these traditions began the moment the British settlers began to create their settlements free from previously-existing European templates. The establishment of folk traditions are especially strong in places such as Newfoundland. The choices in burial ground placement and commemoration seen in this region also begin in the 17th century, with some of the earliest British and Irish settlements in North America.

2.1.4 *The British & Irish in 17th-century Newfoundland*

Before the island of Newfoundland was known to Europeans as a land rich in fish and timber, it was home to a number of Indigenous peoples (see Tuck 1976). The Beothuk people were inhabiting the island when it was first 'discovered' by Europeans (Marshall 1989), and records at the Cupids Plantation show that there was trade between the settlers and Indigenous peoples. Beothuk occupation is clear in the archaeological record long before seasonal fishermen were ever exploiting the area, though a relationship between the groups is not known (Pastore 1989:57; Gaulton 2001:20). While the

Figure 2.3: Colonial gravestones depicting a Death's Head (left, 1690, Boston, MA) and a Cherub (right, 1729, New London, CT). Photos by author, 2015 & 2016.

Mi'kmaq people reside in Newfoundland today, the Beothuk have been driven to extinction. It is important to recognize that settlers from the British Isles were moving into an environment where they were not the first people to exploit or inhabit these lands. What has been done to the Indigenous peoples by Europeans in Newfoundland and across North America as a result of ongoing colonization is something that we must work to bring awareness to and to stop, both as archaeologists and as citizens of a country founded through colonialist means on Indigenous, stolen territory. All of the settlements mentioned so far in this thesis, as well as the site histories which are described in a later chapter were created on land which was owned and inhabited by Indigenous groups who in most cases did not freely give up their territory, no matter what the 19th-century accounts of these events might say.

Prior to permanent European settlements, Norse sailors lived a few years at L'anse aux Meadows around 1000AD and seasonal fishers and whalers lived and worked on the shores of Newfoundland and Labrador since the early 16th century (Ingstad 1985). It was not until 1610 with the foundation of John Guy's plantation at Cupid's (Cuper's Cove) that the British attempted to colonize these rugged shores (Cell 1969, 1982). Ferryland was founded later, in 1621, as the dream of Sir George Calvert, the First Lord Baltimore.

George Calvert is well known for being a Catholic in a time of Catholic persecution and for his association with the development of British settlements in Newfoundland and later in what is today the state of Maryland. While it appears that Calvert grew up in a Catholic household, he converted to the state religion, Protestantism, from 1592 until 1624/5, well after the establishment of the Ferryland colony (Krugler 2004:69-76). While it is possible that Calvert retained his Catholic beliefs, all records

seem to show that while attending school and working for the government, he maintained a Protestant façade (Krugler 2004). Prior to the establishment of Cupids, Calvert had already shown interest in economic ventures in North America through investments in the Virginia Company and the East India Company. When he obtained territory on the Avalon Peninsula from Sir William Vaughan for which to establish his colony, it was seen as an opportunity to tap into the lucrative cod fishery and other natural resources that the area offered.

"*Feryland* is as pleasant and as profitable a Harbour as any in the Land" (Winne 1621 in Cell 1982:254). While this statement by Ferryland's first governor Edward Wynne conveniently left out the harsh reality of life on the east coast of Newfoundland, Ferryland was indeed ideal owing to its defensible location, sheltered inner harbour and proximity to nearby inshore cod stocks. The settlement was constructed quickly, and within a year Governor Wynne and settlers had constructed buildings and fortifications for the growing colony, as well as a cellar and the beginnings of a garden (Winne 1622). Their productivity may have been due to a predetermined plan for development, as well as a fear of attack which motivated the settlers to quickly create a safe and fortified area. In 1625, several years after Ferryland had been established, Calvert lost his high ranking position as Secretary to the British Government due to political considerations (Krugler 2004:69). Shortly afterwards Calvert announced that he had converted (back) to Catholicism (Krugler 2004:69). Sights set on Newfoundland, Calvert resolved to create a colony where religious tolerance would be exercised, and people of all Christian faiths would be able to practice freely. He first visited Newfoundland in the summer of 1627 and then returned in 1628, bringing with him many settlers of Catholic faith many of

whom were from Ireland. The effects of the ongoing religious turmoil in the British Isles were felt in Newfoundland settlements as well, through Calvert's own faith and the arrangement of his settlement. While residing at Ferryland Calvert allowed open practice of Catholic and Anglican faiths, something which angered some members of the colony such as Reverend Erasmus Stourton (Lahey 1998:29-31; Krugler 2004:97-99).

Archaeologists at Ferryland are currently unaware of any church structure having been built during Calvert's tenure of the Ferryland colony, and early documentation from Ferryland corroborates that no church was ever built in those early years (Cruse 1667 in Pope 1993). Instead, the Mansion House, built to accommodate Calvert and his family, was used for both Catholic and Protestant services and later acted as the hospital during the winter of 1628/29 (Calvert 1629 in Cell 1982; Lahey 1998). On the 1752 Hylton map of Ferryland, a small building located near the harbour (the Pool) but not within the area of the original settlement is marked as a church, but neither Calvert nor David Kirke later on was known to have built a religious structure at Ferryland. The lack of a strictly religious structure is important when considering the spiritual organization at Ferryland, as British churchyards were being removed as the norm in the British Isles as a result of dissenters and growing health concerns.

The disruption to what had become a British tradition is evident in many early colonial settlements. Whereas previously all Christians who were able (discounting suicides, lepers, burials at sea, etc.) were buried in consecrated ground in England, mostly beside or inside of a church, only 34.9% of burial grounds in the 17th-century British colonies surveyed on the east coast of North America had an established churchyard. Since we know that there was no religious structure at Ferryland, early settlers were not

concerned with burials in unconsecrated grounds. This may be a result of Calvert's attempt to create the first religiously-tolerant British settlement, as by not having a church, nor a consecrated burial ground, the space could be shared by members of different faiths. Whatever the reason, it has not survived in written records.

2.1.5 *Ferryland as a town and site*

Periodic archaeological excavations at Ferryland began in the 1930s, with Memorial University of Newfoundland beginning formal excavations in the 1980s. Early test results confirmed that the site was much better preserved than anyone had previously suspected (Tuck 1996:24). Today, Ferryland is a Provincial Historic Site and is seasonally opened to public visitation. However, there is currently no knowledge of where the colonists were burying their dead. There have been speculations as to where the 17th-century burial ground was located and a few tests units excavated in an attempt to locate the burials, but until the beginning of this research there had never been a large-scale, systematic attempt to locate the burial ground. Two interpretive signs near the modern kitchen garden and waterfront display an artistic representation of the site, showing the burial ground between the garden and the eastern defensive ditch. Miller (2013:370) suggests that evidence indicates that the burial ground is located directly south of the Pool, on the elevated terrace above the settlement, and that excavating to the east or south would most likely uncover the original burial ground. Further speculations place the burial ground within the walls of the Colony on the terrace south of the Mansion House (Gaulton 2012).

The only archaeological evidence of the burial ground was three gravestone fragments from two different slate gravestones. One was found in the bottom layers of the eastern defensive ditch and the second (two fragments, several meters apart) were associated with the renovation of the brewery and bake house (Carter et al. 1998:57; Gaulton 2006:88). Historical records also mention deaths at Ferryland in the 1620s. Calvert wrote during his first winter at Ferryland (1628-29) stating that "my howse hath been an hospital all this winter, of 100. persons 50. sick at a tyme, myself being one and nyne or ten of them dyed." (Calvert 1629 in Cell 1982). However Calvert did not specify what was done with the bodies of the deceased once the ground was thawed enough to bury them. Both Catholics and Protestants placed importance on burial of the physical body and commemoration in some way, and thus it is odd that no trace of the burial ground was present on the landscape. One possibility is that Sir David Kirke, who made it clear he did not approve of the Catholics associated with the settlement he eventually took over, may have eradicated the burial ground by ordering the smashing of gravestones and building over the area as it could be seen as a Catholic space (see Gaulton 2006:89-90). This sort of action would have been in line with monument destruction during the Reformation in the British Isles and thus would not be surprising if it can be proven. Another possibility is that the gravestones had been smashed during the Dutch or French raids in the late 17th century, but this would have resulted in the gravestones being found in a later context. The gravestones appear to have been deliberately destroyed by someone, erasing the presence that the dead had in the landscape, and the burial ground no longer exists in modern memory.

2.2 Theoretical Approaches

Two main theoretical approaches were employed in this research. The project was focused on historic landscapes and the investigation of spaces and spatial interaction, and therefore, unlike much excavation-based fieldwork, did not deal specifically with collections of material culture in the lab or in the field. Thus my research was informed by landscape theory (Anschuetz et al. 2001, see Francavaglia 1971 for burial landscape), and taskscape theory as described by Ingold (1993). Material culture did play a role in that a large collection of artifacts was recovered from the 2016 and 2017 excavations at Ferryland, however analysis of these objects was not vital to the completion of the project and will not be the focus of this analysis. Landscape and taskscape theories were chosen as a means of reflection and insight to inform both the statistical frequency model and the excavation at Ferryland.

2.2.1 *Taskscape Theory*

Ingold (1993) suggests that much like area-use analysis or the examination of areas travelled within a space, activities carried out within an area would create their own identifiable map made solely from said activities. These activities, considered audible, are separate from the landscape (visible), and are identifiable to us in the archaeological record through artifacts and other evidence such as botanical remains or soil stains. Hamilakis (2011:209) suggests a turn towards an 'archaeology of the senses', exploring ephemeral experiences once considered too immaterial for archaeologists to understand change across time. Taskscapes, with their auditory exploration, are considered an investigation of historic hearing and distribution of audible tasks, interested in the

development of the landscape as it was occupied and an understanding of it which cannot be expressed through a single static moment (Barrett 1999:24). This could be done through experiments, models, or farther down the phenomenological road, visualization and experience within the original environment itself. A burial ground exemplifies a cultural / social boundary which has been imposed by the living community upon their environment and their landscape, creating a space for the dead and in doing so promoting their visible segregation from the living. It also creates a visible way for their two 'communities' to interact with one another. A boundary in this regard, Ingold argues, is never something natural in the landscape but a concept imposed on an aspect of the landscape in "relation to the activities of people / animals" (1993:156) and a taskscape is consecutive with the act of dwelling (1993:158); thus the act of imposing a boundary area for the dead is in itself part of the taskscape of the burial ground.

2.2.2 *Landscape Theory*

Taskscapes are just one aspect of landscape archaeology, an approach to site study which has grown in archaeology. The accepted definition of landscape is something that is ever-evolving within the discipline, with new iterations being presented often. Ingold (1993) suggests that a landscape can only exist to those who have known it and lived within those experiences in that specific physical environment, while Bain (2010) states that landscapes are created by humans in environments which they alter to fit their specific needs, separating the 'landscape' from the 'environment'. Four principles of the 'landscape paradigm' in archaeology are presented by Anschuelz et al. (2001:160), breaking down the various components regarding landscape at nature, culture, or

somewhere in between. While the vernacular expresses that landscape is synonymous with the physical environment, I am exploring the concept through the idea that landscape is built by personal experience and thus cannot be recreated or experienced again in its entirety. One can view a particular landscape as a historic text, which embodies the activities of the people who once inhabited it (Jackson 1984; Anschuetz and Scheick 1998). However, this does not account for personal experiences, thoughts, and interactions that individual people may have had while encountering these spaces and thus the landscape may not always be something tangible at all but instead something which meaning is gathered from rather than attached to (Ingold 1993:155).

While processual landscape archaeology is sometimes criticized for being rigid and scientific, using aerial photography and mapping to present cases for the study of prehistoric landscapes and environmental features, particularly in Great Britain (Cunliffe 1983; Stead 1991; Feinman 2001:13937; Brück 2005), post-processual landscape archaeology takes a more experience-based approach with the ever controversial phenomenological studies. While a popular idea in post-processual British archaeology, phenomenology is often considered a way of "looking beyond the evidence" (Bender 1998:7; Fleming 2006) to gather a multi-sensory experience of a landscape. Latour (2005) said that when a theory borrows aspects of phenomenology, they also borrow all of its defects. As Thomas (1993:26) complained, traditional landscape archaeology approaches leave the people who lived there out of the analysis. When considering the evolving burial landscape, a space which inspires certain behaviours from individuals, phenomenological theory could be useful in emphasising the need to include cultural background and individuality when examining land organization (Anschuetz et al. 2001).

The phenomenological approach, though informative in some aspects, is often presented with a disregard to the changes a landscape may undergo over time, increased or decreased human interaction, personal interest or commitment to the area, personal senses, etc. The idea that one can experience the same landscape that someone 400 years ago did, in order to get a sense of the way life might have been like, how the ocean or a pot of cooking stew might have smelled, is not something that can ever be recreated, and thus purely phenomenological approaches would be inherently inaccurate and flawed. Despite Latour's comment on the matter, adapting the working aspects of a theory such as phenomenology combined with aspects of traditional landscape into a new approach is a way to remove the pieces which did not work in the first place. Attempting to people the landscape while not over-interpreting historic living conditions is a difficult task. One could not stand on the exposed 17th-century cobbled street with the salt air on your face and feel that you were experiencing that space to even a fraction of the same degree that Wynne and his first colonists did, nor the way that the Dutch did when they descended on the town years later, and standing in Calvert's Mansion House at Ferryland did not bring me closer to knowing what it was like to die in that same space during the winter of 1628-29. By looking through a traditional landscape archaeology lens for patterns occurring in the placement and orientation of burial grounds and their relationship with their associated settlements, as well as considering how the people who designated the area for burials considered death and their relationship to their burial spaces, a contemporaneous relationship with the burial ground becomes clearer.

2.2.3 *Taskscape & Landscape analysis at Ferryland*

The taskscape and landscape experience specific to the burial ground at Ferryland, Newfoundland is difficult to comment on as the location of the burial ground associated with the earliest occupation of the settlement is still unknown, however exploring physical, workplace, and domestic boundaries can help inform potential locations for the burial ground. A burial ground is an imposed boundary within a landscape, and acts as a liminal space within the settlement, a space between life and death, and a burial ground on the coast explores the duality of not only life and death, but living between land and sea (Fowler and Cummings 2003:10; Frieman 2008:144). While the concept of "islandness" (Frieman 2008:137) likely had not developed with the settlers at Ferryland in the first few years of occupation, the interaction with a seascape on such a scale would have had a major effect on the way that the people interacted with their new environment. Liminal spaces are often regarded as places of danger, where taboos need to be enacted in order to ensure the perceived safety of those within (Westerdahl 2010:280-281), and this concept of taboo can be seen enacted within burial landscapes through ritual practices both historically and contemporarily.

While excavating at Ferryland, I considered the activities that once took place at the site, their proximity to the burial ground, and the movements and sounds that these activities would have created. Imagining the burial ground as located inside the fortified settlement on the eastern side of the settlement, it would have been in the direct line of sight of anyone walking in or out of the eastern gates, keeping the burials and by extension, mortality, in everyone's mind. The 19th-century scholar Timothy Dwight argued that burials in the centre of town were depressing and unhealthy for the population

(1823), but this was not a popular view in the early 17th century, and thus this location would not have been unsettling. The surviving gravestone fragments at Ferryland indicate that commemorative memorials were being employed in the early days of the colony (Carter et al. 1998), and were most likely manufactured near the settlement rather than having been imported as later Newfoundland gravestones were (Pocius 1975, 1981). This indicated that there would have been a slate working area(s) near the early settlement. During the 2016 excavation we identified a 15 cm thick pile of worked slate refuse on the east side of Area 2 of the GPR survey in Area D which extended to the west across a 50 cm trench before petering out. The area directly to the west of this spot has never been tested archaeologically and may, through further excavation, prove to be a slate processing location for at least one structure. The sounds of slate tiles and gravestones being chipped and carved would have carried across the 17th-century landscape, and likely even across the water to fishing boats coming back from a day's work. If grinding and polishing sounds associated with finishing a gravestone's surface could be differentiated from the chipping of a slate tile into shape at a distance, it could instil a reminder that a grave was about to be completed.

The distance from the slate processing area is not far from the potential burial ground location, however the suspected slate sourcing location would have been quite the journey. The slate cutters would have had to either travel by foot along a sloped and rugged coast, or more likely by boat along the coast to the small cove north of the settlement, identified as a slate quarrying location by Gaulton (1997:30-31) and discussed later in this thesis. This space, more conspicuous from the sea adds to the duality of the seascape (Frieman 2008). Perhaps the quarry source was noticed from the view provided

on the water, rather than on land. Wynne had previously known about the existence of slate in the area, and considered that natural resource when choosing the locations of the settlement, evening going so far as to bring stone workers and slate cutters with him when settling Ferryland (Gaulton and Miller 2009:112). The sounds of cutting slate from the outcrop would have carried back across the harbour towards the settlement without the modern roadway clouding the soundscape of the coast. Even if it were a particularly misty day, the sound of tinging hammers on stone would reach far, and people would understand what jobs were being carried out, out of their sight. The progressively louder sound of oars or water against the bow of a small boat coming back to the waterfront would signal the completion of a job.

The forge at Ferryland was one of the first structures built at the colony in 1622 (Wynne 1622 in Cell 1982; Tuck and Gaulton 2003:194), and while many supplies were brought over from the British Isles at first, the forge allowed the colonists to become more self-sufficient. The sounds and smells of the forge would carry across the settlement, as the forge was within its fortified walls. As coffin use increased in popularity in all but the most impoverished burials in 17th-century Great Britain and colonial settlements in North America (Gittings 1984:114; Houlbrooke 1998:339, Litten 1992 revised 2002:86; Riordan 2000:2.3) it is likely that coffins were used at Ferryland for at least the wealthier individuals, and thus coffin nails would have likely been produced. Trees would have been cut and transported to the manufacturing location, likely near the settlement as well. The sound of shovels striking the rocky ground surrounding the Pool would have also carried across the settlement, and it is more than likely that digging grave shafts would have been a group effort due to the rocky, compact

subsoil. Conversations and shovels hitting rocks would carry across the settlement, and with such a small population in the 1620s it would be difficult for individuals to not understand what those sounds meant. Likewise, the sound of shovelling would carry across the water, and those in returning fishing boats would be able to gauge what was happening. Nine or 10 individuals died in close proximity to one another in the winter of 1628-29 (Calvert 1629 in Cell 1982) and were probably prepared for burial as soon as the ground was thawed. Interaction with death in such a small settlement would have been expected, and the burials of so many individuals would have involved the community.

The implementation of both taskscapes and traditional landscape archaeology approaches on not only the case study at Ferryland, but across the wider scope of this research amounted to a peopled and informed interpretation of environmental exploitation and use in early 17th-century settlements.

2.2.4 *Burial Landscapes*

Within the archaeological study of landscapes, the study of the burial landscape has been investigated for decades (Mitford 1963; Francaviglia 1971; Worpole 2003; Rugg 2013; Baughter and Veit 2014, and others). While Mitford (1963) spoke to the vacancy of thought on death in America, Worpole (2003:8) suggests that death is nothing but a poorly kept secret with the dearth of publications asserting that no one is talking about the subject. This may be the case in academia, but perhaps not within the general population. There is a disconnect between modern Western society and death, due to the systematic removal of death from the home over the last two centuries to modern sterile facilities that take care of these intimate procedures. More often than not, individuals are dying in

medical facilities rather than their own homes. Indeed, there may be a rise in the vocalization of modern death as a result of the progressive green burial movements and a public interest in home funerals (Citelli and Bretzel ND; Coeio: Infinity Burial; Undertaking LA; Urban Death Project). I would argue, however, that this is a progression in the visibility of the modern funeral industry, and thus our attention is being brought back to the grave, and with it, the burial landscape itself. In the 17th century, this disconnect between death practices and everyday life did not exist, at least not to the extent it does today, and thoughts of mortality were expressed through church services and memento mori images on graves. While there are limited surviving examples of stone mortuary sculpture in the UK that predate the Protestant Reformation (Bartram 1978:1; Mytum 2006; Thomson 2009), the use of memento mori imagery and text on gravestones pre- and post-Reformation indicate a continuation of the importance of death preparation during one's life. This translated onto the colonial landscape well as settlers were faced with new environments and unexpectedly harsh weather. Early American colonial burial grounds are famous for their images of grinning skulls and hourglasses, giving us the stereotype of the 'death-obsessed' Puritan, when in fact these images were simply a product of the cultural importance of remembering one's mortality, that one's time on earth was special.

As mentioned previously, a burial ground is a deliberate creation of liminal space, and is an area which has evolved spatially and architecturally, a "necrogeography" (Francaviglia 1971:501). In order to fully understand such a scripted, socially-rich landscape one has to involve not only the physical place but an examination of the historical sources and political context which the burial ground in question was developed

(Anschuetz et al. 2001; Rugg 2013:216). The landscape, in this instance, is made up of the environment, and the social, religious, political, and even economic pressures on the people who are invested in the space. For the purposes of this research, I will only be examining the British, Christian (Catholic and/or Anglican/Protestant) burial landscape in North America. The ideas of what would be appropriate for such a space have changed drastically throughout the centuries from carefully-articulated cemeteries such as Mount Auburn (Sachs 2010) back to the tightly-packed historic burial grounds of early 17th-century Boston, to the quintessential English rural churchyard, whose familiar design was the inspiration for many sites in Colonial America.

Because early 17th-century settlers in North America were constructing settlements on land which they considered empty, pre-existing templates of older British settlements were not present and thus did not affect, at least physically, the construction of the colonial settlements. While dissenters and other Nonconformists in England were awarded the freedom to worship in 1688 with the Act of Tolerance, it was still considered illegal for them to hold independent funerals in established parish churchyards (Houlbrooke 1999; Sayer 2011:115, 117). New World settlers were able to set out a relationship with their burial grounds free from the designs of a previous settlement, an allowance which would not be afforded in England until the 1832 Reform Act (Sayer 2011:115-117). Without constraints of previous British occupation, the relationship of the burial landscape and the settlement can be examined as a singularity; a fixed point in the social makeup of a society. While the churchyard burial ground does dominate the immediate image of a historic burial ground in the popular consciousness (Worpole 2003:63), this ideal shifted drastically in many colonial settlements. The analysis of these

landscapes through a traditional lens, combined with personal documents and accounts of the spaces themselves, provides a holistic view of the burial landscape as well as lays the groundwork for the creation of a statistical frequency model.

2.3 Methodology

This research project was broken down into two major sections: the creation of a statistical frequency model, and independent fieldwork which took place over two field seasons in 2016 and 2017.

Data compiled for the statistical frequency model was acquired from literary history and geographical sources. In order to determine the relationship between burial grounds and their associated settlements in Northeastern North America, historic maps from archival sources such as the American Library of Congress were examined for evidence of the original settlement structure and where the first organized burial ground was situated in that landscape. Historic documents, journals, and books were also included in the comparison between burials and original settlement organization. In order to gain geographical information on burial ground layouts, historic descriptions were compared against topographic data provided by Google Earth. By locating the sites on Google Earth and inspecting the location in street view with scanned topographic data, information regarding the geographic layout of the sites could be examined remotely. Many of the sites in the New England area were also visited in winter 2016 and spring 2017 in order to double check the accuracy of the topographic information provided by the Google Earth-aided analysis. This was important to the frequency of placement data, as understanding if the oldest portion of the burial ground was on the top of a hill or the

side overlooking the ocean could indicate preferred placement in the landscape, especially in Newfoundland. To compile the model, SPSS, a statistical analysis program was employed for frequency analysis as well as chi-square tests to compare variables. Microsoft Excel was also used to keep track of all spatial data prior to the statistical analysis.

Independent fieldwork was undertaken as a part of this research. Fieldwork took place over six weeks in 2016 and four weeks in 2017, excavating seven separate areas at Ferryland. Excavation was completed with the aid of a team of volunteers from Memorial University and interested community members. Shovels, trowels, and a mini back-hoe were employed to reach subsoil in order to check for grave shafts, as well as test the accuracy of Ground Penetrating Radar (GPR). Prior to the 2016 fieldwork season, GPR was used to examine 4 potential areas as suggested by the statistical analysis and the subsequent results were used to inform the 2016 excavation trenches. Thus, a portion of the excavation was also a useful way to test the accuracy of GPR in such an environment. GPR was not used to inform the 2017 excavation; the reasons for this will be discussed in Chapter. 5.

Chapter 3

3.1 Selection of Sites

3.1.1 *Site Choice*

Sites were chosen based on a number of specific criteria with the goal of creating a statistical frequency model to propose potential locations of unknown burial grounds in colonial settlements as well as identify patterns in regional and temporal burial placement within a cultural group. The sites selected for this study were established predominantly by British immigrants on the Atlantic coast or by a major shipping river and the location of their first organized burial grounds have been identified within the wider landscape of the settlement and surrounding environment. Special attention was given to settlements which had fortifications within the first few years of their establishment, as these settlements have the most similarities to Ferryland. It is important to note that a majority of these settlements were established on the traditional lands of many Indigenous groups, in what is now the United States and Canada. While historic documents often mention that the land was traded for honourably, this is almost never the case, and in the instance of sites like Jamestown (Kelso 2006) and Old Town Newbury (First Parish of Newbury 2016) the settlers would be under attack for years for imposing themselves on others' land. The sites explored throughout this chapter are organized from south to north, starting with Hampton, Virginia and ending at Trinity, Newfoundland.

3.1.2 *Mainland North American Settlements*

The settlements and burial grounds discussed below were used directly in the statistical frequency model. In the following section I provide a brief overview of 32 17th-century settlements along the east coast of what has become known as America, discussing the placement and relationship with 43 different burial grounds. Several of the settlements have more than one 17th-century burial ground, and while it was the main goal of this research to investigate only the layout of the first burial ground and settlement, in some cases, I felt it important to include other early burial grounds which represented the formative years of that settlement. It is worth noting that much of the history of these sites comes from historic texts, and that unless an archaeological excavation has been undertaken as it has in St. Mary's City, the information gathered was mainly sourced from histories of the towns. In these cases, I found it insightful to read the 19th-century historic texts as well as any modern works that could be obtained. In some cases, such as Guilford, CT, the first burial ground has all but been forgotten but history books on the town from the 19th century describe the site with the gravestones still standing and thus portray a more accurate understanding of the space.

While data for each of these sites was collected with the goal of creating a predictive model to be tested at Ferryland, it is important to take into account the religious leanings and political influence of the period. The majority of sites in Massachusetts did not have burials associated with a church, and while we know that there was no official church at Ferryland in the first few years, the reasons for not associating burials with churches in these locations were very different. When compared with Jamestown and Fort St. George (Popham Colony) however, one can see that burials were inside the

fortifications, but were also directly tied to a church structure, as these settlements were planned prior to the Puritan migration to North America, as was Ferryland. It has been determined that a higher rate of accuracy is achieved when one compares a site with an unknown burial ground to settlements in a similar region with the same religious, political, and social influences. These influences often impact the overall layout of a settlement, as well as the relationship with the dead as a part of that evolving landscape.

Hampton, Virginia – St. John's Episcopal Church

Hampton is the most southern settlement examined as part of this research project. Prior to the establishment of the town which became known as Hampton, Algernourne (or Algernon) Fort was constructed on what was sometimes known as Comfort Point (Davis 1907:23; Tyler 1922:13). Europeans moved to this area in 1610 in an attempt to start fresh after the disasters at Jamestown and took the land from Kecoughtan people after one of the settlers was killed. Soon after, settlement began along the banks of Hampton Creek, first known as Elizabeth City, and later became known as Hampton. The burial grounds associated with this settlement are widespread, and there are three historic sites which date to the 17th century, all associated with the first church in the area, St. John's Episcopal Church.

The exact location of the first parish church is currently unknown, and arguments persist over where it was built. The most popular theory places it near Church Creek, along the coast and potentially in the first major settlement area, but other arguments place it closer to the later settlement area (Nicholas Luccketti, personal communication 2016). Due to the lack of information on this site, it was not included in the statistical

model, however it is suspected that people were interred at this first church. The location of the second church is better understood, and was established to the east of the contemporaneous settlement in 1623/24. Through correspondence with Nicholas Luccketti of the James River Institute for Archaeology, I learned that excavations took place at this site in the 1960s, conducted by a branch of the Archaeological Society of Virginia, but no digital report of the excavation is available. The third location of the church, farther to the west of the settlement, was established in 1667, and there are burials associated with all iterations of this church and the progression of its cemetery across the landscape.

The second and third iterations of the First Parish Church have known burials in the churchyard, and are located on fairly level areas near the river. This follows the

Figure 3.1: Section of *Carte des environs d'Hampton*, 1781, courtesy of the Library of Congress digital map collection. Map shows approximate location of Hampton, VA, in the 18th century.

pattern of the early Virginia colonies staying to the English churchyard model, the already well-established rural church with graves both inside and outside in consecrated ground, clearly carrying these traditions and ideas of burial from their homeland (Worpole 2003:64-65). The settlement had forts nearby for protection, but for the purposes of this project was not fortified, it was not surrounded by its own palisade, ditches, or walls. A map from 1781 (Library of Congress 2016) marks the fort, renamed as Fort George by this time, but shows no indication of earlier settlements near Church Creek nor the later burial grounds in the existing settlement (Figure 3.1).

Jamestown, Virginia – Jamestown burial ground

Famously, Jamestown is known as the earliest permanent British settlement in North America, founded in 1607. The first few years at the colony were tumultuous and filled with suffering, with the Indigenous peoples attacking these invaders on their traditional lands (Kelso 2006:20-21). The first church was constructed in 1607 as one of the first buildings, and a second church was constructed in the centre of the fort in 1608 as a replacement after the first structure burned to the ground (Kelso 2006:24; Jamestown Rediscovery). While burials took place in many scattered locations in those early years in Virginia, organized burials also took place in and around the church, notably the four chancel burials within the church itself (Jamestown Rediscovery).

The lands around Jamestown are relatively flat, located close to the water in a swamp so the dead were buried on level ground, not elevated from the rest of the settlement. It wasn't until years later that people were interred on a large scale outside the walls of the fort, as the Virginia Company gave strict instruction to "not advertize the

killing of any of your men, that the country people may know it; if they perceive that they are but common men, and that with the loss of many of theirs they diminish any part of yours, they will make many adventures upon you" (Virginia Company 1606).

Yorktown, Virginia – Historic Grace Churchyard

Not an established settlement until 1691, Yorktown was preceded by the York-Hampton Parish. This area, now occupied by the Yorktown Coast Guard Training Centre, was the site of the first settlement and parish church in the area. The first church and second church structures were constructed in 1632 and 1667 respectively, and the second churchyard was confirmed by the surviving gravestone of William Gooch, dating to 1655 (Hatch 1970; Boyce and Kirkham 2016). When the town centre shifted in 1691 to its present location, records show that a lot was set aside for a new church to be erected at a later date (Boyce and Kirkham 2016). The settlement had some manner of fortifications shortly after construction, and the churchyard at the 3rd church location was elevated slightly within the settlement, where it can be seen today.

Williamsburg, Virginia – Bruton Parish Churchyard

Another famous early colonial settlement in Virginia, Williamsburg was founded in 1633 as Middle Plantation (Yetter 1988:14). Burials in Virginia often favoured family burial plots on private land in the early colonial days due to the spread-out nature of many early settlements (Colonial Williamsburg Foundation 2017), and in many locations one did not see organized burial grounds until later in the town's development. In the heart of what is now known as Colonial Williamsburg sits the Bruton Parish Church, established

in 1674 as Middle Plantation grew and became amalgamated with other parishes. Land was donated in 1678 by John Page to create the second Bruton Parish Church, which allowed for 60 feet of churchyard in all directions from the structure (Colonial Williamsburg Foundation 2016). The churchyard is roughly in the centre of the historic settlement, and was not elevated.

St. Mary's City, Maryland – Chapel Field burial ground

In 1629 Sir George Calvert wrote to the King of England, stating the discomfort and illness that had ravaged his settlers in Newfoundland, and his desire to relocate his settlement efforts farther south with a new land grant (Calvert 1629 in Cell 1982). Land was eventually granted in what is today Maryland, but the first Lord Baltimore would never make it down, dying at Lincoln's Inn Fields in London in 1632 (Krugler 2004:118). His son Cecil Calvert inherited the grants for Maryland, and wished the settlement to operate with religious freedom (Krugler 2004:118). The settlement was founded in 1634 and a relationship established with the Yoacomaco Indians who allegedly intended to abandon the land and thus were willing to trade it for European goods (Hall 1910; Krugler 2004:152). While the original fortified centre of town is still not known, in either of the proposed locations (Miller 1986; Riordan 1991) the burial ground and chapel would still be located outside of the fortified walls, slightly elevated compared to the rest of the land between the major river and Mill Creek (Henry Miller, personal communication 2015).

The burial ground went through several periods of burials during the 17th century, with the earliest burials occurring in the 1630s, likely around a chapel built by Father

Andrew White and was proceeded by the Brick Chapel, built prior to 1669 after the original chapel was destroyed (Henry Miller, personal communication 2015; Riordan 2000:1-3). Early burials were oriented east / west, but aligned more closely with first the priest's house, then the early chapel structure, and later with the Brick Chapel, suggesting the importance of the proximity of structures as well as keeping in the Christian tradition of grave orientation (Riordan 2000:3-4).

Baltimore, Maryland – First Saint Paul's Parish Churchyard

Established in 1660 along the banks of the Bush River (Henry Miller, personal communication 2016), Baltimore City was named for the Lords Baltimore to whom the land grant of Maryland was first given. The approximate location of old Baltimore Town can be seen on the 1670 Herrman map of the area (Figure 3.2), but the exact location is believed to be near the Aberdeen Proving Grounds, a military property, thanks to archaeological excavations which uncovered 17th-century structures (Henry Miller,

Figure 3.2: Section of 1670 Herrman map of Virginia and Maryland, courtesy of the Library of Congress digital map collection. Shows location of old 'Baltemore Towne', which coincides with suspected location of the original church. Baltimore is now centred near the area labeled 'Collets Neck'.

personal communication 2016). The church was said to be located on "Pettite's old field" and that all bodies had been moved to the relocated town by 1765 (Beirne 1967:6), however communication with Henry Miller and my own research would suggest that the moving of the church but not the bodies would have been more likely. The church in Baltimore, known as St. Paul's Parish, is a Protestant church which was one of the original 30 parishes drawn out for the colony, and is rumored to have been built near Colgate Creek in the 1690s (Henry Miller, personal communication 2016). The location of the original church is currently unknown, but the most popular spot was not on an elevated landform, nor was the churchyard located within any sort of surrounding fortifications as it would seem that old Baltimore Town did not have any. According to the records, the site did follow the typical English fashion of a church and churchyard, though its size and extent are unknown.

New Haven, Connecticut – New Haven Green burial ground

This settlement, famous for its 9-cell town plan with the popular New Haven Green at the centre, was established in 1638 on the land of the Quinnipiack people by predominantly Puritan settlers, as is evident by the relationship of burials to churches and meeting houses at the site (Sletcher 2004:11). The Green was originally known as the market place, which was established for such activities as well as for burials from the first days of the town. The Project for Public Spaces Inc. 2012 report in New Haven states that the first meeting house was established on the green around 1640, indicating that it was not associated with the space set aside for the burial ground two years prior. The 1806 Lyon et al. map of New Haven shows all buildings present in 1748, and shows only the

second meeting house, built in 1668 slightly closer to the burial ground, but still not part of that delineated space. It wasn't until the early 19th century that churches were built near or overlapping with the burial space, allowing it to be perceived as associated with a religious structure instead of the separated, Puritan grounds that was originally intended.

Today the burial ground is hidden in the Green, with all the headstones having been moved to the nearby Centre Church on the Green, but the bodies were not, and many remain below the Green today.

Wallingford, Connecticut – Centre Street Cemetery

Wallingford is a later settlement, established in 1667 along the Quinnipiac River in Connecticut, north of New Haven. The burial ground was established to the west of the original settlement area, which was located at the south end of modern-day Main Street, along the eastern slope of the hill (Davis 1870:78-79). The burial ground itself was not elevated from the rest of the settlement area, and was never associated with a church or meeting house. Wallingford was originally established as a primarily agricultural settlement and was not fortified.

Hartford, Connecticut – Ancient Burying Ground

The burial ground at Hartford, which still stands today in the centre of the city, though slightly impeded by buildings competing for space, was established in 1640. The original founders of the settlement were Puritan, as was the same for many settlements in the area, and thus the first meeting house was not built in association with the burial ground. In a map showing the early 1635 house lots, re-drawn in 1914, the "Meeting

House Yard" is shown already delineated within the settlement (Love 1914:11). In another re-drawn map by William S. Porter in 1838 showing Hartford in 1640, the Meeting House Yard is visible and surrounded by more plots as the town expanded. One lot to the southwest of the Meeting House reads 'Rich Olmsted: sold for Burying Plot', furthering the distinction between religious spaces and municipally run burying grounds. The first meeting house was constructed in the Yard around 1636 with a second meeting house later occupying the same area, and third and fourth meeting houses (the fourth being the present church) sit on a large portion of the burial ground, and was not completed until 1807 (Center Church ND).

Guilford, Connecticut – The Guilford Green Burying Ground

Guilford is a picturesque colonial town founded in 1639 with a "well preserved village green [as the] chief attraction" (Sexton 2002:1). Today, it would appear that the Green's use as the earliest burial ground is all but forgotten[3]. The early settlers were Puritan, and may have based part of their town plan on that of New Haven (Smith 1877:37; Bloomer 1994:58) with the open green in the centre for buildings, markets, and burials. No buildings were constructed on the Green for the first several years of the settlement, but as an unfortified farming community the settlers felt the need for protection and joined the already-established New Haven Colony for protection and were thus forced to build a meeting house to act as a church (Bloomer 1994:58). The meeting

[3] I visited this site in December of 2015, and found no sign post in the entire park that mentions its history as a historic burial ground.

house was built on the northwest corner of the Green in 1643, and was not originally associated with the burial ground (Bloomer 1994:58).

The Guilford Green is mentioned in the memoirs of Timothy Dwight, an academic, who passed through the settlement in the 1800s. He lamented that

> "this square, like that in New Haven, is deformed by a burying ground, and to add to the deformity, is unenclosed. Instead of producing those solemn thoughts, and encouraging those moral propensities, which it was intended to inspire it renders death and the grave such familiar objects to the eye, as to prevent them from awakening any serious regard…Nor is it unreasonable to suppose, that the proximity of these sepulchral fields to human habitations is injurious to health." (Dwight 1823)

Dwight's 19th-century views of placement of the dead are clear, and likely influenced the town's decision to erase the burials, with the headstones having all been relocated to a new burial ground farther from town by 1817 and the uneven ground was levelled by 1824 (Smith 1877:37-38; Bloomer 1994:60; Sexton 2002:4). The burials were not relocated (Dee 1998), as this was not a common custom for early colonial people.

East Haddam, Connecticut – Old Cove Burying Ground

This small settlement was founded along the Connecticut River in the 1670s and boasts an excellent example of a 17th-century colonial burial ground: Old Cove Burying Ground, located near the aptly named Graveyard Point (Slater 1987:155). This site was not laid out until the early 1690s, and has never been associated with a church or meeting house (Slater 1987:155). The burials are elevated from the original settlement area to the south.

Old Saybrook, Connecticut – Cypress Cemetery

Old Saybrook was established as Fort Saybrook in 1635, and while the Town Plat laid out by Lion Gardiner in 1635 shows a burial ground set aside (Cypress Cemetery ND; Roberts 1906:23), archaeological testing revealed that this area was not within the confines of the original fort, located to the north of the burial ground (Juli 1991:74). Saybrook was originally settled by a group of Puritans, and the original fort destroyed by fire shortly after being constructed (Gates 1931; Brainard 1961; Juli 1991:74). While Lady Alice Fenwick was buried in 1646 within the first fort's walls, this was not an organized burial ground so much as a monument to one woman, and she was reburied in the Cypress Cemetery in 1870 (Juli 1991:74). A map from 1793 shows the strip of land set aside for the burial ground, as does the Town Plat records from the 17th century (in Juli 1991:76), indicating that this burial ground was likely established shortly after European occupation began, and no records indicate that a church or meeting house was associated with the space.

Old Lyme, Connecticut – Meeting House Hill Burying Ground & Duck River Burying Ground

This settlement began as a portion of the Saybrook Plantation before separating as its own township in 1665 (Slater 1987:231). The Old Lyme settlement contains two 17th-century burial grounds. Meeting House Hill Burying Ground is located in the south of the settlement on the rest of a large hill, and was potentially associated with the first meeting house in the area, also built on the hill around 1668 (Hurd 1882:554). However there are not many records on this site, and it remains unclear whether or not the burials predate the

meeting house as one would expect to see in a Puritan settlement, or not. Duck River Burying Ground was first mentioned in 1720 when a reference was made to clearing the land for burials; it was also noted that there were already many burials present in the area dating to the 1670s and onwards (Pfeiffer ND:1; Burr 1968). The Duck River site is not associated with a church or meeting house, and is located on level ground near a swamp and river to the south of the settlement.

New London, Connecticut – Ye Antientist Burial Ground

The first home in New London was constructed in 1637, but the settlement did not develop until 1646 with the arrival of John Winthrop Jr. (Slater 1987:220). A space for the burial ground was set aside on a hill overlooking the harbour in the centre of the settlement as early as 1652. A vote was cast by the town the next year stating that "it shall bee for the Common Buriall place, and never be impropriated by any" (Blake 1897:37). The first meeting house, inside a barn, stood near the area used as a burial ground, and when the new meeting house was constructed around 1655, it was also located close to or on the burial ground lot (Caulkins 1895:108-109). It would appear that while the burial ground may have been established prior to designating the meeting house spaces, they were intended to be near or directly associated with one another. The founders of this settlement were Puritan, as were many of the other Massachusetts and Connecticut towns at this time.

Norwich, Connecticut – Ancient Norwich Burying Ground & Norwichtown Burying Ground

This settlement was established along the northeast bank of the Yantic River, to the northwest of the modern town in 1660, after land was obtained from the Indigenous peoples (Caulkins 1874:2; Slater 1987:225). The historic centre of town, marked by a unique triangular town green, was overlooked by the first meeting house perched on a hill to the north. The first organized burial ground dates around 1661, called the Ancient Norwich Burying Ground or the Post and Gager Cemetery, and is located on a sloped landform to the west of the original settlement. It began as a family burial plot with the death of Sarah Post in 1661, and continued to be used until the larger, more central Norwichtown Burying Ground was established in the late 1690s or early 1700s (The Edgerton Database ND; Caulkins 1874:130). The Norwichtown Burying Ground now sits hidden amidst homes and a derelict shopping mall. The earliest gravestones date to the early 1700s, and the plot of land was bought by the town specifically for the new burying ground (Caulkins 1874:128-129).

Newport, Rhode Island – The Common Burial Ground

Founded in 1639, Newport established its first common burial ground just north of the original settlement in the mid-1600s (Bayles 1888:142). The first home was built on Farewell Street, which runs through the expanded burial ground, the original location of which was on elevated ground (Bayles 1888:156). The historic centre of town, at one end of Broadway Street, can be seen on a 1777 map drawn by William Faden. The first

meeting house was constructed in 1699 near the burial ground on Fairwell Street where it still stands today (Bayles 1888:486), but was not originally associated with the space.

Little Compton, Rhode Island – Little Compton Common

The first European settlers on this land, originally inhabited by the Sokognate Indigenous people, were Puritans. In 1677 land was set aside for a common green in the centre of the settlement, and was intended for the first meeting house, the common burial ground, and an area where livestock could be grazed (Rhode Island Historical Preservation Commission 1990:7; Souza 2016). The town common still stands today in the middle of agricultural land on a slightly elevated landform which is surrounded by a low stone wall. Unlike Guilford and New Haven, Little Compton Common is still covered in gravestones.

Plymouth, Massachusetts – Cole's Hill & Burial Hill

Plymouth is famous for being the landing place of the 'Pilgrims' or the first Puritan settlers in the Massachusetts Bay area, in 1620. Cole's Hill was used as the first burial ground, located to the east of the original settlement, along present day Leyden Street. Today Cole's Hill is marked by a monument to the first European settlers who died in the settlement of Plymouth during the first winter. The earliest settlement, a fort, was constructed on what is now Burial Hill, and when the settlers moved off the hill and into the modern town centre in 1622 the hill began its life as a burial ground (Perkins 1902:9). A second meeting house was then erected on the southeastern corner of Burial Hill, with the bottom level being used for church services, and the upper level for

defensive purposes (Perkins 1902:9). Both of these sites were elevated from the rest of the fortified settlement, and neither of them were within the walls of the forts. Only Burial Hill was directly associated with a meeting house, and was located to the west of the settlement, where it is still located today.

Scituate, Massachusetts – Men of Kent Cemetery

The settlement of Scituate on the Atlantic coast, was settled in the early 1620s and land was put aside in 1624 for the Men of Kent burial ground (Deane 1831:115; Martha Lyon Landscape Architecture LLC et al. 2007:3). While both the meeting house and burial ground stood on what is now named "Meeting House Lane" near the centre of the original settlement area, the meeting house was not directly associated with the burial space, having been built across the street in 1636 when the settlement was incorporated as a town (Martha Lyon Landscape Architecture LLC et al. 2007:3; Carol Miles, personal communication 2015). The Men of Kent site is slightly elevated from the settlement, and while the settlement did have blockhouses similar to Plymouth, it was not surrounded by fortifications.

Boston, Massachusetts – King's Chapel Burying Ground, Copp's Hill Burying Ground, & Granary Burying Ground

Boston was founded with the backing of the Massachusetts Bay Company in 1630, and began what was known as the Great Migration into the Massachusetts Bay area. Lead by Captain John Winthrop, the Winthrop fleet brought a large group of Puritans who were looking for religious freedom away from the Anglican and Catholic

Church. The first burial ground, originally known as the Common Burying Ground, was established the same year as the settlement. This municipally owned lot became a standard example of Puritan burial practices, barren spaces not dictated by the church in England, empty of overt ceremony and association to religious structures (Hopkins 2014:15). The King's Chapel Burying Ground is scarcely present on contemporaneous maps, such as a map compiled from the 1645 Book of Possessions for Boston (Lamb 1881), where the burial ground is not labelled, but marked with a blank rectangle which stretches between two of the 10-cell map. While this site became the last resting place of Governor Winthrop in 1649, he was buried with civil, not religious honours (Morton 1669; Hopkins 2014:15).

When the first burial ground in Boston became too full, the municipal government created two new spaces for burial on public lands, one to the north at Copp's Hill, named for the family who owned the farm there, and one to the southwest of the Common Burying ground called The Granary. Churches were later built on or near these sites, giving the modern-day impression that these municipal burial spaces were actually meant to be churchyards directly associated with the Anglican Church. King's Chapel was constructed on top of a portion of the Common Burying Ground in 1686, and the North Church, famous for its role in the Revolutionary War was constructed near Copp's Hill in 1723, followed shortly by Park Street Church in 1810 adjacent to the Granary (Hopkins 2014:40). The three 17th-century burial grounds within Boston are all located on elevated ground and have been well preserved.

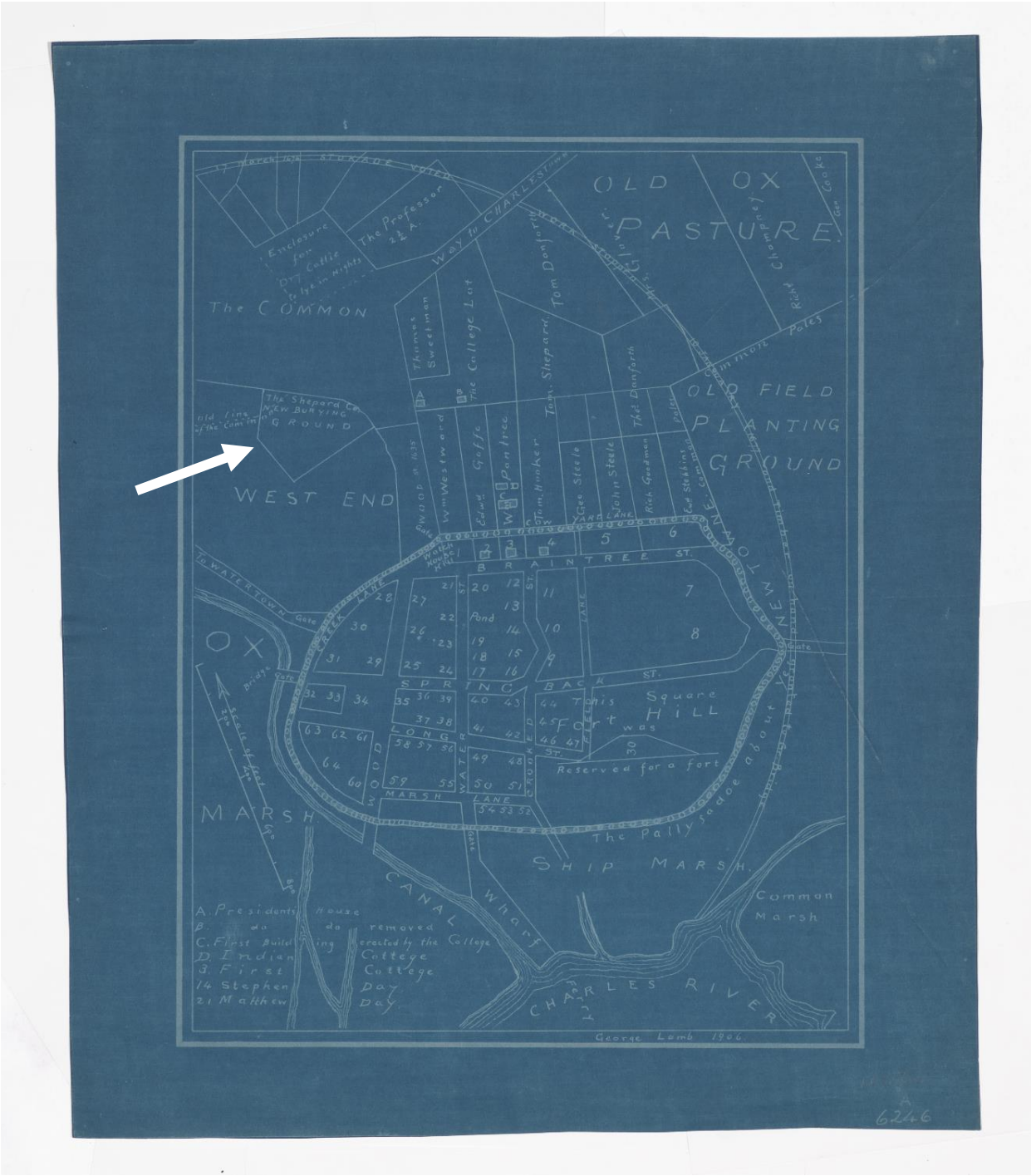

Figure 3.3: Map of historic Cambridge, re-drawn in 1906 by George Lamb. The image shows details of the two stages of fortifications, with the burial ground visible in the 'west end' indicated by the white arrow.

Map Image courtesy of the Cambridge Historical Society, Map and Plan Collection.

Cambridge, Massachusetts – Old Burying Place

Cambridge was settled not long after Boston, located to the northwest of the city, and was originally known as Newtowne. It was a fortified settlement, surrounded by a palisade which is visible in the 1906 George Lamb map, which he redrew from a surviving mid-17th-century map (Figure 3.3: Lamb 1906 provided by the Cambridge Historical Society; Warden 1976). According to the maps and records, it would appear that the town centre was fortified prior to the creation of the Old Burying Place, marked as "New Burying Ground" on Lamb's map, but was within the expanded defensive stockade, built later. Construction of this larger fortified space was halted in 1676/77, and it seems to have been left unfinished. As a result, the burial place was both outside and inside of the fortified area at different times. An earlier burial ground was established with the founding of the settlement, however its exact location remains unknown, beyond being recorded as "outside the common pales" (Paige 1877:20; City of Cambridge 2016). A meeting house was constructed in 1632, on present Dunster and Mount Auburn Streets near the centre of the village, which was near but not directly associated with the burial ground (Paige 1877:247; Norris 1933). A second meeting house was built in 1649/50, near Harvard Yard where a watchtower used to stand, and also did not directly associate with the burying place. The Old Burying Place at Cambridge was not located on an elevated landform, and was north / northwest of the original settlement.

Malden, Massachusetts – Bell Rock / Sandy Bank Cemetery

The Common Burying Ground at Bell Rock / Sandy Bank, today referred to as a cemetery, was established near the landing area on the western side of town in 1649, the

same year the town was incorporated as its own municipality (Corey 1899:102; City of Malden 2016). While the meeting house was constructed near the burying ground, it was not completed until after 1660, and thus, was not directly associated with the burial space (Corey 1899) Like much of the Massachusetts Bay area, the settlement was comprised primarily of Puritan immigrants who were associated with the Great Migration of the early 17th century.

Marblehead, Massachusetts – Old Burial/Burying Hill

Marblehead originated in the early 1630s as a part of the settlement of Salem, MA, only separating as its own town in 1649. The settlers at Marblehead were predominantly Christian, but did not follow the Calvinist Church (Goodwin ND: 16), and therefore it is not surprising to see that the first meeting house was erected in the same location which was chosen for the burial ground, Old Burial Hill. The meeting house was erected in 1638 and the burial ground was established the same year, on elevated land to the north of the harbour settlement. (Roads Jr. 1880:14).

Salem, Massachusetts – The Burying Point / Charter Street Cemetery & Broad Street Cemetery

Famous for its role in the Witch Trials, Salem boasts two surviving early 17th-century burial grounds in the centre of town. The Old Burying Point was established in 1637, and is the oldest organized burial space in the town. It was never associated with the first meeting house, which is to be expected in a strictly Puritan settlement, as the meeting house was constructed several years earlier in 1634, near the modern intersection

of Essex and Washington Streets to the northwest of the Burying Point (Salem Witch Museum 2016). Similar to Boston, the religious traditions had been all but removed from this burial space, and in 1637 additional uses of the space were permitted, including the construction of a windmill on a portion of the burial ground as well as using the area for cattle grazing (McAllister ND).

The Broad Street Cemetery was created in 1655 and contains the graves of individuals who lived in the "Witch House". It was located to the southwest of the first meeting house, which would have still stood at its original location at the time of this burial ground's establishment. Both burial grounds are slightly raised in the settlement, and neither site was marked on the 1692 map of Salem, redrawn by Upham (1866). If this was an intentional omission on the part of the 17th-century cartographer, it draws interesting parallels between the representation and cultural significance of burial spaces in the politics of the time.

Gloucester, Massachusetts – The First Parish Burial Ground

Listed on the National Register of Historic Places in America, the First Parish Burial Ground was established in the 1644 on the same grounds as the first meeting house constructed 11 years earlier (Pringle 1892:28; NRHP 2010). It is considered to be one of the last remnants of the original community, in which it was centrally located, though is now in the northwest portion of the modern settlement.

Ipswich, Massachusetts – Old North Burying Ground

The Old North Burying Ground was established in 1634 on the slope of a hill to the west of the original settlement (Waters 1905:13; personal communication Gordon Harris 1 December 2015). The meeting house was built approximately 600m southeast of the burying ground, and while it was likely established within the first year or two of the settlement, it has never been associated directly with the burial ground. This burial space is also famous for being the resting place of the wife of John Winthrop Jr, who died in 1634 and may be the first person interred in the grounds (Waters 1905:14-15).

Newbury (Old Town), Massachusetts – Burial Ground of the First Settlers & Old Town Cemetery

Established in 1635, Old Town Newbury is approximately 6km south of the present town of Newburyport, and was the original location of the settlement before moving north to the present location. The first meeting house was built on the Lower Green, near the first burial ground but established several years prior and approximately 450m to the south (Moody 1935; First Parish Church of Newbury 2016). The Burial Ground of the First Settlers to the north of the original town site in 1638, is barely marked today save for a small white sign beside the road (Moody 1935). It was established soon after the town, and neither the First Settlers nor the Old Town Cemetery is elevated from the rest of the settlement. The second burial ground was established to the east, and closer to the river, in the mid-1600s.

Portsmouth, New Hampshire – Point of Graves

First settled by Europeans in the 1630s, the oldest surviving burial ground in the city is named Point of Graves and was officially designated in 1671 near Strawberry Bank, where the first settlers built their homes (Pearson 1913:30,33; Keene et al. 1999). The 'ancient' meeting house was located near a milldam and while the exact location of the milldam and meeting house are unknown, there are no mentions of either being near a burial ground (Pearson 1913:27; Keene et al. 1999). The land for this burial ground was also used to graze cattle, similar to Guilford and Boston, and the entire settlement was protected by Fort William and Mary since the 17th century (Pearson 1913:53).

York, Maine – Old Anglican Churchyard

The settlement of York was established along the bank of the York River and was primarily comprised of those of the Anglican faith. An Anglican chapel and churchyard was constructed in York Harbor in the 1630s and the original settlement was located in York Village to the north. The Massachusetts Bay Company purchased the claim to the Maine territory in the mid-17th century, and a Puritan-style burial ground was established to the north-west of York Harbor (Emerson Baker, personal communication 2016).

South Portland, Maine – Old Settler's Cemetery / Thrasher's Cemetery

This historic burial ground was established around 1658, with the first European settlement of South Portland. It is near the ocean, to the east of the original settlement, and was resurrected for use each time the settlement was abandoned and resettled a few years later.

Portland, Maine – Eastern Cemetery

The Eastern Cemetery in Portland, Maine, is the oldest historic site in the city and was established in the mid-17th century (Trinkley and Hacker 2011:21-22). The location of the meeting house was likely nearby, but not on the same property as the burial ground as according to Trinkley and Hacker (2011:18), the only building that ever occupied space in the burial ground was the 'Dead House', or tool shed. However, this is still inconclusive as neither historic records nor church history seem to be aware of the exact original location of the meeting house. The site of the burial ground is located on a hill in the centre of the original settlement.

Fort St. George II / The 1607 Popham Colony, Maine

This colony was the first British settlement on the New England coast, paired with Jamestown in an attempt by the British to hold the entire eastern shore of what became the United States of America. The Plymouth Company constructed a fortified settlement on a point of land, which ultimately failed after a year of occupation (Brain 2003, 2016). While it is not clear whether or not individuals were interred inside Fort St. George, it is included in this model because of the detail with which the spaces were planned and laid out. John Hunt's famous and incredibly accurate map of the colony shows "the Chapell" in the centre of the settlement, elevated in comparison with the northern portion (Hunt 1607 in Brain 2003:95). The 2007-2013 excavations at Fort St. George II confirmed that the Hunt map was accurate in the placement of the chapel building but was unable to locate any human burials (Brain 2016:40). George Popham died at the colony and the church is a likely location for his remains to have been interred, and while current

excavations did not reveal his grave, a large rock feature nearby could indicate a potential above-ground winter burial (Brain 2016:17). Because the chapel space was planned carefully and accurately according to the reputable Hunt map, showing even the fence that would encompass the would-be churchyard, it displays the Anglican faith of the settlers who intended to stay longer than they did. It can be assumed that if the colony has survived for more than a year that the churchyard depicted would have been used for burials.

3.1.3 *Eastern Newfoundland Settlements – 17th and 18th Century*

Much of the literature on early European burial practices in eastern Newfoundland has been compiled by Gerald Pocius (1975, 1981, 1986, 1991), and focuses primarily on 18th-century to modern-day burial sites. This is due to the lack of available information on earlier 17th-century settlements in the area. Records of births and deaths were mostly not recorded as there were no churches or were lost to time or fires, and a lot of the time there were no monuments being placed that could orient modern people to the historic layout and use of the landscapes. These sites no longer exist on the present landscape, and tracking down their locations has proved to be a very difficult task. The Newfoundland sites discussed below were not used to inform the statistical frequency model as the only British site predating the settlement of Ferryland was Cupids, and the location of Cupid's 17th-century burial ground is also still unknown. This survey was meant to shed light on the earliest known organized burial grounds in sites that were, for the most part, established in the 17th century or early 18th century. Even if there are no surviving records or gravestones to corroborate the earliest dates associated with many early

Newfoundland settlements, the lack of early established churches and clergy members means that these 18th-century burial grounds were likely established at an earlier date and were used up until the church arrived.

Branch – The Old Graveyard

Branch was founded later than most of the sites in this survey, founded in the later 1700s by Thomas Nash. It was included because Nash originally landed on the Calvert (Southern) Shore in 1765, and would have seen and potentially been influenced by the layout and establishment of British settlements on the Shore prior to moving farther west to settle in Branch (ICH Collections 2016). The Old Graveyard is a designated municipal historic site and was donated to the town by Nash, a Roman Catholic, and thus it can be assumed that originally this site was Catholic (Parks Canada 2008). It is located on an elevated slope, facing the ocean.

Renews – Old Cemetery

While the earliest surviving gravestones at the Old Cemetery in Renews are from the mid-1700s, European settlement in the area had already occurred 100 years earlier. Sir William Vaughan obtained much of the Avalon in 1616, and established a small colony at Renews, governed by Richard Whitbourne until 1620 (Codignola 1988, Gilbert 2017). There was little success in this early British colony, and the area was used by seasonal fishermen on and off into the 18th century when a more permanent settlement was established. The Old Cemetery may only date to the 18th century as well, as there are no gravestones or records of 17th-century burials that have survived to modern day. The

burial ground is on raised land in view of the ocean, and was roughly in the centre of the settlement.

Port Kirwan – Old Cemetery

Like many European settlements in Newfoundland, Port Kirwan was first used by seasonal fishermen. The burial ground is located in the centre of town on a raised slope and faces the ocean, as is traditional for pre-church established burial spaces in Newfoundland (Pocius 1986). The oldest surviving gravestone belongs to John Commons, dated 1746, but it is likely that the burial ground was established earlier. Unlike the other carved gravestones at the site, the Commons stone appears to have been made from local slate.

Ferryland – South side / Old Non-denominational Cemetery & North Side / Anglican Cemetery

As Ferryland is being used as a case study in this project, the background of the settlement will not be discussed in depth in this portion of the thesis. Ferryland is one of the oldest permanently occupied British settlements in North America, and while the first European burial ground has yet to be identified, the town boasts two other historic burial sites. The first, the South Side cemetery is currently associated with the Catholic Church situated just north of this site, but was established prior to the church coming to this part of Newfoundland. Located on a hillslope with minor breaks in slope, it faces the shore to the southeast. The site was established prior to the mid-18th century, as records show that in 1749 a John White was granted land near the burial ground, and thus it was already an

established landmark by that point (NGB 2016). It is probable that while the settlement in the Pool area expanded in the mid – late-17th century that a larger burial ground could have been established off the Downs to facilitate not only the growing population of Ferryland, but the surrounding ports as well. The lower levels of the burial ground are marked with uninscribed pieces of local slate and as one moves further from the water, the gravestones with inscriptions have more recent dates, suggesting that the oldest burials were closest to the water. The landform appears to continue on the other side of the modern road, suggesting that when the road was put there some early historic burials may have been removed. While there is potential for this site to have been established in the 17th century, it would be difficult to tell without excavation. One of the oldest surviving gravestones is housed at the Ferryland Museum in the old courthouse, and once marked the grave of Sarah Carter who died in 1779, and appears to be the same make and material as a stone in the Anglican Cathedral in St. John's. These two stones boast a 'death's head' identical to some carved in Boston, Massachusetts around the same period and it is likely that these stones were ordered from that region.

The second burial ground is the North Side Cemetery overlooking North Point. This site was established in the mid-18th century and is also referred to as the Fox Hill Cemetery. It overlooks the water, and today is heavily over grown with wild rose plants and difficult to access. At the time of its creation, the settlement at Ferryland had pushed to the North Point, and this burial ground can be seen on the 1779 map of Ferryland North Side, which hangs at the Ferryland Museum.

Cape Broyle – Immaculate Conception Cemetery

Cape Broyle, a small town on the Southern Shore, did not have year-round settlers until the latter half of the 18th century. While the burial ground only has stones that date back as far as the mid-19th century, it is likely that this central burial ground was established not long after a permanent settlement was created in the area (Parks Canada 2006a). The name 'C. Broyle' can be seen north of Ferryland on the 1617 John Mason map.

Brigus South – Immaculate Conception RC Cemetery

A small, sheltered harbour has made Brigus South a popular location for fisherman for hundreds of years. The burial ground is located to the east of the centre of town, on an elevated landform which faces the water. The graves are all located on the slope, and two gravestones from the mid-18th century are still present. One stone appears to be made from limestone and was likely imported as people tended to do in this period (Pocius 1981), while the other, from 1750, is fragmented and delaminating and could be made of local stone.

Witless Bay – Old Witless Bay Cemetery

Sir John Berry's 1675 census recorded several families living in Witless Bay at the time of the survey, and the 4th English Pilot Book describes planters continuing to live in the 'Whitless Bay' area in 1689 when the first edition of the book was printed (Fisher and Thornton 1689:24). While the historic burial ground only has stones dating as far back as the 1800s, it has been suggested that the field stones , located in the

southeastern corner of the burial space may date back to at least the 1700s (Parks Canada 2006b). The older historic unmarked stones are positioned facing the water on the slope of the hill, with the more recent stones towards the top of the landform. This pattern is congruent with other historic burial grounds on the Avalon.

Petty Harbour – Old Anglican Graveyard & Old Catholic Graveyard

Petty Harbour has been known as a safe port and excellent fishing grounds for hundreds of years, and has been occupied by the British since the 1600s. John Berry's (1675) census recorded several individuals living in the area, but it would appear that there were no organized burial grounds in the settlement until at least the late 18th century when space for a church and burial ground were plotted (Chafe 2009). While the Anglican Church has had several iterations, it was not constructed until likely the late 18th century (Chafe 2009), and the graveyard has remained within the same approximate area on a slope to the south of the harbour. The Catholic burial ground was established at the latest, in the early 1800s, and was possibly created earlier, on the north side of the harbour. It originally stood close to the water, but was relocated to its present location as the town expanded. The space was built upon, and is now used by the Town of Petty Harbour / Maddox Cove and Municipal Museum (Ann Payne, personal communication 2016). Both of these graveyards are associated directly with churches, and were located on raised ground overlooking the harbour. The Anglican and Catholic spaces are mentioned here due to the divided presence of those two groups within the community.

Torbay – Old St. Nicholas Anglican Cemetery

Situated near the water on a rise of land as is typical in early Newfoundland burial landscapes, this site has been utilized for burials since at least 1674 when reports say a fisherman was buried there (Parks Canada 2007). Torbay is known as a historic fishing settlement and the early establishment of a burial site near the shoreline is not surprising. It is not likely that there was a formal church established in the first few years at the site, however, as the grounds remained unconsecrated until 1827 (Parks Canada 2007).

Brigus – Old United Church / Anglican Cemetery

There are, unfortunately, no 18th-century gravestones present at the historic burial ground in Brigus, although the site is located upon a major landform within the community. It is perched on a cliff to the east of the town, it dominates the seascape and the gravestones would have been visible by ships in the harbour. The foundations for the United Church were not laid on the property until 1796 (McGrath 2000), and while it is likely that people were interred in the location due to its prominent position and key characteristics in the Newfoundland burial landscape, there are no early gravestones or records to provide further insight.

Port de Grave – Assorted burial locations

Port de Grave is a unique site in the Conception Bay area, with no early historic burial ground. Instead, the settlers favoured the burial of their dead in family plots or in specific locations throughout the landscape, prior to the establishment of consecrated churchyards in the late 18th and early 19th centuries (Pocius 1975)

Bay Roberts – Wareham Lane Cemetery & Mercer Family Plot

The oldest burial grounds in Bay Roberts are located to the north of the original settlement on an elevated landform overlooking the harbour. The earliest headstones are dated to the mid-18th century. The Mercer plot, located slightly to the northeast of the burial ground, appears to date to the same time period, though may have been set aside as a special place for the Mercer family.

Harbour Grace – St. Paul's Churchyard Cemetery & Old Roman Catholic Cemetery

The first church in Harbour Grace was established in 1765 in roughly the same location that the modern church sits today (Pocius 1975:273), however the area had been used for settlement for many years prior to the formal creation of the church. The oldest surviving gravestones in the churchyard are on the slope of the lawn, overlooking the harbour, which appears to be a specific burial trend from the earlier colonial period and in some cases has appeared in the New England area as well.

The old Roman Catholic burial ground is less well known, but is directly across the road from the Anglican churchyard. The land was donated to the Catholic Church in 1799 to be used as a burial ground, but a church was never built on the same property as the burial site (Wells 1984). The oldest gravestones in this decaying space date to the early 19th century and it does not appear that there was an earlier organized Roman Catholic burial space in the area. The area defined as the historic district of Harbour Grace with a courthouse being built in 1672 near the present location of the National

Historic Site (Decks Awash 1982; Parks Canada 2005), placing both the historic burial grounds to the west of the town centre.

Carbonear – Bethany United Church Cemetery

Carbonear has been utilized by Europeans or hundreds of years, famously the residence of Nicholas Guy no later than 1631 (Guy 1631). The burial ground at the Bethany United Church is fairly central in the settlement, as indicated on the Laurie and Whittle map (1794), on an elevated landform. The oldest gravestones date to the mid-late-18th century and, like many of the other sites on the Avalon, are located on the slope of the landform overlooking the water with the more recent stones on the level area, moving away from the harbour. Records date the use of the site by the church back to 1765 (Bethany Unity Church ND), and there are no gravestones that date earlier than this; however, it is possible that this location was utilized by earlier settlers.

Bay de Verde – Old / Chapel Rock Roman Catholic Cemetery & Anglican Cemetery

The oldest gravestones at the Roman Catholic burial ground in Bay de Verde date to the early 19th-century, and the first church built on site in 1810 close to the harbour area (Bay de Verde 2016). The Anglican Cemetery, on the other hand, is perched across town on a very steep slope. It seems to be making use of any available space that a home or business could not be built on, and is near to the modern church but dates to the mid-late 18th century. The first recorded burial in the Anglican archives took place in 1770 but does not specify if that burial took place in this Anglican burial ground, or another earlier space that remains unrecorded (Trinity Anglican Church Records 1770).

Trinity – St. Paul's Anglican Churchyard

Unlike much of the Avalon Peninsula, church records for Trinity's first established church and burial ground have survived from the 18th century onwards. The first Anglican church was established on the present grounds in 1729, and death and burial records have been kept since 1757 (St. Paul's Anglican Church 1757-; Trinity Historical Society 2014). While it is located in close proximity to the harbour, the site is a traditional English church and graveyard, remaining on the same grounds since its establishment. The present church is the third on this site.

3.2 Discussion of Sites

While obvious patterns between the sites used in this study can be drawn without looking at the spatial data closely, it takes a more nuanced understanding of the backgrounds of the individuals who made up each settlement to begin to create a full picture as to their relationship with the dead, as well as many environmental factors, and how this might have affected the layouts of their towns. Political pressures, religious struggle, fear of attack, and relationship with mortality all affect the way that people create a burial landscape within a living space, and the way that they interact with and speak about that space with their peers.

While some books often suggest that in early America burials occurred beside churches in the centre of town, the results of the settlement study conducted for this thesis suggest otherwise (Dickey 2016; Spoelman and Haskell 2016:17). Many early settlements of British origin were moving away from a strictly church / churchyard model and established new traditions on burial grounds in unconsecrated spaces. Of course this was

not the case across the board and is by no means a blanket statement of what everyone did, or was capable of doing, but in many instances British were fleeing religious or political persecution in the British Isles and found an opportunity to express their relationship with death in a new kind of space. In a landscape that had no pre-existing Europeans settlements, and not established burial tradition that they were familiar with (*i.e.* the Indigenous peoples), they were free to create a new familiarity with burial landscapes as an active and engaging aspect of their growing settlements.

So called folk traditions surrounding burials grew strong in Newfoundland in the 18th century, and while every site was in view of the harbours almost regardless of where they were put in the settlement, the reoccurring trend of the oldest stones being closer to the water is universal throughout the sites surveyed. This lead to the tradition that the locals *had* to be buried overlooking the water, something that had become synonymous with previous burials in the region. While this tradition was less common in New England settlements, more sites were located on elevated grounds, suggesting that the practice may in part be culturally instilled, as well as for other practical reasons such as for farming, drainage, spirituality, or many other practical reasons.

It is clear, however, that many variables factor into where a burial ground was located and why it might have been placed there. Perhaps left up to chance, or superstitions that were never written down, burial ground location within a community does not follow one distinctive and predictable pattern that can be measured with statistical analysis without question. The burial landscape of colonial North America is rich and active, remaining an important aspect of early life for Europeans in North America and contributes to our understanding of how they lived and died in their new

environment. Conflicting political, religious, and personal views and ideas led to different burial traditions being enacted through various groups along the east coast in the 17th-century, leaving us with many different relationships between burials and settlements that are often still visible today, in some aspects. In the regions that are known today as Connecticut and Massachusetts, burial grounds were not associated with churches originally and were mostly placed in the centre of settlements, while people in Virginia kept their burials beside churches, also in the centre of their towns.

In the following chapter, I will discuss the statistical analysis of the sites surveyed for this research, and the ways in which this information can be used to gain a greater understanding of burial practices in early colonial eastern North America; furthermore this information can be used to understand not only a relationship with death, but a relationship with settlements on a broader scale. By looking through the lens of political and religious backgrounds that have affected the way settlements were constructed, a better picture of where burial customs of the 21st century came from will be constructed, as well as a more informed understanding of how people in the 17th century were using the landscape in life and death.

Chapter 4

4.1 Statistical Analysis

4.1.1 *Site Selection and Analysis*

A key objective of this research involved the examination of burial ground traditions and the spatial organization within settlements along the eastern seaboard of North America and the east coast of Newfoundland. Data gathered during this research would facilitate the creation of a frequency of traits model which would assist in identifying the most statistically likely locations for burial grounds in similar sites. This project was specifically concerned with 17th-century British founded coastal towns comprised largely by Christians (Catholics/Anglicans/Protestants/Puritans). These parameters were chosen in order to encompass the earliest colonial settlements along the eastern seaboard, as well as to examine Ferryland, Newfoundland as a case-study to test the frequency of traits model.

The sites selected for this research spanned from Hampton, Virginia in the south to as far north as Trinity, Newfoundland and were specifically chosen because of similar religious, cultural, and political backgrounds. The burial ground information gathered could be used to inform not only the excavations at Ferryland in 2016/2017, but also have the potential to inform the statistical probability of burial ground locations in other 17th-century settlements. Family plots were not analysed as a part of this study, as the goal was to focus on the first organized, community burial grounds, public spaces which everyone had access to, a view of, and an impression of throughout their everyday lives. The model can provide, when known attributes of the settlement in question are applied to the data,

the statistical likelihood of burial ground placement within that settlement. The compiled table is divided into two portions: 17th-century North America and; 18th-century Newfoundland. As a part of the search for Ferryland's burial ground, sites prior to 1700 were used and this only included one settlement from Newfoundland.

The 17th-century North America model includes 43 sites from Hampton, Virginia to the Popham Colony, Maine, with sites in Virginia, Maryland, Connecticut, Rhode Island, Massachusetts, New Hampshire, and Maine, as well as the site in Cupids, Newfoundland. The 17th-century French populations in eastern Canada and southern U.S.A., and the Dutch population in the Pennsylvania and New York State areas have not been included in this study. The majority of sites in the 17th-century model were founded in the early to mid-17th century, with a few later sites located slightly farther inland, on rivers that were part of major trade networks with the coastal communities. This time period was pivotal for the development of what is now the quintessential idea of 'colonial America'. New European settlements were created without the pressures of previous town design and overbearing political restraints keeping a group of like-minded people from organizing a settlement in a different way to reflect their relationship with church and state. Many of the settlers in New England and farther south used the colonial period as an opportunity to express their disdain for that closely linked relationship between the Anglican Church and government of their homeland to change the way that people would look at their towns for centuries to come. Puritan-founded settlements such as Boston, New Haven, and Guilford would defy the norms of the Anglican Church and use their dead as a political statement, separating the dead from the established church (Hopkins 2014); whereas more strictly Anglican-based settlements such as Hampton, Yorktown,

and Jamestown, Virginia, created traditional churchyards with burials near to or in the centre of town or in family plots. Earlier settlements with fortifications (*i.e.* completely surrounded by walls and/or ditches) were examined particularly closely in the comparison with Ferryland, as Ferryland was surrounded by both a wooden palisade and earthworks as reported by Edward Wynne in 1622 and supported by the archaeological evidence (Tuck and Gaulton 2003:190; Miller 2013:252). While the statistical model was run to look at different time periods and variable factors, the fortified early 17th-century sites were of particular interest.

By contrast, the Newfoundland model contains only 20, mainly 18th-century sites, due to the lack of surviving records and sparse population centres in the early 17th-century and into the 18th century. There are too few settlements pre-dating Ferryland in Newfoundland to provide burial ground spatial data that could be used to inform the search for the Ferryland burial ground. Presently, the 17th-century burial ground at Cupids has yet to be identified, showing that even with ample records in the early days of the plantation, it can be difficult to locate burials in a changing landscape. The 20 settlements included in the Newfoundland model are therefore from the 18th century, and are concerned more with presenting spatial data related to post-contact burial grounds from the period in the region prior organized Christianity with landed clergymen directing church communities and proceedings.

While there were temporary Anglican and Catholic clergy members at Ferryland in the 1620s, the first permanent clergy member did not arrive in Newfoundland until the 1800s (Pocius 1986:26). Prior to organized and regulated churches, Protestants and Catholics in Newfoundland continued with traditions brought over from Great Britain and

Ireland, as well as arranging the burial landscape in ways guided by what are now considered as 'folk traditions'. The sites selected were chosen based on the presence of early records stating that they had been inhabited since the mid to late 17th-century, and while the burial ground may not have records dating back to that century nor grave stones from the period, it is highly probable that these burial grounds were used prior to the date of their oldest gravestones. The sites are predominantly located on the Avalon Peninsula on the eastern most coast of Newfoundland, as well as in Conception Bay, and the town of Trinity, located off the Avalon but included in this study as it was occupied by the British since the 1600s (Handcock 1996). The data from this model was not used to inform the Ferryland case study, but lends itself to the study of landscape exploitation and traditions in early British and Irish Newfoundland settlements, complimenting Pocius' (1975, 1981, 1991) studies which investigate folk traditions and grave markers on the Avalon Peninsula. The Newfoundland sites model will help facilitate a more comprehensive examination of the burial landscape during the developmental period in Newfoundland's European history, and could in fact aid in the future when examining other under-researched settlements.

In order to analyse the settlements included in the model, I employed multiple forms of sources including making use of digitized archival documents, historic maps, academic papers, as well as satellite imagery and topographic data provided by Google Earth Pro. The importance of digitizing archives and museum collections must be championed, as it allows access to such materials for all researchers to explore and examine. For example, organizations such as the American Library of Congress and Archives.org have hundreds of historic maps and books available online, and was

advantageous for the success of this research. I examined the earliest maps of the settlements, when available, to gain an understanding of the original layout of the settlement, and where the burial ground had been placed or planned to be placed in relation to the beginnings of the settlement. Many early colonial settlements were planned, such as the famous example of Jamestown with strict rules provided by the Virginia Company as to what they needed to be built and where within the first few years (Kelso 2006:12-14).

When maps were unavailable, burial grounds were located through contemporaneous correspondence, journals, or historic books from the 1800s which discuss the origins of a settlement but were not so modern as to have forgotten where the first settlers were buried. When the burial ground and original town locations were identified, the location was paired with modern digital mapping on Google Earth Pro, for the purposes of obtaining information about the current geographic location of the burial ground, whether it was originally inside or outside any fortifications, etc. Topographic data was tested on a mostly remote basis, by employing the 'Ground-level view' function on Google Earth, which allows one to move around the landforms which have been scanned by the same satellites used to collect the top-down images. This function allowed me to remotely experience the burial landscape to a certain degree as it exists today, and record whether the burial ground was elevated from the settlement, and if the first burials were on a slope or a flat landform. Of course, without a written description or accurate images, there is no way to be 100% certain that the shape of a landform has not been drastically altered over 400 years, but in many cases historic burial sites have been left relatively untouched by development as they are seen as memorials to colonial forefathers

and therefore sacred spaces. Many of the sites in Newfoundland, Massachusetts, and Connecticut were visited in person to confirm the accuracy of the topographic Google Earth data, and on all accounts this data was found to be accurate. This application of digital technology to what could be considered traditional landscape archaeology (*i.e.* aerial photography and cartographic analysis of space use) is representative of the uses of this technology in the modern archaeological practice.

4.1.2 *Frequency of Burial Ground Traits Model*

The model was made using a combination of visual spatial data collected through historic maps, documents, accounts, and mapped using Google Earth Pro. The data collected was based around a series of questions which were answered for every site included in the study. This ensured standardization across sites. Along with site name, location, and year of burial ground establishment, the following questions were used to organize the information:

- Was the site surrounded by fortifications? (yes / no)
- Were the burials inside the fortifications, if the settlement was fortified? (yes / no)
- Was the burial ground associated with a church or meeting house? (only if a church was built first and *then* burials were placed in and around the structure) (yes / no). This does not apply if a church or meeting house was built on the burial land after the ground had been established.
- Was the burial ground elevated from/within the original settlement area? (yes / no)

- Was the burial ground located in the centre of the original settlement area? (yes / no)
- If no to previous question, roughly what cardinal direction from the settlement was the burial ground located? (north / south / east / west)
- Was the settlement located on the Atlantic coast? (yes / no)
- If no to previous question, was the settlement located on a major river? (yes / no)

Information was entered into an Excel spreadsheet to better visualize the data as well as into the Statistical Package for the Social Sciences (SPSS) to run descriptive and cross-tabulation analysis. If the data was unknown, it was entered into both programs as a missing value.

4.1.3 *Results of Statistical Analysis*

The end goal of the data collection and analysis was to aid in choosing locations to excavate in search for Ferryland's burial ground. Descriptive analyses were run in several different groupings of sites, selected based on their years of establishment and in some cases the existence of fortifications. Because Ferryland was founded in 1621, looking specifically at sites founded around that time period was the most obviously place to start. I was primarily concerned with attempting to locate the burials associated with the earliest period of occupation, which was led and financed by George Calvert. Calvert abandoned his Avalon colony in 1629 and David Kirke arrived in 1638. Unfortunately there were only eight fortified settlements in the survey that fell within this pre-1638 range, and only six had information on whether burials were within the fortifications or

not; therefore, any statistical analysis on this subset of data would be invalid as the sample size is too small. Descriptive analysis is better suited to these samples. I examined all 43 pre-1700s settlements and ran frequencies on all the variables and cross-tabulations of all the variables, such as if the settlement was fortified or not, as fortifications were a major construction aspect at Ferryland and therefore would be a defining characteristic in the placement of the burial ground. Results are shown in Tables 4.1, 4.2, and 4.3.

The results show that 76.7% of the settlements surveyed were not fortified, and the remaining 23.3% were surrounded by fortifications. This plays to the development of a colonial power along the Atlantic coast of North America. When looking only at fortified sites prior to the 1700s, the results show an even split, with 50% of burial grounds located within their fortified settlements and 50% outside. It is interesting to note that there is also an even split between association with a church in fortified settlements. This could indicate the desire of some settlers to separate the Church from other parts of life, while settlers in other areas tried to uphold their Old World traditions of faith. As well, an increase in popularity of unconsecrated burial grounds over that of the traditional Anglican churchyard could contribute to this split. Fortified or not, a greater percentage of burial grounds were elevated from the town (66.7% for fortified, 63.6% for not fortified). In terms of direction of the burial ground from settlements, fortified sites had 33.3% in the centre, 33.3% in the east, and only 11.1% to the south, 11.1% to the north, and 11.1% to the west. Non-fortified sites showed 43.8% in the centre, with 18.8% to the north, 15.6% to the west, only 12.5% to the east, and 9.4% to the south of the settlement. It is interesting to note the shift from predominantly central or eastern burial grounds in fortified sites, to a focus on central sites in non-fortified settlements. It is also worth

noting that a higher percentage of fortified settlements are located facing the ocean rather than along rivers (see Table 1).

The above analysis of this dataset did not lead to a definitive result for predicting the location of a burial ground. Clearly there are other factors involved. While this does speak to humanity's agency and indicates that humans will likely do whatever they think is best for their current situation (including the burial of their dead), these results are also affected by the different groups of people who founded the settlements and how their beliefs influenced the placement of not only their dead, but the settlement which would have grown around them. This model looked specifically at British-founded settlements, made up of settlers predominantly from England, but including Wales, Ireland, and Scotland. Due to the economic backing of these early colonies from such business ventures as the Virginia Company, the Massachusetts Bay Company, and individuals such as Lord Baltimore himself, we expect to see a predominantly English influence on these settlement landscapes first and foremost. However, this does not mean that all individuals creating these settlements came from the same political or religious background as their neighbours. The Massachusetts Bay Company's establishment of Boston, governed by Capt. John Winthrop, sent predominantly Puritan settlers across the Atlantic, similar to what had occurred with the nearby settlements of Plymouth, New Haven, and Guilford, to name a few. These settlers had a vastly different idea of how to treat the church, the dead, and settlement, and all aspects of daily life and organization of said life compared to that of the Virginia Company in their creation of Jamestown, or later settlements in the Virginia area such as Williamsburg, Yorktown, and Hampton – all of which clung to the more traditional church and churchyard method of burial. Analysis

of sites in Massachusetts showed that it was less likely for settlements to be fortified, with 80% of sites surveyed having no fortifications and 20% having fortifications, and 100% of burial grounds were outside of the fortifications at these sites, with one unknown. Only 20% of the Massachusetts burial grounds that were surveyed were associated with a church, and this is unsurprising considering the history of the region. In addition, 40% of burials were in the centre of Massachusetts' settlements, with 33.3% to the north, 20% to the west, only 6.7% to the east and none to the south.

Connecticut is similar to Massachusetts, with 90.9% of sites surveyed not having fortifications, and only 9.1% having fortifications at the original settlements. Again 100% of the burial grounds were outside of any fortifications present. Only 18.2% of burial grounds in surveyed Connecticut settlements were associated with churches, and 45.5% of sites were located in the centre of town, with 27.3% to the south, 18.2% to the west, 9.1% to the north, and none in the east.

Settlements in Virginia, on the other hand, are found to be fortified more frequently at 40%, to 60% unfortified. In this region, controlled by the Virginia Company, 40% of burial grounds were placed within fortifications, and 100% of sites were associated with churches from their early days. This also results in 60% of the burial sites having a central location, with 20% to the east and 20% to the west, in the least spread out of all directional results in this survey. This could be a manifestation of the traditional English churchyard and settlement structure that was attempted in the Virginia colonies, as a central churchyard is a common sight in medieval structured towns in the British Isles, and east and west both hold significance in Christianity (see Table 2).

At Ferryland, the population was largely Anglican, with a few Catholics in the group after Calvert brought Irish Catholics with him in 1628. The settlement was fortified in the early days as indicated by both historical and archaeological evidence. It is likely that Governor Wynne decided where to build the walls shortly after coming ashore, and thus the placement of burials in or outside of these walls – whether they had been built yet or not – would still be a factor in the placement of the burials since they *were* to be there shortly. If there were undocumented lives lost in the early days of settlement at Ferryland, the soon-to-be completed fortifications would have been one of the variables effecting the placement of the burial ground, as it would be for any colonial settlement, though less influential than I previously assumed. At Jamestown, the first to die were buried with vague semblance to the Christian tradition against the walls of the settlement until eventually a church was constructed and burials took place within (Kelso 2006:50). Here, settlers were confined due to attacks from Indigenous people on the compound which had been constructed upon arrival, and had strict orders to hide their dead from the Indigenous peoples so burials were not placed outside the walls. Many settlements, however, did not have this external pressure and were able to consider whether they wished to place burials inside or outside the perimeter of their settlement, regardless of fortifications.

An analysis of the Newfoundland sites revealed no major surprises (see Table 3). Fortifications account for only 5% of the surveyed settlements, and 100% of the burials were located outside the fortifications, with one site being marked as unknown[4]. Elevated

[4] The unknown site in this case is Cupids, as the 17th-century burial ground has not yet been located, but is known to exist through records of individuals' deaths in the early days of the plantation. Several burials and

sites accounted for 94.7% of the burial grounds, something which was expected, as this became the tradition for burial placement on the Newfoundland landscape, and only 30% of sites were associated with a church originally. This was not surprising, as many burial grounds in Newfoundland were established as unconsecrated ground for the community well before the arrival of clergymen and organized faith on the island. The placement of burial grounds in a Newfoundland context is less specific than those seen in Virginia, with 31.6% located centrally, 22.1% to the east, 21.1% west, 15.8% south, and 10.5% north. This might have more to do with the position of the settlement around the harbour than actual choice of the settlers, as the harbour in many of these outports was the focal point of the community's livelihood.

As the statistics show, elevated burial ground locations are more popular for both fortified and non-fortified sites. This could be strategic for a number of reasons: higher elevation provides better drainage in rainy areas and keeps graves from flooding, the land on hilltops is less desirable for farming or for buildings but is a perfect place to bury the dead. In Newfoundland specifically, the tradition exists that the dead need to face the ocean where they worked, and were thus buried on hilltops (Pocius 1986:27). In Ferryland, the majority of the known 17th-century settlement is located at sea level or just above, in the area known as the 'Pool', with unexcavated, elevated landforms to the east and south. It is also worth noting that the settlement sits on a natural slope but that most of the town was built and organized on two main terraces/levels, the lowest terrace containing the waterfront buildings and the upper terrace many of the domestic structures

gravestones have been identified, but as of yet nothing has been dated to the 17th century. It is still possible that this burial ground contains 17th-century burials as well, but as of yet it has not been proven.

(Gaulton 2012). The data from the frequency model suggests that the burial ground is more likely in the centre of the settlement, with the east as a close second and north as third most likely. To the direct north of the fortified settlement is the inner harbour where they could not have buried individuals, leaving only the central and eastern areas as the most statistically-likely locations. Unfortunately at this time it is not possible to test directly west of the main settlement area at Ferryland, as there are two modern homes located there.

The statistics show that the frequency of fortified settlements with burial grounds inside or outside of the fortifications is a 50 / 50 split, but there is a priority for an elevated location, around the middle of the living area, and these became some of the parameters for the search at Ferryland. However, local legend combined with prior conceptions and archaeological evidence suggested several alternative options worthy of exploration during the 2016 field season, leaving the most statistically likely portion to the 2017 season (central and elevated). The field between the eastern defensive ditch and the modern reproduction kitchen garden was of interest to the investigation, as it had long been a popular contender for the burial ground, and had even been suggested as a burial location of Lady Sara Kirke by a local water douser some years ago (Barry Gaulton, personal communication 2016). Two additional locations to the south of the settlement were flagged, entertaining the possibility that if the burial ground was south, and elevated far above the settlement broken gravestone fragments may have fallen to where they were discovered via natural erosion or human force. Assumptions that the burial ground could span both Calvert's and Kirke's governance of the settlement (1621-1696) had not been given any serious consideration prior to this research project. During the 2016 field

season a new theory arose; that David Kirke, disgusted at having to associate with the Catholic aspect of Calvert's colony (Kirke 1639) and was known for attempting to erase portions of Calvert's constructions, would likely not have wanted to bury his Christian dead in the same grounds as had Calvert, and therefore would have established a burial ground elsewhere[5]. It is even possible that he was responsible, if not directly, for the destruction of the gravestones recovered at Ferryland (Gaulton 2006:90). With this in mind, the area which contained the earliest burial ground could have been considerably smaller than previously anticipated, large enough to fit 10 to 20 individuals, in order to account for undocumented deaths. Within the fortifications, most areas that would suit a larger combined burial ground has already been thoroughly excavated, but when considering that the space may only have been used by Calvert's settlers, there was a possible option in the elevated area directly south/southeast of the brewhouse, and another open space to the north. These spaces are within close proximity to where all three of the surviving gravestone fragments were located and due to the large quantities of 18th-century overburden/slopewash, the southern area has remained largely unexplored. The southern area is statistically likely, being elevated, relatively central in terms of spatial positioning in the settlement, within the fortifications, and not associated with a church or meeting house of any kind, and was explored during the 2017 excavation season.

[5] The location of which is also unknown, if there were in fact two 17th-century burial grounds. There is some thought that this site could potentially be the 'Old Non-Denominational Burial Ground' on the hill directly west of the modern Colony of Avalon Centre, however the oldest gravestones at that site do not have dates, and a portion of the landform was likely removed during road construction.

Different regions of the North American coast were colonized by British and Irish people of various religious and political backgrounds, and when lumped together these group characteristics get lost in the various choices of different groups. As a result, it is not possible to definitively predict human behaviours when choosing a burial ground location through statistical frequency analysis, due to the immense variability of choice when it comes to organizing a settlement, and the different social factors that could influence those choices. In terms of the search for potential locations of the Ferryland burial ground, the study has informed us that an elevated, central location is more likely than any other, and that fortifications likely did not play a major role in decided to bury one's dead close to home or not. Ideally, only settlements around the same age, background, and region as Ferryland would have been used in the predictive model but that would leave us with only Cupids, whose 17th-century burial ground currently remains unknown.

Future research might be better served looking at sites in a specific region, and comparing that to surrounding areas and the way the dead were incorporated into the landscape. For example, the Massachusetts data tells us that the majority holds for non-fortified sites, burial grounds mostly not associated with churches, and located on elevated ground in the centre of the settlement, with north, west, and east making up the rest of the breakdown respectively. Assuming we did not know the location of the burial grounds in Boston, these majorities hold true for all three sites in the famous city. When the information is applied on a regional level, the results are slightly more accurate than when compared against all data for northeastern North America. This indicates that there is not one set pattern of burial ground placement that can be traced along the coast, but

rather many smaller, regional patterns guided by the social and religious cues of the resident population.

Table 4.1: Frequency Analysis of 17th-century settlements (43 sites)

Fortified:	76.7% no (33)	23.3% yes (10)
Burials inside Fortifications: (2 unknown)	90.2% no (37)	9.8% yes (4)
Church association:	65.1% no (28)	34.9% yes (15)
Elevated: (1 unknown)	35.7% no (15)	64.3% yes (27)
Direction: (2 unknown)	41.5% centre (17) 9.8% south (4) 15.6% west (6)	17.1% north (7) 17.1% east (7)
Water:	55.8% Atlantic (24)	44.2% rivers (19)

Table 4.2: Frequency Analysis for Comparison of three regions (31 sites)

Massachusetts (15):			*Connecticut (11):*		*Virginia (5):*	
Fortified:	80% no	20% yes	90.9% no	9.1% yes	60% no	40% yes
Burials inside:	100% no	0% yes	100% no	0% yes	60% no	40% yes
Elevated:	26.7% no	73.3% yes	45.5% no	54.5% yes	80% no	20% yes
Church:	80% no	20% yes	81.8% no	18.2% yes	0% no	100% yes
Direction:	40% centre	33.3% north	45.5% centre	9.1% north	60% centre	20% east
	6.7% east	20% west	27.3% south	18.2% west	0% south	20% west

Table 4.3: Frequency Analysis of settlements in Newfoundland, 17th & 18th century (20 sites):

Newfoundland (20):		
Fortified:	95% no (19)	5% yes (1)
Burials inside Fortifications: (1 unknown)	100% no (19)	0% yes
Elevated: (1 unknown)	5.3% no (1)	94.7% yes (18)
Church association:	70% no (14)	30% yes (6)
Direction: (1 unknown)	31.6% centre (6)	10.5% north (2)
	15.8% south (3)	21.1% east (4)
	21.1% west (4)	

Chapter 5

5.1 Excavation

5.1.1 *Excavation preparation*

Fieldwork was undertaken at Ferryland in the summer of 2016 and 2017 in order to test the accuracy of the statistical frequency of burial ground traits model, as discussed previously. The fieldwork and concurrent research for this project was made possible by research grants from the Institute of Social and Economic Research (ISER), the Provincial Archaeology Office (PAO) of Newfoundland and Labrador, the Smallwood Foundation, and a Masters scholarship from the Social Sciences and Humanities Research Council (SSHRC). Fieldwork was carried out over a six week period from July 8th 2016 – August 12th 2016, and from July 3rd 2017 to July 28th 2017, totalling a 10-week field excavation in search of the 'lost' burial ground.

Ferryland was used as a case study within the wider goals of the statistical model to test its accuracy against the often unpredictable nature of humanity. The excavations were also the first systematic attempt to locate the earliest organized burial ground associated with the Calvert period occupation. The settlements used for the statistical analysis were chosen because of their similarities to Ferryland in one or more aspects; political or religious background, or topography, for example. As the main goal of this portion of the research was to ground truth the location of the earliest organized burial ground at the settlement, I included factors which pertained directly to the original occupational period at the settlement; the 1621–1638 period, wherein the Lord's Baltimore were still the sponsors of the Ferryland colony, until the arrival of Sir. David

Kirke in 1638. From 1638 onwards, many changes were made to the structure and organization of the settlement.

By examining these data sets from British colonial sites against one another, it was determined that the most likely locations for an organized burial ground at Ferryland is to the east or potentially south (based in this case more on the availability of land at Ferryland than the statistical likelihood) of the fortified enclosed settlement, on an elevated area and outside of the walls of the town itself but still fairly close. The data also suggested a strong likelihood that in the case of fortified sites, such as Ferryland, the burials would be near the approximate centre of the planned town, placing them within the fortifications of the settlement. It was not a common custom in the 17th century to sequester the dead to some far reach, out of sight and mind of those still interacting with the living portions of the settlement.

The statistical information showed that out of the 43 sites surveyed along the northeastern seaboard which were founded prior to 1700, 41.5% had their burial grounds placed in the centre of the settlement, or within the original plan close enough to the arbitrary middle of town to be considered the centre, while 17.1% were to the east, 17.1% to the north, 14.6% to the west, and only 9.8% to the south. As previously stated, the southern location was more of a viable option for exploring at Ferryland specifically because to the north was inaccessible as a burial ground due to the ocean and the western area of the site is currently located underneath several modern buildings. An overwhelming 64.3% were on an elevated area in relation to the rest of the occupied areas of the settlement, and 65.1% were not associated with a church. According to surviving documents from Ferryland (Wynne and Calvert letters, Cell 1982) there are no records or

mention of a church ever having been built at the site, but that both Protestant and Catholic services were held under the same roof. In was reported to Rome in 1630 that "As to religious usage, under one and the same roof of Calvert, in one area Mass was said according to the Catholic rite, while in another the heretics carried out their own" (Lahey 1998:29). Ongoing excavations have not located any burials near the Mansion House, so the burial ground at Ferryland is unlikely to have been directly associated with a house of religious practice, whether by necessity of space or conscious choice.

It has long been suggested that the 17th-century burial ground at Ferryland was located to the east, directly outside the fortifications and between the current kitchen garden and the defensive ditch (Carter et al. 1998:58). In fact, this theory has been portrayed on pictorial representations of the 1620s and was largely based on the nearby presence of gravestone fragments found in secondary deposits. In order to yield the highest chance of uncovering the lost burial ground, I first conducted a non-invasive Ground Penetrating Radar (GPR) survey on areas with minimal historic disturbances to conduct a GPR survey. Four main areas were identified and surveyed using GPR survey prior to excavation, and an additional two test areas were identified once fieldwork commenced in 2016 (see Figure 5.1). Area 1 in Ferryland Area D was a 9m E x 15m N space, between the defensive ditch to the east of the settlement and the reproduction kitchen garden. Area 2, also located Area D, was a 7m E / 5m N area on the hillslope to the direct south of the kitchen garden. Areas 3 and 4 were located in Area E on top of the hill to the south of the Mansion House, and to the west of the bastion earthwork still situated overlooking the harbour. Area 3 was 10m E / 5m N and Area 4 was 12m E / 10m N. The survey Areas 1 and 3 were also chosen for their proximity to the three surviving

gravestone fragments found in secondary deposits, all three of which dated from the 17th century.

The 2017 excavation did not employ GPR survey. There were two reasons for this. First, the chosen excavation area — within the fortified settlement and south / southeast of the brewhouse — contained a large volume of overburden from the 18th century. Second, the results of the 2016 GPR survey were such that a further survey was deemed unnecessary. This portion of the excavation required its four weeks to complete, due to the large volume of 18th-century fill which had not yet been excavated.

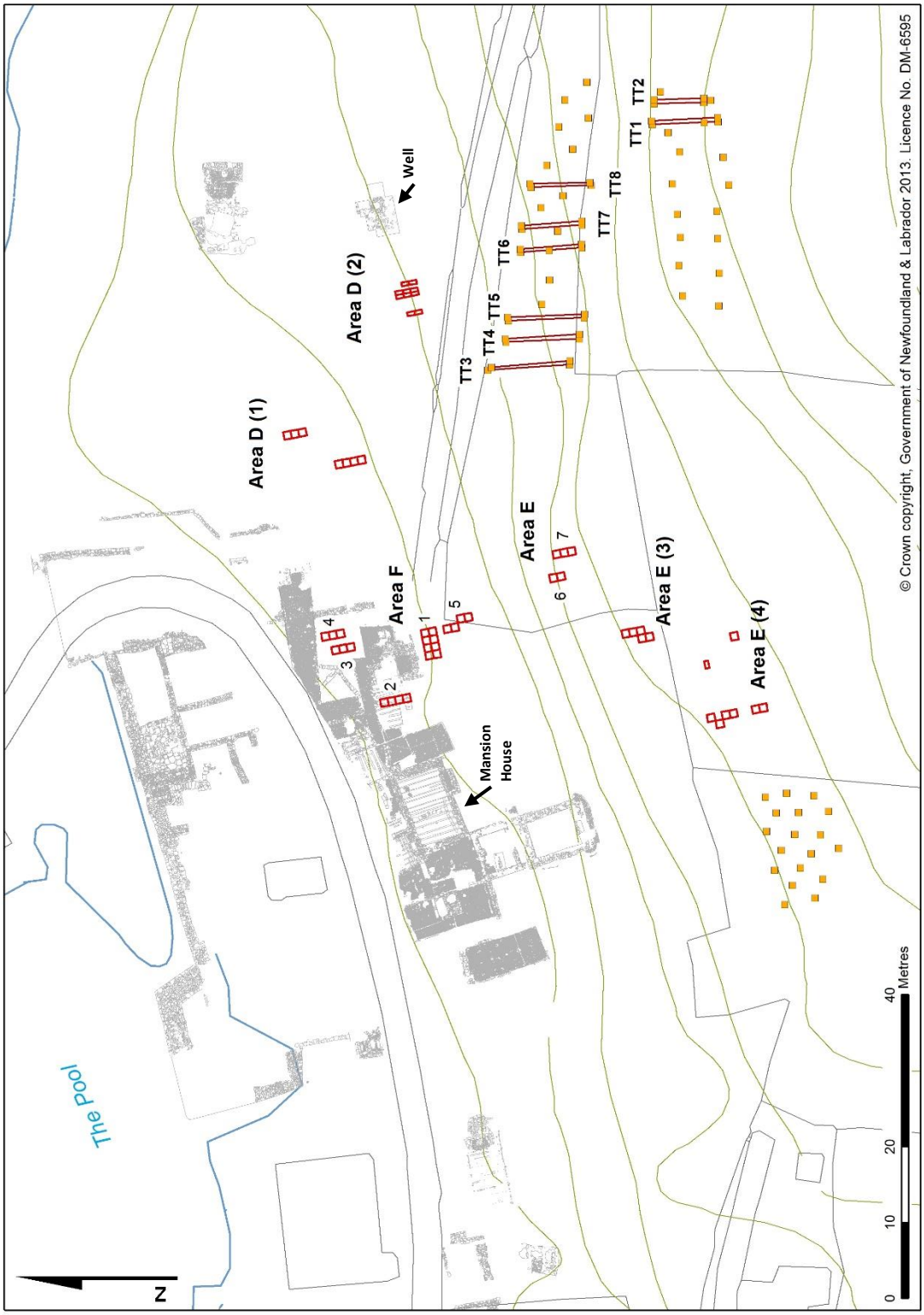

Figure 5.1: Map showing author's excavation areas in 2016-2017. Map created by the author and Bryn Tapper, 2017. Yellow squares indicate test pits, red boxes indicate 1x1 m units, and TT indicates test trenches dug with machinery.

5.2 Non-invasive survey

5.2.1 *Ground Penetrating Radar at Ferryland*

Ground Penetrating Radar (GPR) is used in various scientific disciplines such as archaeology and geology to gain a better understanding of what is directly below the surface without having to disturb the ground in any way. The GPR transmits high-frequency radar waves from the antenna while being pushed or pulled along the surface of the ground, and measurements of these waves are taken from the time elapsed from the wave transmission to its reflection back to the machine (Conyers 2004:1). This survey technique is especially valuable to archaeologists working in areas where excavation may be limited or difficult to undertake, or in an expansive space where excavations of the entire area might not be feasible. In many instances, GPR has been used to successfully identify human remains on archaeological projects as well as for more effective forensic investigations involving the recovery of modern human remains (Conyers 2006; Patch 2009). As part of this project, we were interested in seeing how GPR could potentially influence the results of the fieldwork.

In South Carolina, a survey by New South Associates (Patch 2009) sought to investigate the number of unmarked graves in a large historic period cemetery without excavation through the use of a GPR survey. Interpretation of the resulting data determined that the presence of hyperbolic reflections in the readings, or areas which showed localized disturbance, were potential graves, with the study identifying approximately 164 areas consistent with historic period graves. This cemetery dated back to 1872, and contained excellent preservation conditions for human remains and organic material as well as minimal sub-surface inclusions, all together excellent conditions for a

radar-based survey. The paper points out that older graves would be more difficult to identify using GPR as the organic material would have more time to decompose and may not have coffins at all, much less coffins that remain intact (Patch 2009:8).

The age of the graves was something which was considered when examining the results of the GPR survey at Ferryland. After nearly 400 years of laying in the acidic soil of the Avalon Peninsula, would there even be human remains left to excavate, much less identify with the GPR? An experimental study based out of the University of Central Florida's Department of Anthropology explored the rapid degradation of organic remains and soil disturbances in different burial environments in order to test what these constructed scenarios would look like through the GPR's data readout, and how these could be used to interpret human burials in the future (Schultz 2012). The study examined the way that pig carcasses in different scenarios such as wrapped in a shroud, underneath an object, or encased in a coffin can produce distinctly different readings. Of particular interest to my research was the aspect of their study which dealt with subsurface visibility variables. The report concluded that test scenarios which involved the pig being wrapped in something such as a blanket (or tarp, as they included modern variables for forensic purposes) were overall more visible after months of being buried, but even these burials were more difficult to demarcate in months with less than average rainfall, suggesting that dryer environments might make it more difficult to identify grave cuts and buried remains (Schultz 2012:4). This report also suggested the use of a 250 MHz antenna over a 500 MHz antenna when searching for human remains if one has access to both. Our choice of antenna will be discussed later in this section. It is interesting that Schultz's study found that increased moisture in the subsurface was helpful for highlighting burial features, as it

was the understanding of our team that increased moisture would be a hindrance to the accuracy of the GPR, due to the increased reflectivity of moisture in soils (GPRS 2016). Schultz identified that a 500 MHz antenna may be more likely to identify a shallow grave, compared to the 250 MHz antenna which had better results at detecting the deeper graves in his 2012 study. Schultz also concluded that if a body was buried with a layer or rocks or other items, it would be more visible after 27 – 30 months than a body wrapped in a simple shroud or buried without any items, as there would be less material to create a contrast in the GPR reading (Schultz 2012:12).

Compared to examining GPR readings with the goal of finding a stone wall or well, searching the subsoil to identify grave shafts is quite delicate work. Considered to be "subtle features" (Conyers 2006:69), the parabolas or hyperbolic reflections indicating the soil disturbance associated with a burial shaft or inclusions suggestive of a coffin or human remains can easily be overlooked, especially by someone unfamiliar with reading GPR results. In the case of historic / post-medieval graves in the 17th century, one should expect a mixture of shrouded corpses and individuals buried in wooden coffins of varying construction. If the conditions were optimal, which wet acidic soil is unfortunately not, the coffin and/or the human remains may still be in fairly good condition and thus would create reflections in the subsoil which would indicate the presence of human remains. The burial shafts might be oblong or rectangular depending on if the individual was buried with a coffin or not, and after 400 years of existing in a continuously occupied and evolving landscape, may prove to be very difficult to identify.

The four survey areas at Ferryland previously described were selected and marked in the field in order to facilitate the GPR survey. The survey was undertaken on May 31st,

June 2nd, and June 3rd 2016. The crew consisted of myself, Maria Lear (Archaeological Curator and GPR technician, Department of Archaeology, Memorial University of Newfoundland) as well as graduate students Ian Petty, Kayley Sherret, and Meghan Walley (see Figure 5.2). We had access to both the 250 and 500 MHz Noggin antennas as well as the 4-wheeled SmartCart and 1-wheeled SmartTow systems. The 500 MHz

Figure 5.2: GPR survey at Ferryland Area D (2). Left to right, Robyn Lacy, Maria Lear, and Kayley Sherret. Photo by Ian Petty.

antenna provided higher resolution than the 250 MHz but at a reduction in penetrable depth (Sensors & Software 2016). Although we had access to both a 250 MHz and 500 MHz antenna for the SmartCart system, the odometer which reads the distance traveled and connects this distance to the antenna in order to produce accurately measured readings malfunctioned on the first day. We therefore relied on an alternative system, the SmartTow, which is attached to the operator and consists of a handle with a separate screen and the antenna dragged across the surface of the ground with a single wheel

operating the odometer trailing behind. This was likely a positive outcome in the end: during pre-fieldwork GPR training with Maria Lear and Dr. Vaughan Grimes at the Tors Cove Burial Ground in May 2016, we experienced breaks in the data while using the SmartCart due to the roughness of the terrain (Lear and Grimes 2016). It was determined that the Cart had difficulty reading uneven ground due to the antenna being suspended just above the surface, not resting on the ground directly, and thus a rise in elevation would jostle the antenna and disrupt or even stop the reading. It also could not work easily around obstacles in the survey area, whereas the SmartTow is much narrower in profile than the 4-wheeled Cart system, and thus could fit in more confined spaces and had better results recording data on rougher terrain. Unfortunately we did not have access to attachment bars for the SmartTow that were compatible with the 250 MHz antenna. All GPR survey work for 2016 was therefore conducted using solely the 500 MHz antenna on the SmartTow with one individual attending to the Tow to ensure it did not slip off its line while operating on an incline.

We had originally intended to use the 250 MHz antenna in Area 4 due to its presumed overburden due to years of plowing for vegetable gardens, but were unable to facilitate that plan. All readings were taken at 25cm increments, to ensure that we were creating as detailed of a map of the subsurface as possible, with the exception of Area 4 due to the plow grooves through the topsoil. Instead, Area 4 had to be surveyed at 75 cm – 1 m intervals running south to north, depending upon how far apart the plow grooves were located. Unfortunately this gave us a very poor idea of the subsoil, but still resulted in several interesting anomalies which were marked for later testing.

5.2.2 *Results of GPR survey*

The results of the GPR survey were varied, and in comparison to papers examined prior to looking at the survey results, disappointingly muddied. Newfoundland is famous as 'The Rock' and at first glance at the results, continues to live up to its reputation. All of the survey results were filled with dozens of hyperbolic reflections indicating rocks or other objects buried below surface, disturbances, and mixed up soil layers due to years of exploitation as vegetable gardens.

In 1995, a reconnaissance radar survey was carried out at Ferryland in search of stone constructions and cobblestones, materials which produce very high-contrast readings. The report suggested several areas for further investigation, however the overall report appears to have produced busy readings that are only useful in select locations as the amount of stone in the subsurface distorts the readings (Deemer 1995). In both the 1995 and the 2016 surveys, high contrast readings mainly indicated scattered rocks, however several readings in all four 2016 survey areas were flagged for testing. These high contrast readings showed as bright blue to yellow or red in the top down view, which allowed me to scan cm by cm down through the entire reading, while they would appear as a hyperbolic reflection or 'arc' in the slice-view in greyscale (Figure 5.3). Also flagged for testing from the slice-view were several areas showing sub-surface slumping or a break in an otherwise visible layer(s). Areas like this may be indicators of where a grave shaft was cut into the ground, or where slumping occurred as the grave fill settled and/or the coffin collapsed or the shrouded body decomposed. Promising readings between approximately 60 cm below surface (cmbs) and 1.5 m below surface were mapped for testing, due to the variability in depth of historic period graves (Riordan 2000). In Area 1,

two anomalies were selected for testing, one in the northeast corner of the survey area and the other in the middle towards the western side. In Area 2, four interesting anomalies, grouped close together were mapped, all between 1 and 1.4 mbs. Area 3, to the direct west of the bastion, contained a very interesting reading that seemed to be projecting outwards from the earthwork, but the rest of the area was fairly homogenous and rocky. Lastly, Area 4 showed several promising areas, including four oblong features of approximately the same size and depth below surface. Over each of the high potential readings, several test units were mapped out for the 2016 excavation.

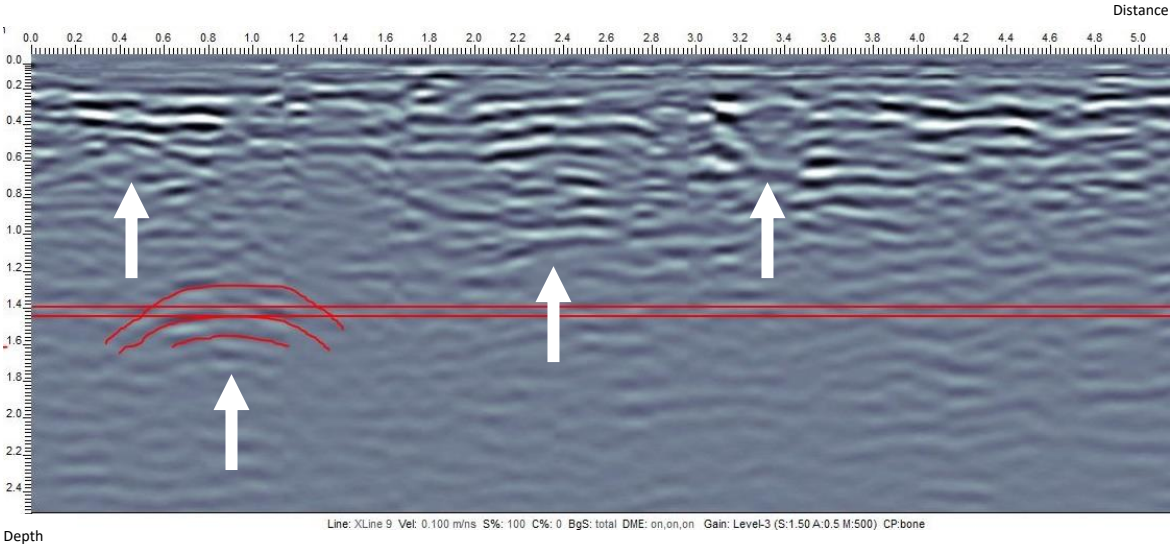

Figure 5.3: Slide-view of GPR survey, Area D (2) X line 9. Scan displays disturbances in subsoil.

5.3 Excavations at Ferryland

Excavations took place at Ferryland between July 4th and August 12th, 2016, and July 3rd – 28th, 2017. See Figure 5.1, above, for a map of all areas tested with GPR, excavation units, test pits, and back-hoe trenches over the two-season project.

5.3.1 *Ferryland fieldwork 2016 & 2017*

The excavations at Ferryland as a part of this research were extensive and took place over a cumulative 10 weeks. A detailed discussion of the fieldwork results can be found in Appendix B.

In 2016, the four areas previously surveyed with the GPR were tested by means of trenches and excavation units in order to ground-truth potential anomalies in the subsurface. Areas 1 and 2, located in Ferryland Area D to the east of the fortified settlement, focused on previously unexcavated areas and had high statistical potential for containing burials. Two trenches were opened in Area 1, which yielded a mixture of 17th- to 20th- century artifacts as well as one post hole, but no evidence of burials in the subsurface was identified. Area 2, directly south of the modern kitchen garden and west-southwest of the well, was explored through four 50cm wide test trenches. A tapering layer of slate was identified, as well as two historic post holes from an unknown feature, but there was no evidence of burial in this space either.

Areas 3 and 4, in Ferryland Area E, were located to the south of the fortified settlement on an elevated terrace overlooking the village, both were selected for survey and excavation due to their statistical potential as well as the possibility of the previously recovered gravestones having been broken and carried down the hill through natural processes. One large (5m) trench was opened in Area 3, and while a burial space was not identified in this area, based on the sloping subsurface and layers of stacked decomposed sods evident in the side walls of the trench, this area has been identified as the Colony's original southern defensive ditch. Based on now understanding the approximate location of the now identified southern ditch and earthwork, which would have contained the

palisade, the rest of the terrace was disregarded as a potential burial ground location. Area 4, south of Area 3, was explored with one trench and two additional test units, all of which produced negative results for human burials and very few artifacts from various time periods. This area was previously used for potato gardens and was extremely disturbed.

Additional test pitting was conducted in the field west of Area 4 in order to remove the area as a potential burial location. A grid of 18 test pits yielded few artifacts and no evidence of grave shafts. Further test pits initiated on the artificial terraces southeast of the fortified settlement. Two elevations were tested in order to determine depth to subsoil and look for evidence of graft shafts, totalling 27 test pits in a grid formation across the landform. None of the tests yielded evidence of burial features, but test pit 37 was positive for an in situ 17th-century midden deposit containing a large assemblage of artifacts from the latter half of the 17th-century. This area was further explored by Dr. Gaulton in 2017. A back-hoe was brought in to open eight trenches between the test pits in order to check more thoroughly for subsurface features, but none were identified.

The 2017 fieldwork did not involve a GPR survey due to the rocky nature of the subsurface within the fortified settlement area where the excavation took place. Five trenches were opened in Ferryland Area F, in unexcavated or under-explored areas to the south, west, and north of the 1620s brewhouse and bakery structure. Trench 1 contained undisturbed 18th- and 17th- century layers along with a section of rubble from the renovations and repurposing of the brewhouse structure, but trenches 2 – 5 were all located in previously excavated areas and only presented a disturbed soil layer overlaying

the subsoil, or in the case of trench 5, overlaying a thin 18th-century horizon before subsoil. Trenches 1 – 5 did not contain evidence for burials in the subsoil.

An additional two trenches were opened in Area E on the north-facing slope of the bastion, an earthwork built in the early 1620s as a part of the defensive structure which surrounded the settlement. The bastion had never been explored through subsurface testing, and if the bastion was made of earth and sod it could have presented an easy place to bury the dead. While these trenches gave great insight into the construction of the bastion as a predominantly loose and quickly deposited rubble-filled mound with layers of soil and sod inside, it proved to be negative for evidence of a burial ground. Upon understanding more about how the bastion was built, it makes sense that burials did not take place on this landform.

5.3.2 *Results and Discussion of Fieldwork – 2016 & 2017*

Although we did not identify 17th-century graves during the 2016 or 2017 excavations, the project provided important insight into the use of technologies and techniques not widely explored in Newfoundland, as well as expanded our understanding of Ferryland as a site in both the 17th and 18th century.

Ground Penetrating Radar had only been used on one occasion at Ferryland, due to the large quantity of underlying debris associated with 17th-century stone structures and other features (Deemer 1995). High volumes of rock interfere with the GPR's data output, showing a number of high contrast areas that can result in false-positive readings. This also occurs with areas that have seen year after year of cultivation and exploitation for building and farming purposes. Quite often, when GPR is used to identify burials, it is

done in an area that has not been used for much else and usually the targets are graves that are not 400 years old, but rather within the last century or two. The soil that makes up the Avalon Peninsula is extremely acidic, not an environment that lends itself well to the preservation of human remains, and that factor coupled with the extremely rocky soils meant that identifying anomalies in the data which could be graves was even more difficult. While a number of potential hot spots were identified using the data collected in May of 2016, all of these locations turned out to be false positives for grave shafts, and nearly all of the readings were not features that could be identified in the subsoil and were therefore not human made. Area 2-B, C did identify two subsoil features that were classified as post holes, but while Area 2-C was located approximately where the smaller post-hole was uncovered, the eastern square post-hole was not associated with any GPR results and uncovering it was more luck of excavation than pin-point accuracy of the geophysical equipment.

The 2016 excavation at Ferryland provided insight on the physical parameters of the early fortified settlement as well as evidence for additional domestic occupation outside the original 4 acre settlement dating from the latter part of the 17th century. The latter area is currently being tested by Dr. Gaulton and his team in 2017. Because there had not previously been excavations that far on the landform from the fortified portion of the settlement, it was not known that people had been interacting with that space in the 17th century. The discovery of a slate processing area was also an exciting discovery which adds to our understanding of work spaces in and around the settlement associated with the early tradesmen at Ferryland. The identification of the southern defensive ditch and earthwork palisade also extends our knowledge of the site. Although there had been

previous attempts to locate the southern ditch (Miller 2013) which were very close, the ditch remained missing until the 2016 excavation wherein the palisade earthworks comprised of stacked sod layers were positively identified, marking the location of the earthen rampart and ditch. It is likely that the southern ditch continues along the entirety of the raised landform, however large portions of this hill have since slumped or have been re-formed for garden terraces or later constructions and it is likely that portions of the surviving earthwork and evidence of the ditch have since been lost to the west of the 2016 trench. Due to the identification of the ditch, however, my team did no further excavations along the edge of the landform, as the ditch was constructed between 1621 and 1622 and would not have been a space that was used for interring human remains. This was an important discovery for my project, as we had previously not known exactly where that important southern boundary was located and if the statistical model was to be tested accurately, knowing if we were digging within or outside of the fortified settlement was important.

The statistical frequency model suggested a 41.5% chance that burials in settlements prior to 1700 would be in the centre of the settlement, and in fortified settlements, 50% were within the walls, 50% outside the walls, indicating that the barrier surrounding the town wasn't a major factor in choosing a burial ground location. In 2016 we focused on exterior locations at Ferryland, to the east (at 17.1% statistical frequency) and to the south (at 9.8% frequency) which is not a high likelihood but was based on proximity to where the previously excavated gravestone fragments were found. Based again on the statistical frequency model, a high percentage of burial grounds were elevated on a landform from their associated settlement and thus the southern high terrace

level was included for its location and elevation. Because the three gravestone fragments were all found near the eastern ditch, I wanted to focus on locations that were statistically likely given the organization and layout of the settlement at Ferryland, and that were also in close proximity to the gravestone fragments. If the stones had been purposely broken and fallen or were thrown into to the layer created by renovation and dismantling of previous construction which they were later found in, it was a logical theory that the burial ground was on the flat landform to the east of the settlement or on the elevated terrace above.

The southern terrace level, Areas 3 and 4 of my survey locations, was a high potential location due to its proximity to the previously recovered gravestone fragments, as broken stones may have been carried down from farther up the hill during erosion or having been tossed down by individuals who broke the stones. After discounting Area 3 due to the identification of the ditch, the anomalies in Area 4 seemed like the best option, being outside the walls and elevated from the settlement. This area also proved negative for burials, and after test pitting the rest of the landform, it was deemed unlikely that any burial ground ever existed in that part of the settlement. Thus, the 2017 excavation focused on an area which is slightly elevated inside the fortifications of the settlement, in an eastern / central location to the direct south of the brewhouse.

Five of the seven trenches opened in 2017 were in direct accordance with the statistical model indicating a central location as being the most probable for an early 17th-century burial ground. The Ferryland gravestone fragments were recovered within close proximity to the brewhouse, making the areas surrounding the structure viable for human burials. Most of the areas that were opened over the course of the four week excavation

had been previously excavated, but the subsoil had not been checked for features. Of particular interest was the open area north of the brewhouse, where archaeological evidence has shown no evidence for 17th-century structural remains (Barry Gaulton, personal communication 2017), thus making it an ideal candidate. However, none of the trenches surrounding the 1620s brewhouse were positive for burial features. While this is unfortunate in terms of attempting to locate the burial ground, these results do give us a greater understanding of the use of space within the heart of the colony.

The trenches opened in the bastion at the end of the 2017 field season gave this project additional insight into not only the burial landscape, but into the construction of early 17th-century colonial earthworks in North America as a whole. The bastion is elevated and man-made, and thus the trenches were opened as a part of the search for burials for the following reason; if the individuals died in the winter, the first ground in the spring would be a space that was loose and malleable, rather than the compact, rocky earth that the settlers would have already been familiar with. That reasoning, coupled with the statistical model suggesting elevated spaces as highly probable for burials, lead to a small-scale excavation on the north face of the bastion. The bastion construction, as revealed through excavation, was comprised of two major elements: sods and a rock layer. Underneath a large pile of loose rubble, layers of sod with loose rubble and sediment between continued down to at least 1.6 mbs with no subsoil or original ground surface to be found. This is likely the principal means of construction, with the rocks building up the structure and the sods to keep each layer in place. Due to the volume of rocks inside the earthwork itself, it would not be an ideal place for human burials and the

settlers would have known this upon the deaths of the individuals in the winter of 1628/29.

While the excavations at Ferryland in 2016 and 2017 did not reveal the location of the earliest burial ground associated with the Calvert occupation period at the Colony of Avalon, the fieldwork itself provided valuable insight into the way in which Ferryland's early settlers were exploiting the landscape. Understanding the extent of features such as the ditch and palisade, and the construction of the bastion itself allows me to understand the extent of the walled settlement and why certain areas that appeared favourable for burials would not have been if I had been able to see the landscape through the eyes of a 17th-century settler. The excavations also provided us with information on where there are no burials, and because this project was the first systematic attempt to locate the burials within the extent of the settlement area, this information is equally informative as locating the burial ground, and this data will be invaluable to anyone undertaking research and excavations at Ferryland in the future.

Chapter 6

6.1 Gravestone Analysis

6.1.1 *17th-century Gravestones*

Physical reminders of loved ones can be seen in the burial grounds of many cultures around the world, in the form of gravestones, earthworks, carvings, special locations within a landscape. In modern Western society we tend to favour the gravestone, now often made from granite and regulated by the institution that manages the cemetery where the deceased will be buried (Rugg 2013). It can be difficult to collect multiple comparative examples of early post-medieval gravestones as stone memorials were not as common in the late medieval period as they became in the mid-1600s (Stannard 1977:116), and as a result of reformers' destruction of gravestones and religious imagery. While gravestones were gaining popularity in the British Isles through the late 16th and into the early 17th century, they did not appear in volume in North America until the mid-to late-17th century. As a result, the earliest 17th-century gravestones from the colonial settlements on the east coast are often better compared stylistically against contemporaneous examples from the British Isles.

When one thinks of a colonial gravestone, images from late 17th and early 18th-century New England are often the first that come to mind: grinning skulls adorned with wings, hourglasses and coffins, crossed bones and leering portraiture. Famously adorned with mortality symbols, these gravestones are often associated with the Puritan presence in the region, but rather represent a wider Western post-medieval tradition of 'memento mori', or remembering one's own mortality and can be seen on the gravestones of many

faiths (Baugher and Veit 2014:8; Hopkins 2014:2). While Deetz's (1977) famous gravestone seriation study suggested that these symbols were indicative of Puritanism, and that the shift to softer images such as the cherub and the willow tree coincided with the Great Awakening, a period of evangelical Protestant ministers and increased interest and conviction in religion, this dating technique has since been heavily critiqued (Baugher and Veit 2015:7-11; Hopkins 2014:1-3). One criticism is based on examples of cherubs, willows, and other flora beginning to appear on New England gravestones long before the Great Awakening in the mid-18th century (for examples see Forbes 1967:3, 18, 32).

Images, however, were not the focus of many of the earliest gravestones in the 17th-century British colonies of North America. The earliest British grave markers which have survived date to around the 1640s, not counting the examples from Ferryland, though earlier stones and monuments made from organic material were likely created as well. This was a time of political and religious upheaval, and the Protestant Reformation took with it much of the imagery which previously adorned the burial spaces of Catholic worshippers. With the practices of religious iconography removed, the reformers and later the early Puritans in the colonies created gravestones which often did not contain images of any kind, and when they did these images were not religious in nature. As one does not often get the opportunity to excavate historic burials, the most we can often learn about specific individuals is through their gravestones, a display of their life and faith in a few short lines, making the stones an invaluable asset to historical archaeology.

6.1.2 *Informing through inscribed text*

The study of gravestones has often fallen into the realm of art history, with many studies focusing on the iconography and carvers in an effort to delve into the history of the gravestone and its represented individual(s) (Ludwig 1966; Forbes 1967; Trask 1978; Slater 1987; Blachowicz 2006, to name a few). However, when there is limited iconography, information about the gravestone's origins may still be gleaned from the text, both the message itself and the style of script can be useful to an archaeologist studying the stone or the burial ground as a whole. There are only two major studies on the stylistic attributes of inscribed lettering on British gravestones (Bartram 1978; Thomson 2009b; also see Thomson 2006, 2009a), and a case study on erosion of the roman script (Lacy and Freeman, in peer-review). These lines of evidence allow for an

Figure 6.1: Left image shows the two small pieces from the same stone, and the right image shows the larger gravestone piece recovered at Ferryland. Photo by author, 2017.

expanded understanding of the development of not only gravestones, but also of standard script styles encountered today.

My previous research into inscription erosion has allowed for a more detailed examination of the Ferryland gravestone fragments. To date, only three gravestone fragments from two different gravestones have been uncovered at Ferryland and is the only physical evidence of the 17th-century burial ground. All three fragments were recovered from a mid-17th-century context, the largest of which was found in the eastern defensive ditch (Carter et al. 1998:58), and the two smaller fragments from one gravestone found within close proximity to the brewhouse and bakehouse (Gaulton 2006:88) (Figure 6.1). The 2016 excavations also revealed a small piece of inscribed stone, but unfortunately there is not enough legible on the stone to confirm that it is definitely from a gravestone or its date. All of the gravestone fragments are made from slate and inscribed with lettering in the archaic roman script with visible guidelines added by the carver. There appears to be minimal weathering to the surfaces of the stones, and indeed guidelines are carved so shallowly into the face of the stone that they are usually worn away within years of being outdoors (Figure 6.2). The fact that these stones all have their guidelines is a testament to the stone quality, but also indicates that they were likely

Figure 6.2: Portion of Ferryland gravestone showing shallow, but well preserved text guidelines. Photo by author, 2016.

protected (in this case underground) from the harsh effects of the very prominent Newfoundland weather.

In addition, the gravestones appear to have been broken and this could potentially have been a deliberate action in an attempt to erase the presence of the early settlers from the landscape, either by the Dutch, French, or even by the second group of British settlers lead by David Kirke, who was known to have disliked Calvert's Catholic presence in Ferryland. It is possible that Kirke ordered the destruction of this supposedly Catholic space, and built over this area much in the same way that he built over the stables during his reorganization of the failing colony into the prosperous Pool Plantation (Gaulton and Tuck 2003; Gaulton 2013; Ingram 2015:32).

Examining a gravestone based partly on the development of the text present is an excellent way to get a better idea of the period it was carved in, and if it was made by a trained letter carver. One of the Ferryland gravestone pieces does contain two numbers, a 6 and a 2, with a scratched fleur-de-lis between the numerals, and it is very likely that these numbers are part of a year that could be read '[1]62[#]'[6]. However, because we do not have any other pieces of the gravestone to confirm this, it could just as likely be read as '[month] 6 2[# years of age]. While I personally have never seen a gravestone with an image between numerals, there are many examples of gravestones from the 1600s in New England displaying the year on its own line with large spaces between each number, making [1]62[#] the most likely option. As there are no images other than a scratched fleur-de-lis, or confirmed dates on the Ferryland gravestones, their context and textual

[6] Square brackets are used when suggesting text on a gravestone or other written document that is not present or is illegible and is merely being suggested as the best option to fit the available information.

clues are the primary sources of evidence. What we can see on the Ferryland gravestones is an example of an archaic roman script, a script that is most commonly identified today as the predecessor of Times New Roman. The lettering style has a long standing history in the British Isles since its introduction by the Romans in 43AD. In fact, roman lettering is the most commonly used script on gravestones, occurring on 99.6% of all memorials recorded in Ireland (Thomson 2009a:55) and was carried over to the New World on imported gravestones, with carvers, and in written texts and lettering books.

Roman script can be broken down into three groups: Archaic, Early, and Modern roman, with serifs on the ends of straight lines across all forms of the letters. Archaic roman, which is the form found on the Ferryland gravestones, displays similarly weighted lines; this means that the vertical and horizontal lines in each letter were roughly the same width and depth (Figure 6.3). This causes the letters to erode on the stones fairly evenly, and can make text from the 1700s easier to read than something from the 1800s during which early roman script was used. The archaic roman script style features only capital letters, which is another feature of the text on the stones at Ferryland. They also contain ligatures, combinations of two or more letters to form a symbol which takes up less space on the gravestone than the letters all written individually. The most common are 'TH' 'THE' and 'HE' but other variations can also be found on post-medieval gravestones across the British Isles. There is a portion of a ligature present on two of the Ferryland stones pieces, a 'TH', which also help to identify the script as archaic roman (Figure 6.3). This style was used in the early 1600s until the early 1700s approximately, prior to the introduction of the first lowercase letters in carved text. In New England, however, there

are some examples of a lowercase ‘e’ showing up on pre-1700 stones, so more research needs to be done to address the apparent timeline discrepancies.

The transitional phase, early roman, is seen emerging around the early/mid-1700s in northern Wales and Ireland (Lacy and Freeman, in peer-review), and is signified by slightly thinner, shallower horizontal lines, with vertical lines being thicker and slightly deeper by comparison. This phase also marks the introduction of lowercase letters. In the early to mid-19th century, we can see a shift to a more developed and standardized script, aided by the publishing of script books to help the carvers, and is deemed as ‘modern’ roman (Thomson 2009b). This script is characterised by deeply incised, wide vertical lines and very shallow and thin horizontals. The erosion of this form of letters makes for very difficult reading, as the horizontal lines can vanish in as little as 50 years depending on the material they are carved into, leaving sets of vertical lines and few clues. This

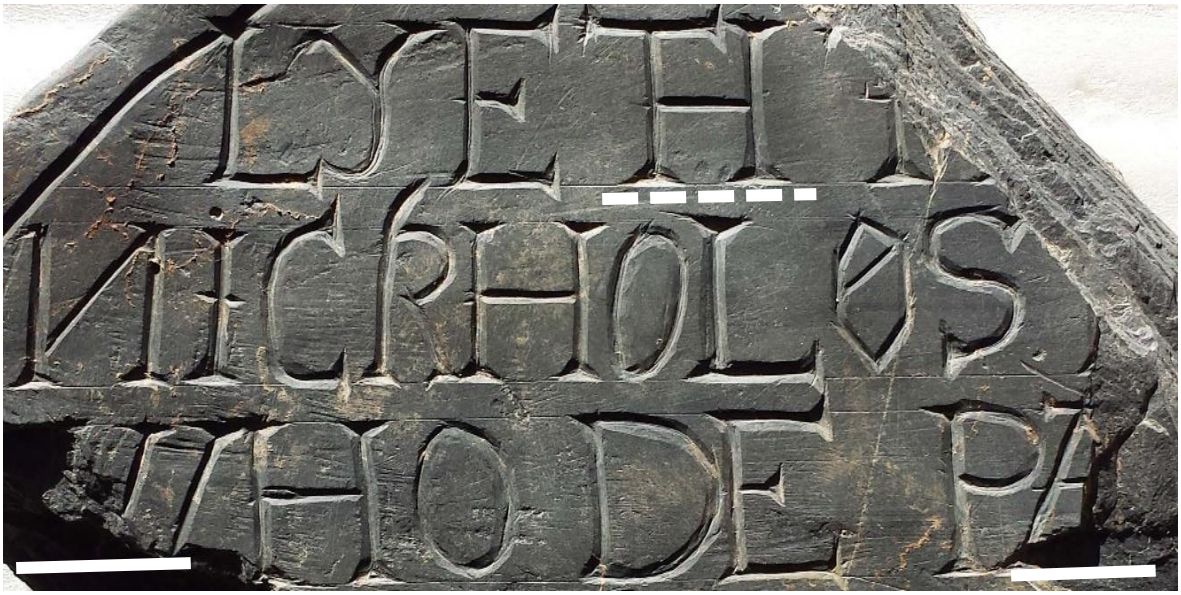

Figure 6.3: Characteristic archaic roman lettering features capital letters, bold vertical and horizontal lines, ligatures (joined letters, dashed underline), and out-of-use letter forms such as the W (2 connected Vs) and the A (top bar) underlined here. Photo by author, 2016.

creates a challenge for archaeologists and other researchers attempting to read the partly eroded inscriptions, which in many cases are more difficult to read than their 400 year-old archaic counterparts.

Due to the features present on the Ferryland gravestones, ligatures and lack of lowercase letters, it is likely that these stones were carved in the first half of the 1600s — a suggestion fully corroborated by the pre-1650 archaeological contexts in which they were found. If the numbers on the one fragment do indeed indicate a '[1]62[#]' date, then that date coupled with the lack of surface erosion and early context of the finds would suggest that these gravestones were indeed destroyed by David Kirke and company in the late 1630s/early 40s during the period of intensive reorganization/rebuilding at the Ferryland colony. Based on the current evidence, this is the most plausible scenario. The slate that they are carved from is high quality and contributed to the immaculate preservation of the carvings. The even width and depth of the lettering, averaging 4.3mm wide on the vertical lines and 3.135 mm wide on the horizontal lines shows that the horizontal lines are slightly thinner across all three samples, and that this could show the beginning of the trend towards more developed forms of the script with changes in the ratios of line widths over time. That the lines are nearly the same width with serifs present on each character allows us to characterise the script as archaic rather than early roman.

The carving of slates, often delaminating if broken along the wrong plane, should be undertaken by a professional slate cutter/carver in order to achieve strong, straight lines. There were slate cutters/masons amongst the first settlers at Ferryland, and they would more than likely have already had the appropriate tools for slate carving with them. It is more than likely that if anyone at Ferryland was carving gravestones, it would have

been those who worked with stone. The forms of the letters on the Ferryland gravestones are cut well by someone who knew how to handle slate, however some of the curves suggest that perhaps not someone who was used to carving gravestones. This could account for the lack of decoration as well. There is the potential for both gravestones to have been carved by the same individual, but without more pieces containing lettering from the more fragmented stone with which to compare the lettering styles, I cannot be certain.

It is indeed a possibility that these gravestones were broken during the carving process and discarded as a result. However, if this were the case, then we would expect to have found them in an early 17th-century event associated with slate chippings, and other indicators that carving and stone working had occurred in that area, and this is not the case. The larger stone was recovered from the ditch and the smaller two were found around the brewhouse in an event associated with reorganization of settlement structures at a later date, suggesting that they were broken after the fact.

The larger of the two gravestones bears the name of 'Nicrholas [H?]', and a portion of the month 'March' in the exact place one would expect to find a month of death on a 17th-century gravestone. It has been suggested that this could be 'Nicholas Hoskins', a gentleman at Ferryland in the early years and who would have been able to afford a gravestone, rather than 'Nicholas Hinkson' the carpenter, who was also at Ferryland around the same time (Gaulton 2006:89). Either of these men could have perished during the difficult winter of 1628/29, and it is not out of the realm of possibility to connect this stone to one of these two. Combined with the stratigraphic layer that the stones were found in, the script analysis placing them in the early 17th century, and the

knowledge of several deaths during a difficult winter, it is very likely that this gravestone belonged to one of those two men. Another possibility is that another Nicholas arrived after the 1623 census and the stone was carved to mark his final resting place, however there is currently no documentation to prove this theory.

6.1.3 *Gravestone carving in Newfoundland*

The carving of gravestones in colonial North America is nothing new, with many examples of 17th-century carvers working out of New England and this trend continues up the coast into present day Canada. Prior research on gravestone importation to Newfoundland was carried out by Pocius, and indicates that as Newfoundland was highly reliant on the import of manufactured products for survival and comfort, the importation of gravestones from the UK, Ireland, and likely New England was very common (Pocius 1975, 1981). The business of gravestone carving did not become common in Newfoundland until around 1830, with individuals such as J. Hayes (Hay/s), MacKim, and A. Smith, names which frequently appear on stones found in St. John's after 1830 (Pocius 1981:10). Alexander Smith was, in fact, the first carver to import white marble to Newfoundland, and his work can be found in many regions of the Avalon (Pocius 1981:10). Pocius presents evidence for importation of gravestones in the 18th and 19th centuries, through carvers' names and tracing stone types back to such locations as south Dorset (blue-grey limestone) and south Devon (light-coloured limestone) (1981), even though local slate had been proven again and again as an excellent medium for carving.

It is unlikely that local gravestone carving only began on the Avalon around 1830. Early settlements such as Cupids and Ferryland did order supplies from the British Isles,

but were isolated in those early years of the 17th century, and would therefore have had to be at least partially self-sufficient. Furthermore, there is no mention of requests for stone for carving nor of carved gravestones in any of the surviving records, suggesting either that the settlers were not using gravestones (and we know this not to be the case Ferryland for at least some individuals) they were carving them locally, or constructing grave markers out of wood. Many objects from Ferryland and even the walls, floors and roofs of some buildings were made from local slate (Carter et al. 1998). The three gravestone fragments which have been recovered thus far from the excavation appear to be made from slate of a similar nature to. Furthermore, an examination of the 1988 Geology of the Avalon Peninsula map (King 1988) shows that slate is included within the St. John's and Signal Hill geologic groups, however the Signal Hill group does not contain material consistent with that recovered at Ferryland (Gaulton 1997:27). The shore and Ferryland Head contain several different formations. Of particular note is the Fermeuse Formation, which comprises the Pool area and the hills which line the coast and which continues both north and south from Ferryland, as well as the Renews Head Formation which outcrops near the site and is also made up of shale and slate fit for building materials (Gaulton 1997:27). The Renews Head Formation is made up of grey to black shale, and from observation, outcrops in a number of boat and land accessible locations which could easily have been exploited by the settlers in order to obtain workable slates, and even may have been more visible in some cases from the water than from the land. Gaulton's 1997 thesis suggests a number of potential quarry locations within a 1-2km radius of the Colony site. The quarry site identified as 'Site #3' is comprised of high–quality slate, and was likely the source for not only the slate roof tiles, but the gravestones as well.

Compared to settlements such as Jamestown, St. Mary's City, and Cupids, the use of stone for construction far outweighed wood at Ferryland due to the availability and the durability of a stone building in such a climate. With natural resources readily available and skilled craftsmen present at the settlement, it is more likely that the Ferryland gravestones were carved at the colony by these individuals rather than having been ordered and shipped from England or Ireland. The priorities in these first few years of settlement were supplies for survival, mentioned in letters from Wynne to Calvert, and commemorative stones did not aid in that mission. While it is very clear that later on, many gravestones in Newfoundland were carved in the British Isles and imported, I do not believe that this is a blanket statement that can be applied to all years prior to the 1830s, but rather to the individuals in the 18th and 19th centuries who could afford to do so, and it is likely that there are many later gravestones along the coast of the Avalon which were carved locally. There are minimal examples of locally carved gravestones, but they can be distinguished from imported stones by the 'folk' lettering and imagery which mimics more professional imported carvings and use of local materials prior to major stone imports for carving purposes. Local slates and sandstones were used for such gravestones, with examples in Port Kirwan, Winterton, and potentially Brigus South (see Figure 6.4).

Figure 6.4: Gravestones top: John Commons 1749, Port Kirwan. Unknown, 1750, Brigus South. Gravestones bottom: William Lincefild 1700, Winterton. Martha Clerk, 1794, unknown location.

These stones are contenders for locally carved 18th-century gravestones. Photos by author, 2016.

6.2 Geological analysis

6.2.1 *Geological analysis of the Ferryland Gravestones*

In order to test the hypothesis of early locally carved gravestones, analysis was carried out on the Ferryland stones. The three stones were compared against several samples from an outcropping of slate on the north side of Ferryland (Gaulton's 'Site #3') which may have been one of the areas exploited during in the 17th century for roofing slates and potentially gravestones. These two sets of samples were also compared against 17th-century slate roof tiles, recovered from a structure which was newly uncovered in Area D in the 2016 field season at Ferryland. We know that slaters were cutting roof tiles for buildings at Ferryland, and this material has only been found on structures built during the 1620s (Gaulton 1997), and thus we can speculate that the slate which comprised the tiles would be from the same formation as the outcropping and the gravestones. If this proves to be the case, it is very likely that the gravestones are of approximately the same period as the slate tiles: the 1620s. Samples were taken to Dr. Stephen Piercey in the Earth Sciences Department at Memorial University of Newfoundland for X-Ray Florescence (XRF) analysis. This technique was used to determine the stone's mineral and textural make-up, and whether or not all three sets of the samples originated from the same geologic formation. The most reliable methods for slate sourcing are petrography and Nd-isotope analysis (Steponaitis et al. 2006). Detailed results in the 2014 Cárdenes et al. article which examined slate roof tile production specifically confirmed that these methods are suitable for slate testing, however invasive testing is not ideal on rare objects, and it was deemed an unacceptable risk for the Ferryland gravestones. Instead, portable XRF or pXRF analysis was undertaken to analyze the elements present in the stones, and

percentages of elements were compared in order to determine if the stones were from the same source or not.

While only the smallest of the Ferryland gravestone fragments was able to fit inside the pXRF machine, this was deemed a sufficient sample for this test as the gravestone fragment which contains the fleur-de-lis is part of the same gravestone and thus would have the same chemical composition as the smallest piece. The results from the tests on the gravestone were compared against results from contemporaneous slate roof tiles uncovered from a 17th-century structure identified in 2016 and against slate pieces from the suspected quarry site identified by Gaulton (1997) in order to determine if the pieces all contained the same compositional materials and thus were from the same source.

6.2.2 *Analytical Methods for pXRF for Gravestones and Samples*

PXRF is a non-destructive technique used to test the geochemistry of the stones in question in order to understand the potential provenance of the gravestones when compared against raw samples from the suspected quarry site. For the full report, see Appendix C, prepared by Dr. Stephen Piercey of the Earth Sciences Department at the Memorial University of Newfoundland. Samples were analyzed with an Innov-X X5000 pXRF, which was equipped with a 10W Ta tube with a 25 mm^2 silicon drift detector and <165 eV spectral resolution (Piercey 2017). Each sample was tested in multiple locations to ensure that an inclusion did not produce skewed chemical readings in the results of any of the tests. Each test was recorded and the test points were marked on the raw slate and the roof tiles, but not on the gravestones for fear of damaging the artifacts. This also

insured that we were obtaining a statistically representative dataset (Piercey 2017). The samples were analyzed using both the Mining Plus (MP) and 3 Beam Soils (S3B) modes to ensure accuracy in the readings and that all materials were being accounted for.

The pXRF machine was calibrated regularly with industry standard materials. The details of the calibration process are given in Dr. Piercey's report, Appendix 2.

6.2.3. *pXRF test results and discussion*

The results of these tests confirmed the hypothesis that the gravestones were made from the same stone as the 17th-century slate roof tiles, and that the slate for both objects was sourced from a local slate outcrop. Binary plot results of the tests are presented in Figure 6.5 and display significant overlap between all test materials. The K_2O-Fe_2O_3 and TiO_2-CaO show considerable scatter but there is overlapping between all populations (Peircey 2017:2). Some scatter is present in Figure 6.5 due to the weathering of specific elements, however these data overlap as well.

Given the overlap of tiles, gravestones and quarry materials it is entirely permissive (and likely) that the tiles and gravestones were obtained from the quarry materials analyzed (Piercey 2017:2). Therefore, the early settlers at Ferryland were not only getting their slate for roof tiles from a nearby source that was easily accessible from land and sea, but that the material for the gravestones was coming from the same location, as first suggested by Dr. Gaulton (1997). These results also suggest that the Ferryland gravestones are among the oldest British-carved gravestones in North America, and

tangible evidence of an established burial culture moving across the Atlantic during the immigration to North America.

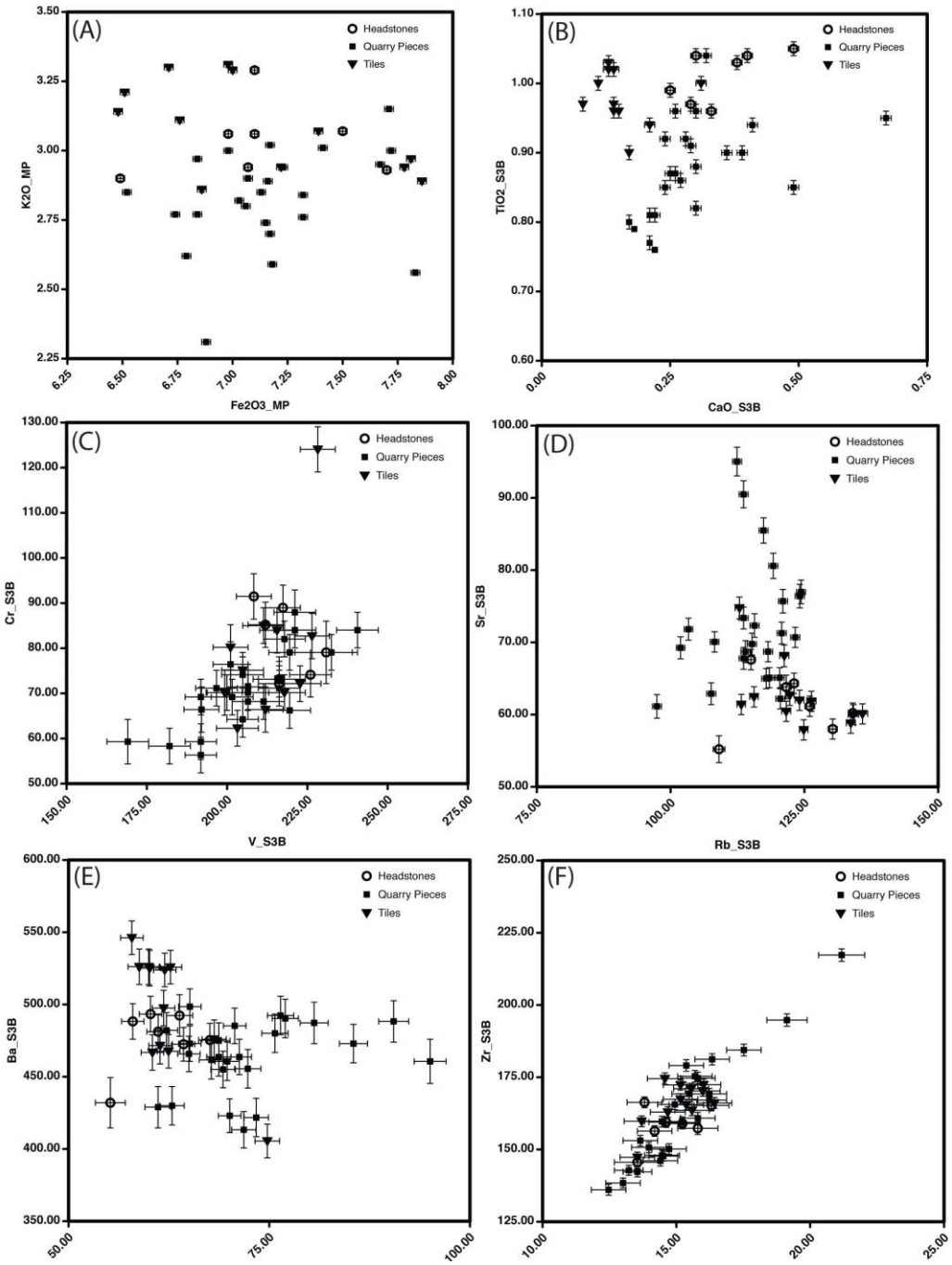

Figure 6.5: pXRF data for various materials from Ferryland region: A) K2O-Fe2O3 from MP mode; and those from soils mode - B) TiO2-CaO; C) Cr-V; D) Sr-Rb; E) Ba-Sr; and F) Zr-Nb. Tables and caption prepared by Dr. Stephen Piercey, 2017.

Chapter 7

Discussion and Conclusions

7.1 Discussion

While the stereotype for 17th-century colonial settlements on the east coast of North America is one that has burials surrounding a church in the centre of town, the statistical analysis presented in this thesis suggests that this arrangement was in a minority of cases. Many factors played into the development of the early colonial landscape cultivated by the British and Irish settlers in the 17th century; political, religious, and social elements are present when exploring the placement and designs of a burial ground. The Protestant Reformation could perhaps be counted as one of the largest influences on the design of early colonial burial landscapes. The Reformation removed many aspects of what some considered the medieval Catholic 'cult of the dead', forbidding prayers to aid the soul in departing Purgatory, removal of religious images through iconoclasm, destruction of rood screens and other church structures, and the Dissolution of the Monasteries which had been standing for hundreds of years.

With the restructuring of the church system in the British Isles came a restructuring of the burial landscapes as well. Catholics were no longer permitted to practice their burial rites, nor bury their dead in what had previously been their consecrated ground. In addition to the now-subdued Catholic burial practices, growing groups of dissenters, extremely strict Protestant practitioners, believed that because prayers were no longer said for the dead then the burial of a corpse in consecrated ground was no longer a requirement for passage into Heaven, and advocated for the creation of

‘burial grounds’ free from church consecration. These people became known as the Puritans, and would face years of oppression in the British Isles before they were granted the right to bury their dead how they saw fit.

However, those 17th-century Puritans were among some of the first groups to come across to North America during the colonial period, and they carried with them the burial beliefs they were not allowed to exercise back home. The concept of the unconsecrated, municipal burial ground would take some time to gain traction back in England, but in a land free from the constraints of an established church and government, groups of Puritans used this as an opportunity to establish themselves within the growing 17th-century burial landscape in colonial North America, founding the basis of settlements such as Boston MA, and Hartford, CT.

Puritans were not the only religious denomination to sail across the Atlantic during the early 17th century. The first major settlements established by the British along the American coastline were influenced by the Anglican Church: Jamestown, VA, and the Popham Colony, ME. These settlements were established with a church in the centre of town, upholding the idea that this was traditional for the whole of the coast. While the Popham Colony did not last long, detailed records show that the church was built with a planned churchyard surrounding the building. The first Anglican church at Jamestown boasts some of the most famous colonial burials in North America, four individuals buried within the chancel who held great power within the community. Although Anglicans and Puritans made up the majority of early settlers in the 17th-century British colonial shore, there were also Catholics, Quakers, Jesuits, and other Christian factions.

An examination of the religious, social, and political backgrounds behind the creation of a settlement, affords a glimpse into the motivation and reasoning of those who planned and built the town. Where the burial ground was located in relation to living and working spaces is heavily influenced by not only their social beliefs of church and state, but also how the society at the time dealt with death, how their relationship with human mortality stood. Today, burial spaces are often on the outskirts of a settlement, pushed away from the spaces regularly visited by the living and often not thought about unless absolutely necessary. This was not common practice in the 17th century, though more remote burial sites were being established due to overcrowding and growing health risks, a fear that persists in western society today; the corpse as dangerous. In the British Isles, historic burial spaces were often associated directly with the church in the form of a graveyard, and thus were close to the heart of the settlement. Medieval towns often had the church on one fork in the main road through town, with a market where the roads met, and the other paths leading out of town and towards a manor house or castle, such as the northern English town of Warkworth, Northumberland. The sight of burials near homes and daily life would have been not only normal, but accepted as a regular reminder of the mortality of humanity.

As groups of settlers from the British Isles began to move into North America, they may have carried the changing ideals of the post-Reformation period and a fractured national faith, but they also brought with them the desire to keep the dead close in a strange land. They used their dead to make a place for themselves in a stolen landscape, to establish themselves in a way that has continued in North America settler communities

to this day: an eternal resting place for the dead, thus physically asserting their ownership of the land.

Newfoundland settlements were also explored as part of this research, though were not included in the statistical model which was applied the Ferryland. While many settlements in Newfoundland were established in the 17th century, reliable mapping and documentation is rarely available from this century. Instead, settlements along the Avalon Peninsula which were included in the Newfoundland model had burial grounds which could be dated to the 18th century, with the knowledge that the settlement predated those records and the burial ground itself likely did as well. Newfoundland's British burial landscape in the early 18th century was not governed so much by the will of the church – as there were no established churches or clergy members in Newfoundland until the 1800s to consecrate the grounds – but by the growing folk traditions of an isolated group of people. The earliest of these settlements, Cupids (Cupers Cove) and Ferryland, were established in 1610 and 1621 respectively, but a burial ground at either site has yet to be identified.

George Calvert, the first proprietor of the Ferryland colony, was raised as a Catholic, but presented himself throughout school and his career as a practicing Anglican for the eyes of the state. With his public return to the Catholic church in 1625, he set his sights on turning his budding Colony of Avalon at Ferryland, Newfoundland into the first religiously tolerant colony in the 'new world'. The town itself was a wonder of colonial engineering, with a deep ditch and palisade complete with an earthwork embankment and bastion for the defense of the settlement, and buildings constructed primarily of slate from local quarries. While no church was built in Ferryland during the 17th century, Anglican

and Catholic services were held in Calvert's Mansion House to promote the tolerant nature of the colony, though abhorrent to some of the inhabitants.

Upon the arrival of Calvert and his family in 1628, the settlement experienced a particularly difficult winter, and several of the settlers died of unnamed causes. Only one letter recorded their deaths and indicated that nine or ten people perished, but mentioned nothing about what was done with their bodies. During excavations at Ferryland in the 1990s, three broken pieces of gravestones were recovered from 17th-century soil strata, suggesting that not only had there been an established burial ground at the settlement to warrant the creation of such gravestones, but that the gravestones had later been smashed and discarded. With no other historical mention of the burials in contemporaneous texts, it has been suggested that Sir David Kirke and company may have been responsible for the destruction of the gravestones, effectively erasing the Catholic presence on the landscape.

Through surveying 17th-century British colonial settlements along the eastern coast of North America and Newfoundland, this research aimed to explore mechanisms by which the earliest colonial settlers established a burial landscape to house their dead. Through this research, patterns in popular burial locations were identified for different regions and social groups, and all of this information was applied to Ferryland to narrow down locations for ground-truthing the potential location of the 17th-century burial ground associated with the Calvert period of occupation at the settlement from 1621 to 1637.

7.1.1 *Summary of Results*

The results of this project can be broken into two major sections, statistical analysis and fieldwork results, including a study of the Ferryland gravestones.

The statistical frequency analysis examined settlements with a similar background to Ferryland including dates established, religious and social background of the individuals who created the settlement, and geographic similarities such as proximity to the coastline. Within each settlement, I examined the spatial relationship between burial grounds and the earliest organization of that settlement, applying a list of standardized questions to each settlement in order to obtain results which could be quantified using the statistical analysis program SPSS. The model was two-fold: one portion for the 17th-century settlements, and the second for primarily 18th-century, Newfoundland settlements for comparison to the first model. The results shed light on newly established burial landscapes in a North American context and how it was changing from the traditions carried out in the British Isles prior to the colonial period.

While the results were mainly expressed in terms of the entire geographical and cultural span of northeast British North America, this method did not provide results that were as statistically significant as when comparing regions of similar religious and political backgrounds. While overall, 65.1% of settlements in the 17th century (43 were surveyed) did not have a church associated with their burial ground, when broken into regions the results were much more significant, with 80% of burial grounds in Massachusetts and 81.8% in Connecticut not being associated with churches, but 100% of sites surveyed in Virginia had an established church and graveyard. This was important information when applying the model to Ferryland, as there was no formal church

established at the settlement in the 17th century. Originally, the suspicion was that towns enclosed by fortifications in a similar manner to Ferryland would have recognizable patterns regarding the placement of burials inside or outside the walls, the results instead demonstrated that for early settlements similar to Ferryland, there was a 50 / 50 split. However, when looking again at regional differences, it is seen that no 17th-century settlements in the Massachusetts or Connecticut territories, nor later settlements in Newfoundland buried their dead within the walls, and only 40% of settlements in Virginia chose to bury inside the walls of their towns.

Patterning at a regional level is much more apparent, and therefore useful for future research. When geographically permitted, burials were placed on elevated landforms, as is overwhelmingly the case in the Newfoundland model with 94.7% of burial grounds being elevated from the rest of the settlement. This is likely for reasons of practically. Elevated ground would not have been as desirable for fishing-related infrastructure, farming, or for building homes, and thus was designated for the dead. In Newfoundland, this became a tradition for people who worked mainly at sea, to bury their dead with a last view of the ocean.

It was also established that the most desired place for a burial ground was in the centre of the settlement, with 41.5% of all areas studied having a central location. Broken down, 40% of burial grounds were central in Massachusetts, 45.5% in Connecticut, 60% in Virginia, and 31.6% later in 18th-century Newfoundland. These regional breakdowns were chosen as the focus due to the sheer number of settlements founded in these areas during the 17th-century. Sites surveyed for this model ranged along the North American

coastline, but in some states and provinces there were too few settlers to warrant a inclusion in this frequency analysis.

This data, presented in raw form in Appendix A, is the first wide-scale spatial analysis of early North American burial landscapes, and it is my hope that this data can not only inform future researchers about existent sites, but aid in the investigation and identification of lost' burial grounds. The original intention was to call this a 'predictive model', but human behaviour is not something one can easily quantify, and while patterns have emerged as guided by a society's beliefs and governance at the time, they are by no means predictable and consistent in like-minded communities, no matter how similar they seem.

The results of the statistical analysis were used to narrow down the potential locations of the 17th-century burial ground at Ferryland, as no wide scale, systematic search had taken place prior to 2015. Using the patterns in burial placement identified in the frequency analysis, coupled with the archaeological evidence at Ferryland, locations for excavation were identified at the Colony of Avalon.

Excavations took place in statistically likely locations to the east and south of the walled settlement, where archaeologists suspected that burials would be located. This suspicion was based on the proximity of the Ferryland gravestones, recovered from years previous, as well as a belief that there would not be room within the walled settlement for a large burial site. While excavations went well in 2016, burials were not uncovered during the season; however the results did greatly add to our knowledge of the settlement. In addition, the discovery of portions of the southern defensive ditch allowed me to discount a large portion of the hillside as a potential location for human interment. The

further discovery of a large slate refuse at the eastern extent of the settlement lays the groundwork for further investigation on slate processing activities at the colony. In 2017, the excavations focused on areas within the settlement walls which had either been left unexcavated or had been fully excavated but not carefully checked for features in the subsoil that could indicate burials. These central areas were in much closer proximity to where the two smaller gravestone fragments had been uncovered north of the brewhouse, and all spaces chosen for excavation could have fit 10 to 20 individuals. While all of the areas surrounding the brewhouse had a very high probability for containing burials, none were identified. In addition to this area, two trenches were opened on the bastion south of the brewhouse at the end of the 2017 excavation. While this added a great deal to our knowledge of how these early earthworks at Ferryland were constructed by the first group of settlers, the landform also proved negative for containing burials. Indeed, the amount of loose stones that made up the majority of the bastion fill would have made a very unstable area for digging or burying bodies, made obvious by the encountered problems with collapsing trench walls during the course of the excavations.

The excavations for this project applied the most statistically-likely locations suggested by the model created through a study of similar settlements to Ferryland. While the project did not identify the location of an established burial ground at Ferryland, this on now way detracts from the usability and importance of the model itself, nor that of the subsequent fieldwork. Rather, the results suggest that Ferryland may be an anomaly in terms of the statistical analysis, furthering the evidence that one cannot easily quantify human behavior. If every aspect of a cultural or social group is similar, they still will not perform in the same way when separated and living in relative isolation, and I believe that

this is evident when looking at a site like Ferryland, or indeed any colonial settlement in North America.

This project did not identify locations at Ferryland that contained burials. Negative results are important results in this line of research, and being able to say where the burials are not is just as important as having uncovered them. There are no burials between the eastern ditch and the modern kitchen garden, an area which had been speculated upon for many years to the point that graves are depicted there on two of the sites interpretive signs as being in that location. Archaeological investigation in 2016 confirmed that no burials are present in this location. It was also determined that there is no burial ground immediately south of the settlement, on either side of the bastion and extending east to a point where the old and new lighthouse roads meet. This was determined through extensive testing in the form of trenches and test pits. Additional test pits dug by Dr. Gaulton and his team in 2016 further confirmed that burials are not located in the field to the immediate east of the walled settlement. Additionally, the 2017 excavations determined that there are no burials located to the south of the brewhouse, nor were they in the space to the north, or underneath the space which once contained the Kirke House. Those results suggest that unless the graves and all evidence of their presence in the subsoil was completely eradicated, that the burial ground were not located in this area of the walled settlement at any time. The trenches on the bastion also confirmed that this earthwork mound would not have been chosen as a place for burials, and indeed it was an unlikely location to begin with.

The geologic and textual study of the Ferryland gravestones proved to be beneficial for solidifying our understanding of stone sourcing and use at the site. Results

of the pXRF analysis showed considerable overlap in the tests of slate samples taken from the quarry site, 17th-century slate tiles, and the Ferryland gravestones, identifying the quarry site as the source of material for both artifact types. This is significant to the burial spaces at Ferryland as it was determined that gravestones were being produced for the population at the site, thus expanding the taskscape associated with the burial landscape of the early 17th century. Through studying the script styles on the three surviving gravestone fragments, I determined that the lettering is congruent with styles popular in the early half of the 1600s, confirming that these stones were likely carved for those settlers who perished in the winter of 1628/29.

7.1.2 *Further Questions & Directions*

There is one main question that does come out of this research: where are the burials at Ferryland? There are several answers to that question worth exploring in future research, each of which could contribute further to our understanding of the burial landscape at the 1621 settlement.

One option is that the burials are in a less statistically likely location than was indicated by the model. Since this research is the first application of this kind of data in a predictive manner, and because there was no 100% results in any direction, it is quite plausible that the Ferryland burial ground was placed in a ‘less popular’ location. This would include the western portion of the settlement area, the majority of which is currently underneath two modern houses and is unavailable for testing or large-scale excavation. In addition, a hole from a large house foundation was dug in the late 20th century and could have potentially destroyed the burials if they had been in that area.

The destruction of the early burials is not to be discounted of course. The soil at Ferryland is very acidic, and while we were observing higher than expected rates of organic preservation in the form of pieces of wood and faunal remains in 17th-century layers at the site in 2017, that does not account for the rate of decomposition of human remains in such environments. Had the burials occurred without a coffin, the body would have degraded even quicker, and by the time a 19th- or 20th-century house foundation or cellar was being dug they might not even notice a change in the soil, and there might not have been any remains left to identify as human. Just as likely, the 17th-century settlers in Ferryland were already aware of how rocky and difficult it was to dig through the subsurface when constructing their houses, and excavating the defensive ditch, and digging wells, and they may not have wished to dig deep into the compact subsoil to bury their dead. If that were the case, graves would have been shallow, and the bodies could have decomposed by the time the area became farmland. Subsequent plowing could easily have cut through any evidence of the graves, leaving them invisible to us on not only the modern landscape but the modern subsurface as well.

It is unlikely for the burials to have been placed north of the original cobblestone street, as much of that area of the settlement was built upon made land and utilized almost exclusively for commercial and fishing-related activities. Had they been located on the outer arm of the pool which extends from the colony and protects the harbour, it is most likely that the graves themselves would be long gone. A naturally occurring tidal spit such as the one at Ferryland is subject to frequent movement, and has likely moved since the 17th century. By the same line of thinking, a large portion of the northern shoreline of the site has succumb to coastal erosion within the last two decades, and there is no way of

knowing how much of the landform has been lost since the 17th century. Had the burials been to the north, also predicted as a likely location in the overall frequency analysis, the graves and the entire landform holding them would have vanished into the ocean long ago. However, if this were the case, there would likely be local stories about bones or artifacts eroding out of the banks, and no such stories exist. In addition, a northern location does not account for the gravestone fragments being found so close to the centre of the settlement.

A popular question frequently asked by visitors to the site was could the individuals have been buried at sea. I do not believe so, based on the following evidence. First, burial at sea would not warrant gravestones which begin with the phrase 'Here lyeth the body of…' Second, the deaths that were recorded happened in the winter. Newfoundland is famous for its harsh winter winds, and in order to ensure the bodies would not roll back up on shore one would have to sail out past the protection of Ferryland Head to the east into open and unprotected waters in the middle of winter to dispose of the bodies. Not only is that unsafe for the living, but it makes it very hard to comply with Anglican religious rules regarding burial at sea. The Anglican Book of Common Prayer 1662 presents prayers for the burial of sailors at sea in a special case, but that burial in land was the only acceptable way for disposing of a body (Buchanan 2015:115). This is an unlikely scenario to play out in the winter off the coast of Newfoundland. Not much is known about Catholic burial practices in the post-Reformation years, but it is likely along the same lines as the Anglican rules surrounding burial at sea: don't do it, unless in exceptional cases. For example, a case was made for a sea burial during the search for George Popham's grave in Maine, but discounted because

of the rough winter (Brain 2016:15). I would suggest the same reasoning for the burials at Ferryland. In addition, burial at sea is usually reserved for those who have died at sea, or sailors. Many of the people at Ferryland in the late 1620s were not sailors but common folk and thus a burial at sea would not have been fitting, and would have gone against the belief that your body must be buried so that it would be ready for the Resurrection. Burial at sea in Ferryland would have been unreasonable.

For the statistical model, there are several ways this information can be utilized by future researchers. First, I would suggest that the model be expanded upon. This was a cursory study based on the knowledge that I would apply the information to Ferryland, and thus was only looking at coastal towns. The majority of the 17th-century settlements in New England were along the coast, but I selectively choose early 17th-century coastal settlements, and therefore did not acquire the full breadth of variability present in the burial landscape throughout the 17th century. Further research could expand the model to encompass later settlements, places not on the coast, and introduce more variables to the model to increase the accuracy of the spatial analysis. Furthermore, additional research needs to be done on settlements founded by nationalities other than the British in order to accurately compare these results against what others were doing around the same regions during the colonial period. It will be beneficial to future research if the data is expressed through regional, and perhaps religious parameters, rather than exploring the entire coastline over the course of 100 or more years, as small breakdowns expressed less variability and thus improved the accuracy of the predictive potential of the model. I believe that the statistical frequency analysis can shed light as to the spatial relationship between burial spaces and living spaces on not only a wide-scale level, but a community

level as well, and there is definitely applications for this data to be applied to projects looking at town planning, management, and a population's relationship with 'morbid' spaces.

7.2 Conclusions

The early 17th-century burial landscape of colonial British North America remains understudied due to its often invisible presence against a more dramatic historical backdrop. While gravestones and markers do not survive with great frequency from the earliest stages of a 17th-burial ground, there is much we can learn about a population through studying the way in which their burial spaces were organized within the settlement itself. Religious, political, and social factors all influence how a society deals with mortality and its dead, and this is evident in their relationship with their burial grounds.

Throughout this research, light has been shed on the stereotypical American colonial ideal of a church surrounded by graves in the centre of town. The statistical analysis suggests that while this may be the case in some regions, the majority of towns surveyed had no church associated with their burial grounds. It was determined that a regional breakdown provided more accurate results, with approximately 80% of burial grounds not containing churches in Connecticut and Massachusetts but 100% having church association in Virginia. Like-minded people often settled near one another, thus decreasing the likelihood of divergences in the spatial organization of burial spaces. Even as the Ferryland stands as a potential anomaly against the statistical analysis, it is clear through the geologic testing conducted on the gravestones that the settlers at Ferryland

were involved in creating a physical space to house their dead by carving gravestones from local slate, somewhere near the site.

While the data collected throughout this project was applied directly to Ferryland as the case study of a predictive model, the failure to locate the burials at Ferryland in no way lessens the efficacy of the model or the accuracy of the information contained within. Rather, it suggests that the people at Ferryland, when faced with a difficult winter and many deaths in a short period of time, may have had to resort to creating a burial place that was incompatible with the results from the other sites surveyed. It also means that Ferryland may be an anomalous settlements in terms of burial organization within the 17th-century settlement, and that 10 weeks of excavation was not enough to test *every* possible location for burials. Whether the graves at Ferryland have indeed eroded into the ocean, been churned up by plows or house foundations, or are still peacefully returning to the earth somewhere unexcavated at the site is a question for future research.

The excavations at Ferryland have provided important insight into the construction of the 1621 settlement, as well as the lives of the people who lived there in those early years. Through an exploration of the burial landscape, I was able to discuss our society's changing relationship with death and burial spaces with visitors to the site on a regular basis. I strongly believe that being able to discuss these topics openly with the public was one of the real successes of this research.

The colonial burial landscape of 17th-century British North America was developed out of a desire to explore and push boundaries, but also to instill ownership over foreign lands through direct interment of remains. By further examining these hidden burial landscapes, aspects of early colonial settlements are brought to light and

with it greater understanding not only of how Europeans in North America lived and died years ago, but how our relationship with the dead has changed since then.

Bibliography

Primary Sources

Berry, John
1675 Census. *Newfoundland's Grant Banks.* Electronic document, http://ngb.chebucto.org/C1675/1675berry.shtml, accessed June 6, 2017

Faden, William
1777 A Plan of the Town of Newport in Rhode Island. Surveyed by Charles Blaskowitz. Library of Congress. Electronic document, https://www.loc.gov/resource/g3774n.ar101300/, accessed June 6, 2017.

Fisher, William and John Thornton
1689 (1st edition) *The English Pilot: The fourth book.* London. Available online at: https://archive.org/details/englishpilotcart00thor

Guy, Nicholas
1631 Letter, Nicholas Guy to Sir Percival Willoughby. *Middleton Manuscript, University of Nottingham.* Electronic document, http://www.crossroadsforcultures.ca/index.php?var=transcriptions&var2=view&transid=3&selection=letter&language=en, accessed June 6, 2017.

Kirke, David
1639 *Letter to Archbishop Laud [from Ferryland], October 2, 1639.* Electronic document, http://www.heritage.nf.ca/articles/exploration/david-kirke-letter-archbishop-1639.php, accessed June 6, 2017.

Lamb, George
1881 *Old Boston, 1645, compiled from the Book of Possessions.* Trustees of the Boston Public Library: Boston. Electronic document, http://maps.bpl.org/id/10907. Map image courtesy of the Norman B. Leventhal Map Center at the Boston Public Library.

Lamb, George
1906 *Plan of Newtowne 1635-6*[?]. Cambrige Historical Society online archives. Electronic document, http://www.cambridgehistory.org/content/1003-cmc. Map image courtesy of the Cambridge Historical Society.

Laurie & Whittle
1794 *A chart, containing the following particular plans of harbours on the eastern side of Newfoundland with sailing marks] : viz. Fermouse, Aquafort, Ferry land, and Cape Broyle, harbours ; St. John's harbour ; Carboniere, and Harbour Grace ; and Trinity harbour.* Centre for Newfoundland Studies, digitized map collection. Memorial University of Newfoundland.

Lyon, William, Thomas Kensett, James Wadsworth, and Connecticut Academy of Arts and Sciences
1806. *A plan of the town of New Haven: with all the buildings in 1748 taken by the Hon. Gen. Wadsworth of Durham to which are added the names and professions of the inhabitants at that period: also the location of lots to many of the first grantees.* New Haven: T. Kensett. Map. Accessed 28 March, 2017. Electronic document from the Library of Congress: https://www.loc.gov/item/2011589297/.

Morton, Nathaniel
1669 Sixth edition: 1855. *New England's Memorial.* Congregational Board of Publication, Boston.

St. Paul's Anglican Church Records
1757 – 1785. *St. Paul's Anglican Burials.* Electronic document, http://ngb.chebucto.org/Parish/ang-burials-1757-1785-tb.shtml, accessed June 6, 2017.

Trinity Anglican Church Records.
1770 *Bay de Verde Burials – 1770. Interred BENJAMIN RAISH.* Electronic document, http://ngb.chebucto.org/Parish/bdv-burial-ang-tr.shtml, accessed June 6, 2017.

Upham, William Phineas
1866 *Map of Salem Village, 1692. Adapted from Map.* Norman B. Leventhal Map Centre, Boston Public Library. Electronic document, http://www.leventhalmap.org/id/12894, accessed June 6, 2017.

Virginia Company
1606 *Instructions for the Virginia Colony 1606.* University of Groningen, American History Documents. Electronic document, http://www.let.rug.nl/usa/documents/1600-1650/instructions-for-the-virginia-colony-1606.php, accessed December 1, 2016.

Secondary Sources

Anschuetz, Kurt. F., and Cherie. L. Scheick
1998 Unveiling archaeological tierra incognita: Evaluating time, place-making and tradition through a cultural landscape paradigm. Paper presented at the 63rd Annual Meeting of the Society for American Archaeology, Seattle.

Anschuetz, Kert.F, Richard H. Wilshusen, and Cherie L. Scheick, Cherie
2001 An Archaeology of Landscapes: Perspectives and Directions. *Journal of Archaeological Research, Vol. 9, No. 2*: 157 – 211. Plenum Publishing Corporation.

Bain, Allison
2010 Environmental and Economic Archaeologies of Missions, Colonies, and Plantations. In *Historic Archaeology 44 (3),* pp. 1-3. Electronic document, http://www.jstor.org/stable/25762253, accessed August 1, 2017.

Barrett, John
1999 Chronologies of Landscape. *The Archaeology and Anthropology of Landscape: Shaping Your Landscape.* Ucko, P. J. and Layton, R. (editors): 21 – 29. Routledge, London

Bartram, Alan
1978 *Tombstone Lettering in the British Isles.* Lund Humphries, London.

Baugher, Sherene, and Richard.F. Veit
2014 *The Archaeology of American Cemeteries and Gravemarkers*. University Press of Florida, Gainesville, Florida.

Bay de Verde.
2016 Churches. *Town of Bay de Verde – A Town with a View, Settled in 1662.* Website. Electronic document, http://www.baydeverde.com/churches.php, accessed June 6, 2017.

Bayles, Richard M.
1888 *History of Newport County, Rhode Island. From the Year 1638 to the Year 1887, Including the Settlement of its Towns, and their subsequent Progress.* L. E. Prestion & Co.: New York. Available online at: https://archive.org/details/historyofnewport00bayl

Beirne, Francis. F.
1967 *St. Paul's Parish, Baltimore: A chronicle of the mother church*. Horn-Shafer.

Bender, Barbara
1998 Landscape: Politics and Perspectices. *Landscapes: Places, Paths and Monuments*: 19-48. London, Berg.

Bethany United Church
ND Church History. *Bethany United Church.* Website. Electronic document, https://bethanyunitedchurch.com/church-history/, accessed June 6, 2017.

Binski, Paul
1996 *Medieval death: ritual and representation.* British Museum Press: London.

Blachowicz, James
2006. *from Slate to Marble: Gravestone Carving Traditions in Eastern Massachusetts, 1770-1870.* Graver Press: Evanston, Illinois.

Blake, Silas Leroy
1897 *The early history of the First Church of Christ, New London, Conn.* Press of the Day Publishing Company: New London, CT. Available online at: https://archive.org/details/earlyhistoryoffi00blak.

Bloomer, Nona
1994 Guilford, Connecticut - The Guilford Green. *Places Journal, Vol. 9*: 56 – 65. Electronic document, http://escholarship.org/uc/item/8fc3x8mk, accessed June 6, 2017.

Boyce, Debra and Kirkam, Jean.
2016 *History of the Grace Church: Historic Village of Yorktown, Virginia.* Electronic document, http://www.gracechurchyorktown.org/history, accessed June 6, 2017.

Brain, Jeffrey Phipps
2003 Popham: the First English Colony in New England. In *Avalon Chronicles: The English in America, 1497 – 1696, Vol. 8*, edited by James A. Tuck and Barry Gaulton, pp. 87 – 116. The Colony of Avalon Foundation, Newfoundland.

Brain, Jeffery Phipps
2016 *Fort St. George II: Additional Archaeological Investigation of the 1607-1608 Popham Colony.* Occasional Publications in Maine Archaeology, Number 16. The Maine Historic Preservation Commission, and The Maine Archaeology Society: Augusta, ME.

Brainard, N.
1961 Connecticut's First Fort. *Bulletin of the Connecticut Historical Society* 26 (2): 44 – 56.

British Library Board, The
2017 Dissolution of the Monasteries, c. 1539. *Timelines: Sources from History.* The British Library. Electronic document, http://www.bl.uk/learning/timeline/item106122.html, accessed June 6, 2017.

Brück, Joanna
2005 Experiencing the past? The development of a phenomenological archaeology in British prehistory. *Archaeological Dialogues 12 (1).* Pp. 45 – 72. Cambridge University Press: Cambridge.

Buchanan, Colin
2015 Second Edition. *Historical Dictionary of Anglicanism.* Rowman & Littlefield: Lanham, Maryland.

Burr, Jean Chandler
1968 *Lyme Records 1667 – 1730.* Pequot Press: Stonington, CT.

Cárdenes, Victor, Alvaro Rubio-Ordóñez, Jörn Wichert, Jean Piere Cnudde, and Veerle Cnudde
2014 Petrography of roofing slates. *Earth-Science Review.* Electronic document, http://dx.doi.org/10.1016/j.earscirev.2014.07.003, accessed June 6, 2017.

Carter, Matthew, Barry Gaulton, and James A. Tuck.
1998. Archaeology at Ferryland, Newfoundland, 1997. *Avalon Chronicles 3*: 49-62.

Caulkins, Frances Manwaring
1874. *History of Norwich, Connecticut, from its Possession by the Indians to the year 1866.* Published by Friends of the Author in 1874. Available online at: https://archive.org/details/historyofnorwich1866caul

Caulkins, Frances Manwaring
1895. *History of New London, Connecticut: From the First Survey of the Coast in 1612 to 1860.* H.D. Utley: New London. *Reprinted by:* Applewood Books: Carlisle, MA. Available online at: https://archive.org/details/historyofnewlond00caul

Cell, Gillian, T.
1969. *English Enterprise in Newfoundland 1577-1660.* University of Toronto Press, Toronto.

Cell, Gillian. T. (editor)
1982 *Newfoundland Discovered: English Attempts at Colonisation 1610-1630.* The Hakluyt Society, London, England.

Center Church
ND *History of Center Church, The First Church of Christ in Hartford.* Electronic document, http://www.centerchurchhartford.org/about.history.asp, accessed June 6, 2017.

Chafe
2009 *The Chaffe / Chaffey / Chade / Chaffee Family Home Website.* Electronic document, http://chafetree.com/Index.htm, accessed December 1, 2016.

Citelli, A. and Bretzel, R
ND Capsula Mundi website. Electronic document, http://www.capsulamundi.it/en/, accessed December 1, 2016.

City of Cambridge
2016 *Old Burial Ground.* Cambridge Department of Public Works. Electronic document, https://www.cambridgema.gov/theworks/ourservices/cambridgecemetery/oldburialground, accessed June 6, 2017.

City of Malden
2016 *About Malden – History.* City of Malden website. Electronic document, http://www.cityofmalden.org/content/about-malden, accessed June 6, 2017.

Codignola, Luca
1988 *The Coldest Harbour of the Land: Simon Stock and Lord Baltimore's Colony in Newfoundland. 1621 – 1649.* McGill – Queen's University Press, Canada.

Colonial Williamsburg Foundation
2017 *Bruton Parish Churchyard.* Colonial Williamsburg website. Electronic document, http://www.history.org/almanack/places/hb/hbbruyd.cfm, accessed September 18, 2017.

Conyers, Lawrence B.
2004 *Ground Penetrating Radar for Archaeology.* Altamira Press, Walnut Creek, California.

Conyers, Lawrence B.
2006 Ground-Penetrating Radar Techniques to Discover and Map Historic Graves. *Historical Archaeology,* Vol. 40, No. 3, Remains of the Day: Forensic Applications n Archaeology: 64-73. Electronic document, http://www.jstor.org/stable/25617373, accessed September 14, 2016.

Corey, Deloriane Pendre
1899 *The History of Malden, Massachusetts, 1633 – 1785.* Published by the Author, Malden, MA. Available online at: https://archive.org/details/historymaldenma00coregoog

Cunliffe, Barry
1983 *Danebury; Anatomy of an Iron Age Hillfort*. London, BT Batsford LTD.

Curl, James Stevens
2000 Reprint: 2001. *The Victorian Celebration of Death.* Sutton Publishing, Gloucestershire.

Curvers, Jeanine
2010 *Burial Rituals and the Reformations in Early Modern Europe: A Comparative Study.* Master Thesis Comparative History, Utrecht University.

Cypress Cemetery.
ND *Cypress Cemetery, Saybrook Point, Old Saybrook, CT.* website. Electronic document, http://www.cypresscemeteryosct.org/, accessed June 6, 2017.

Davis, Charles Henry Stanley
1870 *History of Wallingford, Connecticut, from its settlement in 1670 to the present time, including Meriden, which was one of its parishes until 1806, and Chesire, which was incorporated in 1780.* Meriden, Connecticut. Available online at: https://archive.org/details/historyofwalling00daviiala

Davis, Jane Eliza
1907 *Round about Jamestown: Historical Sketches of the Lower Virginia Peninsula.* University of Virginia. Available online at: https://archive.org/details/roundaboutjamest01davi

Deane, Samuel
1831. *History of Scituate, Massachusetts, From its First Settlement to 1831.* James Loring: Boston, MA. Available online at: https://archive.org/details/historyscituate01deangoog

Decks Awash.
1982 *Decks Awash Vol. 11, No. 2.* Published by the Extension Service, Memorial University of Newfoundland.

Dee, Jane E.
1998 Bones Beneath Your Feet: Unmarked Graves Might Be Closer Than You Think. *Hartford Courant, Collections.* Electronic document, http://articles.courant.com/1998-10-31/news/9810310176_1_prison-inmates-town-bones-beneath-your-feet, accessed June 6, 2017.

Deemer, Sharon
1995 Reconnaissance Radar Survey in Ferryland. *Unpublished report, Earth Sciences Department, Memorial University of Newfoundland.*

Deetz, James
1977 *In Small Things Forgotten: The Archaeology of Early American Life.* Anchor Books, New York.

Dethlefsen, Edwin and James Deetz
1966 Death's Heads, Cherubs, and Willow Trees: Experimental Archaeology in Colonial Cemeteries. *American Antiquity, Vol. 31, No. 4*: 502-510.

De Voragine, Jacobus Translated by William Granger Ryan.
1993 *The Golden Legend: Reading on the Saints.* Volume II. Princeton University Press, Princeton, N.J.

Dickey, Colin
2016 *Ghostland: An American History in Haunted Places.* Viking, New York City.

Duffy, Eamon
2005 *The Stripping of the Alters.* 2nd ed. New Haven, Yale University Press.

Dwight, Timothy
1823 *Travels in New England and New York, Vol II.* Cambridge, MA: The Belknap Press of Harvard University Press.

Feinman, Gary
2001 Settlement and Landscape Archaeology. *International Encyclopedia of Social and Behavioral Sciences.* Electronic document, http://academia.com, accessed September 21, 2015.

First Parish of Newbury.
2016 *History of the First Parish Church of Newbury.* Electronic document, http://firstparishofnewbury.org/about-us/history/ accessed November 30, 2016.

Fleming, Andrew
2006 Post-Processual Landscape Archaeology: a Critique. *Cambridge Archaeology Journal* 16(3): 267-280.

Forbes, Harriette Merrifield
1927 *Gravestones of Early New England and the Men Who Made Them: 1653-1800.* Reprinted 1967. Da Capo Press, New York.

Fossier, Robert
2010 *The Axe and the Oath: Ordinary Life in the Middle Ages.* Translated by Lydia G. Cochrane. Princeton University Press, Princeton and Oxford.

Fowler, Chris and Vicki Cummings
2003 Places of transformation: Building monuments from water and stone in the Neolithic of the Irish Sea. *Journal of the Royal Anthropological Institute 9*: 1-20.

Francaviglia, Richard V.
1971 The Cemetery as an Evolving Cultural Landscape. *Annals of the Association of American Geographers* 61(3): 501-509.

Frieman, Catherine
2008 Islandscapes and 'Islandness': The Prehistoric Isle of Man in the Irish Seascape. *Oxford Journal of Archaeology 27 (2)*: 501-509.

Gates, Gilman C.
1935 *Saybrook at the Mouth of the Connecticut: The First One Hundred Years.* Wilson H. Lee Co, New Haven, CT.

Gaulton, Barry
1997 *Seventeenth-Century Stone Construction at Ferryland, Newfoundland (Area C).* Master of Arts thesis. Department of Archaeology, Memorial University of Newfoundland. St. John's, Newfoundland.

Gaulton, Barry
2006 The Archaeology of gentry life in seventeenth-century Ferryland. PhD Thesis, Department of Archaeology, Memorial University of Newfoundland.

Gaulton, Barry
2012 A Terraced Village at 'Avalon': The Construction and Evolution of George Calvert's 1621 Colony at Ferryland, Newfoundland. *Paper presented at the Council for Northeast Historical Archaeology conference.* St. John's, Newfoundland.

Gaulton, Barry
2013 The Commercial Development of Newfoundland's English Shore: The Kirke Family at Ferryland, 1638-96. *Exploring Atlantic Transitions: Archaeologies of Transience and Permanence in New Found* Lands: 278-286. The Boydell Press, Woodbridge, UK.

Gaulton, Barry, and Aaron F. Miller
2009 Edward Wynne's *The Brittish India or A Compendious Discourse tending to Advancement* (circa 1630-1631). *Newfoundland and Labrador Studies 24 (1),* pp. 111-120.

Gaulton, Rick
2001 An Early Historic Beothuks Occupation at Ferryland, Newfoundland. In *Avalon Chronicles. Vol. 6,* edited by James A. Tuck and Barry Gaulton, pp. 19 - 56. The Colony of Avalon Foundation, Ferryland, Newfoundland.

Gilbert, William
2003 Finding Cupers Cove. In *Avalon Chronicles: The English in America 1497-1696. Vol 8,* edited by James A. Tuck and Barry Gaulton, pp. 117-154. The Colony of Avalon Foundation, Newfoundland.

Gilbert, William
2008 New Discovery: Cemetery Discovered at Cupids Site. *Baccalieu Trail Archaeology.* Electronic Document, http://www.baccalieudigs.ca/default.php?display=modDiscoveries&pageNum=5, accessed June 8, 2017.

Gilbert, William
2017 Aspects: "An Orpheus in Newfoundland"? Sir William Vaughan, John Oldmixon, DW Prowse and Trepassey. *Newfoundland Quarterly, Volume 109, Number 4*: 38-45. Memorial University of Newfoundland, St. John's, Newfoundland and Labrador.

Gittings, Clare
1984 *Death, burial and the individual in Early Modern England.* Routledge, London

Goodwin, Standley
ND Marblehead in the 1600's. *Slideshow for the Marblehead Museum and Historical Society.* Electronic document, http://marbleheadmuseum.org/Marblehead_in_the_1600s.pdf, accessed June 6, 2017.

GPRS.
2016 Limitations of GPR / Definition of GPR. *Ground Penetrating Radar Systems Inc.* Electronic document, http://gp-radar.com/Limitations-of-GPR.html, accessed October 24, 2016.

Graves, C. Pamela
2008 From an Archaeology of Iconoclasm to an Anthropology of the Body. *Current Anthropology, Vol. 49, No.* 1: 35 – 60. Wenner-Gren Foundation for Anthropological Research, University of Chicago Press.

Hall, Clayton Colman (editor)
1910 *Narratives of early Maryland, 1833-1684.* Charles Scribner's Sons, New York.

Hamilakis, Yannis
2011 Archaeologies of the Senses. *Chapter* 15: 208 – 225. Electronic document, https://www.academia.edu/1045112/Hamilakis_Y._2011_Archaeologies_of_the_senses, accessed June 6, 2017.

Handcock, G.
1996 *The Story of Trinity.* Trinity Historical Society: Trinity, Newfoundland.

Harding, Vanessa
1992 'Burial Choice and burial location in later medieval London.' In *Death in towns: urban responses to the dying and the dead, 100-1600,* edited by S. Basset, pp. 119-1335. London, Leicester University Press.

Harding, V.
2003 Choices and Changes: death, burial and the English Reformation. In *The Archaeology of the Reformation 1480-1580,* edited by David Gaimster and Roberta Gilchrist, pp. 386-398. Leeds, Maney Publishing.

Hatch Jr, C. E.
1970 *Grace Church: General Study.* Office of History and Historic Architecture, Eastern Service Centre, Washington DC.

Hillerbrand, H. J. (editor)
1968 *The Protestant Reformation.* MacMillan and Co. Ltd., London.

Hopkins, Caitlin Galante DeAngelis
2014 *The Shadow of Change: Politics and Memory in New England's Historic Burying Grounds, 1630-1776.* Ph.D. dissertation, Department of American Studies, Harvard University, Boston.

Houlbrooke, Ralph
1998 *Death, Religion, and the Family in England, 1480-1750.* Oxford: Clarendon Press.

Houlbrooke, Ralph
1999 The Age of Decency: 1600-1760. In *Death in England: An Illustrated History.* Edited by Peter J. Jupp and C. Gittings, pp. 174-201. Manchester University Press, Manchester, England.

Hurd, Duane Hamilton
1882 *History of New London County, Connecticut, with Biographical Sketches of its Pioneers and Prominent Men.* J.W. Lewis & Co., Philadelphia. Available online at: https://archive.org/details/cu31924028841951

Hutchinson, R.
2001 'Tombs of Brass are spent': Reformation reuse of monumental brasses.' In *The Archaeology of the Reformation 1480-1580,* edited by David Gaimster and Roberta Gilchrist, pp.450-468. Leeds, Maney Publishing.

Ingold, Tim
1993 The Temporality of Landscape. *World Archaeology, Concepts of Time and Ancient Society* 25(2): 152-174.

Ingram, Sarah Joy
2015 *"by which so much happiness is produced": An Analysis of the Seventeenth-Century Kirke Tavern at Ferryland, Newfoundland.* Master of Arts thesis, Department of Archaeology, Memorial University of Newfoundland. St. John's, Newfoundland.

Ingstad, Helge
1985 *The Norse Discovery of America, Volume Two: The Historical Background and the Evidence of the Norse Settlement Discovered in Newfoundland.* Norwegian University Press, Oslo.

Intangible Cultural Heritage
2016 Branch. *Intangible Cultural Heritage Collections, Department of Folklore, Memorial University of Newfoundland.* Digital Collections. Electronic document, http://www.mun.ca/ich/inventory/profiles/branch/, accessed June 6, 2017.

Jackson, John Brinckerhoff
1984 *Discovering the Vernacular Landscape*, Yale University Press, New Haven.

Jamestown Rediscovery
2016 *1608 Church: A Pretty Chapel.* Historic Jamestowne. Electronic document, http://historicjamestowne.org/archaeology/map-of-discoveries/1608-church/, accessed December 1, 2016.

Juli, Harold D.
1991 Historical Archaeology at Saybrook Point, Connecticut: Excavation and Interpretation at an Archaeological and Historic Park. *Northeast Historical Archaeology, Vol 20, Issue 1*: 71 – 90.

Keene, Melanie, Pamela Keene, and Kevin Auger
1999 The Grave Site: Point of Graves Burial Ground, Graves, Genealogy, Ghosts. *Seacoast NH website.* Electronic document, http://www.seacoastnh.com/dead/graves.html, accessed June 6, 2017.

Kelly, Jacques
1992 *The Voice of This Calling: Saint Paul's Parish – Baltimore, Maryland, 1692 – 1992.* Vestry of Saint Paul's Parish, Baltimore, Maryland.

Kelso, William M.
2006 *Jamestown: The Buried Truth.* University of Virginia Press, Charlottesville and London.

King, A. F.
1988 Geology of the Avalon Peninsula, Newfoundland (parts of 1K, 1L, 1M, 1N and 2C). Newfoundland Department of Mines and Energy, Map 88 – 01. Electronic document, http://www.nr.gov.nl.ca/nr/mines/maps/nl/html_nf/images/88-01.pdf, accessed June 6, 2017.

Krugler, John D.
2004. *English and Catholic: The Lords Baltimore in the Seventeenth Century.* The Johns Hopkins University Press, Baltimore and London.

Lacy, Robyn and Andrea Freeman
In Peer-Review Vanishing Characters: charting the erosion of the roman font in North Wales and north-east Ireland.

Lahey, Raymond J.
1998 The Role of Religion in Lord Baltimore's Colonial Enterprise. *Avalon Chronicles Vol.* 3: 19 – 48. Reprinted from: *Maryland Historical Magazine, Vol. 72, No. 4. Winter 1977.*

Latour, Bruno
2005 *Reassembling the Social: An Introduction to Actor-Network-Theory.* Oxford University Press, Oxford.

Lear, Maria and Grimes, Vaughan
2016 From Airplanes to Clandestine Burials: A Preliminary Report on Archaeogeophysical (GPR) Surveys during 2016. *Provincial Archaeology Office 2016 Archaeology Review, Volume 15*: pp. 151-157. Department of Tourism, Culture, Industry and Innovation, Newfoundland Labrador. Electronic document, http://www.tcii.gov.nl.ca/pao/newsletters/pdf/Vol%2015%20-%202016.pdf, accessed June 5, 2016.

Lee, Jae Rhim
2011 My mushroom burial suit. *TED Global 2011.* Electronic document, https://www.ted.com/talks/jae_rhim_lee?language=en#t-87508, accessed June 6, 2017.

Library of Congress
2016 *Carte des environs d'Hampton.* Digitized map: Library of Congress Geography and Map Division, Washington D.C. Electronic document, , https://lccn.loc.gov/gm71002167, accessed December 1, 2016.

Linden-Ward, Blanche
1989 Strange but Genteel Pleasure Grounds: Tourist and leisure Uses of Nineteenth-Century Rural Cemeteries. In *Cemeteries and Gravemarkers: voices of American Culture,* edited by Richard E. Meyer, pp. 293-328. UMI Research Press: London.

Litten, Julian
1992, reprinted with corrections 2002 *The English Way of Death: The Common Funeral Since 1450.* London, Robert Hale.

Love, Rev. William DeLoss
1914 *The Colonial History of Hartford: Gathered from the Original Records.* Published by Author, Hartford, Connecticut. Available online at: https://archive.org/details/colonialhistoryo00loverich.

Ludwig, Allan I.
1966 *Graven Images.* Westeyan University, United States of America.

Marshall, Peter
2002 *Beliefs and the Dead in Reformation England.* Oxford University Press, Oxford, UK.

Marshall, Ingeborg
1989 *The Beothuk of Newfoundland.* Reprint 2001. Breakwater Books, St. John's, NL.

Martha Lyon Landscape Architecture LLC, Fannin-Lehner Preservation Consultants, CME Associates Inc.
2007 Scituate Burial Sites Survey, Scituate, Massachusetts. *Prepared for the Town of Scituate, Scituate Historical Society.* Electronic document, http://www.scituatema.gov/sites/scituatema/files/file/file/scituate_burial_sites_survey.pdf, accessed June 6, 2017.

McAllister, Jim
ND *Chart(er)ing a Course through Times Past – Charter Street.* Salem, Massachusetts, The City Guide. Electronic document, http://www.salemweb.com/tales/charter.php, accessed June 6, 2017.

McGrath, Barbara
2000 (revised 2002, Don Tate). History of the United Church, Brigus. *Newfoundland's Grand Banks.* Website. Electronic document, http://ngb.chebucto.org/Hr_Main/Church/United/brigus-u.shtml, accessed June 5, 2017.

Miller, Aaron. F.
2013 Avalon and Maryland: A comparative Historical Archaeology of the Seventeenth-Century New World Provinces of the Lorde Baltimore (1621 – 1644). PhD Thesis. Department of Archaeology, Memorial University of Newfoundland.

Miller, Henry M.
1986. Discovering Maryland's First City: A Summary Report on the 1981 – 1984 Archaeological Excavations in St. Mary's City, Maryland. *St. Mary's Archaeology Series #1.* An Alexander H. Morrison Fund Publication, St. Mary's City Commission, Maryland.

Mitford, Jessica
1963 *The American Way of Death.* Hutchinson and Co. LTD, London.

Moody, Anne Colman
1935 The Burial Ground. *The Sons & Daughters of the First Settlers of Newbury, Massachusetts.* Electronic document, https://www.sonsanddaughtersofnewbury.org/the-burial-ground, accessed June 6, 2017.

Mytum, Harold
2006 Popular attitudes to memory, the body, and social identity: the rise of external commemoration in Britain Ireland and New England. *Post-Medieval Archaeology* 40: 96-110.

Newfoundland's Grand Banks
2016 Old Non-Denominational Cemetery, Ferryland, Ferryland District. *Newfoundland's Grant Banks.* Electronic document, http://ngb.chebucto.org/Cemetery/cem-ferryland-old-non-fer.shtml, accessed June 6, 2017.

National Registry for Historic Places
2010 First Parish Burial Ground, Gloucester, Massachusetts. *Date listed: 26 February 2010.* National Register Information System ID: #10000040.

Norris, Albert P.
1933 *Cambridge Holdings Traced from the Proprietors'' Records of 1635.* Cambridge Historical Society. Electronic document, http://www.cambridgehistory.org/content/cambridge-land-holdings, accessed January 10, 2017.

Norris, Malcolm
1977 *Monumental Brasses: The Memorials.* London, Phillips and Page.

Paige, Lucius Robinson
1877. *History of Cambridge, Massachusetts. 1630 – 1877. With a Genealogical Register.* H.C. Houghton and Company: Boston. Available online at: https://archive.org/details/historyofcambrid00paigiala

Perkins, Frank Herman
1902 *Handbook of Old Burial Hill, Plymouth, Massachusetts: Its History, Its Famous Dead, and Its Quaint Epitaphs.* A.A. Burbank, Pilgrim Bookstore: Plymouth, Mass. Available online at: https://archive.org/details/handbookofoldbur00perki

Parks Canada
2005. Harbour Grace Registered Historic District, Harbour Grace, Newfoundland and Labrador. *Canada's Historic Places.* Website. Electronic document, http://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=2381, accessed January 23, 2017.

Parks Canada
2006a Immaculate Conception Cemetery Municipal Heritage Site, Cape Broyle, Newfoundland and Labrador. *Canada's Historic Places.* Electronic document, http://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=5764, accessed January 21, 2017.

Park Canada
2006b Old Witless Bay Cemetery, Witless Bay, Newfoundland and Labrador. *Canada's Historic Places.* Website. Electronic document, http://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=5052, accessed January 21, 2017.

Parks Canada
2007 Old St. Nicholas Anglican Cemetery Municipal Historic Site, Torbay, Newfoundland and Labrador. *Canada's Historic Places.* Electronic document, http://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=8147, accessed January 24, 2017.

Parks Canada
2008 The Old Graveyard Municipal Heritage Site, Branch, Newfoundland and Labrador. *Canada's Historic Places.* Website. Electronic document, http://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=12904, accessed January 23, 2017.

Pastore, Ralph
1989 The Collapse of the Beothuk World. *Acadiensis: Journal of the History of the Atlantic Region.* Vol. XIX. Electronic document, https://journals-lib-unb-ca.qe2a-proxy.mun.ca/index.php/Acadiensis/article/view/12292/13136, accessed June 6, 2017.

Patch, Shawn
2009 Identification of Unmarked Graves at B.F. Randolph Cemetery Using Ground Penetrating Radar (GPR). *New South Associates.* Submitted to Historic Columbia Foundation, Columbia, South Carolina.

Pearson, Harold, and Helen Pearson
1913 *Vignettes of Portsmouth: Being representations of Divers Historic Places in Old Portsmouth.* Helen Pearson and Harold Hotchkiss Bennett: Portsmouth, New Hampshire. Available online at: https://archive.org/details/vignettesofports00benn

Pfeiffer, John
ND. Duck River Cemetery 1676 – 1735. *Old Lyme Historic Society document.* Electronic document, http://www.oldlymehistoricalsociety.org/docs/duck_river_cemetery1676-1735.pdf, accessed June 5, 2017.

Pocius, Gerald L.
1975 *The Place of Burial: Spatial focus of Contact of the Living with the Dead in Eastern Areas of the Avalon Peninsula of Newfoundland.* Master of Arts thesis. Department of Folklore, Memorial University of Newfoundland.

Pocius, Gerald L.
1981 Eighteenth- and Nineteenth-century Newfoundland Gravestones: Self-Sufficiency, Economic Specialization, and the Creation of Artifacts. *Material Culture Review. Volume 12 (Spring)*: 1-16.

Pocius, Gerald L.
1986 The Transformation of the Traditional Newfoundland Cemetery: Institutionalizing the Secular Dead. *Material Culture Review, Volume 23, Spring 1986.*

Pocius, Gerald L.
1991 Folk Religion and the Ethnography of Literacy: The Image of the Word on Newfoundland Gravestones. *Studies in Newfoundland* Folklore: 259 – 286.

Porter, William S.
1838 *Hartford in 1640.* Map. Available online though: University of Connecticut Libraries. Electronic document, https://www.flickr.com/photos/uconnlibrariesmagic/3836896031, accessed February 5, 2017.

Pope, Peter E.
1993 *Documents relating to Ferryland 1597 to 1726: a textbase, including original transcriptions.* Past Present – Historic Sites and Material Culture Consulting, Torbay, NFLD.

Powicke, Frederick Maurice
1941 *The Reformation in England.* London, Oxford University Press.

Pringle, James Robert
1982 *History of the Town and City of Gloucester, Cape Ann, Massachusetts.* Published by the author: Gloucester, MA. Electronic document, https://archive.org/details/historyoftowncit00priniala, accessed June 6, 2017.

Project for Public Spaces, Inc.
2012 Creating a new future for the New Haven Green. *Draft Report, November 2012, Prepared for the Committee of the Proprietors of Common and Undivided Lands at New Haven & the City of New Haven Department of Parks, Recreation and Trees.* Electronic document, http://www.pps.org/wp-content/uploads/2012/11/New-Haven-Green-Placemaking-Plan-v2.pdf, accessed December 2, 2016.

Riordan, T. B.
1991 The Location of Fort St. Mary's: A Speculative Essay. *Maryland Historical Magazine.* Vol. 86, Winter: 371 – 386.

Riordan, Timothy B.
2000 *Dig a Grave both Wide and Deep: An Archaeological Investigation of Mortuary Practices in the 17th-Century Cemetery at St. Mary's City, Maryland.* St. Mary's City Archaeological Series No. 3. Historic St. Mary's City, Maryland.

Roads Jr., Samuel
1880 *The History and Traditions of Marblehead.* Houghton, Osgood and Company, The Riverside Press: Cambridge, Boston. Available online at: https://archive.org/details/historytradition00road

Roberts, George Simon
1906 *History towns of the Connecticut River Valley.* Robson & Adee: Schenectady, NY. Available online at: https://archive.org/details/historictownsofc00robe

Rodwell, Warwick
2012 *The Archaeology of Churches.* Gloucestershire, Amberley Publishing.

Rugg, Julie
2013 Choice and constraint in the burial landscape: re-evaluating twentieth-century commemoration in the English Churchyard. *Mortality, Vol. 18, No. 3*: 215 – 234.

Sachs, Aaron
2010 America Arcadia: Mount Auburn Cemetery and the Nineteenth-Century Landscape Tradition. *Environmental Historic 15*: 206 – 235. Oxford University Press, Oxford.

Salem Witch Museum
2016 *Site of the Meetinghouse of the First Church in Salem.* Salem Witch Museum website. Electronic document, https://www.salemwitchmuseum.com/sitestour/salem/meetinghouse, accessed June 6, 2017.

Sayer, Duncan
2011 Death and the Dissenter: Group Identity and Stylistic Simplicity as Witnessed in Nineteenth-Century Nonconformist Gravestones. *Society for Historical Archaeology, Vol. 45, No. 4*: 115 – 134.

Schultz, John J.
2012 Detecting Buried Remains Using Ground-Penetrating Radar. *Project Final Report: Submitted to National Institute of Justice, U.S. Department of Justice.* University of Central Florida, Department of Anthropology.

Sensors & Software
2016 Noggin Frequencies. Electronic document, http://www.sensoft.ca/products/noggin/noggin/, accessed June 6, 2017.

Sexton, James
2002 The Guilford Green: An Ever-Changing Landscape. *Connecticut Trust for Historic Preservation.* Electronic document, http://www.towngreens.com/DOCUMENTS/tg_guilford_case.pdf accessed December 6, 2016.

Slater, James A.
1987 *The Colonial Burying Grounds of Eastern Connecticut and the Men Who Made Them.* Memoirs of the Connecticut Academy of Arts & Sciences. Archon Books: Hamden, Connecticut.

Sletcher, Michael
2004 *New Haven: From Puritanism to the Age of Terrorism.* Arcadia Publishing, South Carolina.

Smith, Ralph Dunning
1877 *The History of Guilford, Connecticut.* J. Munsell, Printer, Albany, NY. Available online at: https://archive.org/details/historyofguilfor00smitiala

Souza, J.
2016 The Old Burial Ground on the Commons. *Sakonnet Historical.* Electronic document, http://sakonnethistorical.org/items/show/15 accessed December 8, 2016.

Spade, Katrina
2015 Urban Death Project website. Electronic document, http://www.urbandeathproject.org/, accessed June 6, 2017.

Spoelman, Colin and Haskell, David
2016 *Dead Distillers: A History of the Upstarts and Outlaws who made American Spirits.* Abrams Image, New York City.

Stannard, David E.
1977 *The Puritan Way of Death: A Study in Religion, Culture, and Social Change.* Oxford University Press, New York

Stead, I.M.
1991 *Iron Age Cemeteries in East Yorkshire*. London, English Heritage in association with British Museum Press.

Stern, Walter
1929 Versuch einer elektrodynamischen Dickenmessung von Gletschereis. Ger. Beitr. zur Geophysik 23: 292-333.

Steponaitis, Vincas P., Jeffrey D. Irwin, Theresa E. McReynolds, and Christopher R. Moore (editors)
2006 Stone Quarries and Sourcing in the Carolina Slate Belt. *Research Report 25: Prepared by the Cultural Resources Management Program, Fort Bragg, and the Research Laboratories of Archaeology, University of North Carolina at Chapel Hill.*

The Edgerton Database
ND *The Norwich Founders Monument.* Electronic document, http://freepages.genealogy.rootsweb.ancestry.com/~edgerton/FoundersMonument.htm accessed December 7 2016.

The Monumental Brass Society
1988 *Monumental Brasses: The Portfolio Plates of the Monumental Brass Society 1894-1984.* Suffolk, New Hampshire, Boydell Press.

Thomas, Julian
1993. The politics of vision and the archaeologies of landscape. In *Landscapes: Places, Paths and Monuments*, edited by Barbara Bender, pp. 19-48. Providence, Rhode Island.

Thomson, George
2006 Tombstone lettering in Scotland and New England: An appreciation of a vernacular culture. *Mortality 11 (1)*: 1-30.

Thomson, George
2009a Lettering on Irish Gravemarkers: Monaghan and Beyond. *Inscribed Histories.* 49-62. Monaghan County Council Heritage Office, Ireland.

Thomson, George
2009b *Inscribed in Remembrance; Gravestone lettering: form, function and recording.* Wordwell Ltd., Dublin.

Tilley, Christopher
2004 *The Materiality of Stone: Explorations in Landscape Phenomenology.* Bloomsbury Academic, Berg.

Trask, Debora
1978 *Life how short Eternity how long: Gravestone Carvings and Carvers in Nova Scotia, An Illustrated Study.* The Nova Scotia Museum, Halifax.

Trinity Historical Society
2014 Community Historic Sites. *Trinity Historic Society.* Website. Electronic document, http://www.trinityhistoricalsociety.com/community_historic_sites.htm, accessed June 6, 2017.

Trinkley, Michael, and Hacker, Debi
2011 *Master Plan for Eastern Cemetery, City of Portland, Maine.* Prepared for Spirits Alive but the Chicora Foundation, Inc. Electronic document, http://www.chicora.org/pdfs/RC534%20Eastern%20Cemetery%20final%20compressed.pdf, accessed June 6, 2017.

Tuck, James
1976 *Newfoundland and Labrador Prehistory.* National Museum of Man, Ottawa, Canada.

Tuck, James
1996 Archaeology at Ferryland, 1936 – 1995. In *Avalon Chronicles, Vol. 1*, edited by James A. Tuck and Barry Gaulton, pp. 21 – 42. Colony of Avalon Foundation, Newfoundland.

Tuck, James, and Barry Gaulton
2003 The Archaeology of Ferryland, Newfoundland, until 1696. In *Avalon Chronicles: The English in America 1497 – 1696, Vol. 8*, edited by James A. Tuck and Barry Gaulton, pp. 187-224. Colony of Avalon Foundation, Newfoundland.

Tyler, Lyon Gardiner
1922 *History of Hampton and Elizabeth City County, Virginia.* The Board of Supervisors of Elizabeth City County: Hampton, VA. Available online at: https://archive.org/details/historyofhampton00tyler

Undertaking LA
ND Undertaking LA: Bringing Death Back Home. Electronic document, http://www.undertakingla.com/, accessed June 6, 2017.

Warden, G.B.
1976 Newtowne, 1630 – 1636. *The Cambridge Historical Society.* Electronic document, http://www.cambridgehistory.org/content/newtowne-1630-1636, accessed January 5, 2017.

Waters, Thomas Franklin
1905 *Ipswich in the Massachusetts Bay Colony.* The Ipswich Historical Society: Ipswich, MA. Available online at: https://archive.org/details/ipswichinmassach00water

Wells, Dave
1984 (revised 2013 Craig Peterman). Old RC Cemetery, Bennett's Lane, Harbour Grace, Harbour Grace District. *Newfoundland's Grand Banks.* Website. Electronic document, http://ngb.chebucto.org/Cemetery/cem-old-rc-hr-grace-hg.shtml, accessed March 15, 2017.

Westerdahl, Christer
2010 'Horses are Strong at Sea': the Liminal Aspect of Maritime Cultural Landscape. In *The global origins and development of seafaring,* edited by Atholl Anderson, James H. Barrett, and Katherine V. Boyle, pp. 275-288.

Worpole, Ken
2003 *Last Landscape: The Architecture of the Cemetery in the West.* Reaktion Books Ltd, London.

Yetter, George H
1988 *Williamsburg Before and After: The Rebirth of Virginia's Colonial Capital.* Colonial Williamsburg Foundation, Williamsburg, Virginia.

Appendices

Appendix A

17th-century British-founded settlement survey: spatial analysis of burial landscape

Purple indicates research was done, but was not included in the statistical analysis.

Orange indicates that that variable is still unknown and appears as 'missing' in the statistical analysis.

A. 17th-century British settlement Survey, east coast.

SITE NAME	TOWN	DATE BURYING GROUND ESTABLISHED	FORTIFIED TOWN	BURIAL INSIDE FORTIFICATION	CHURCHYARD/ MEETING HOUSE ASSOCIATED	ELEVATED IN TOWN	CENTRE	N	S	E	W
Men of Kent Cemetery	Scituate, MA	1624	no	no	no	yes	yes	no	no	no	no
Old Burial Hill	Marblehead, MA	1638	no	no	yes	yes	no	yes	no	no	no
The Common Burial Ground	Newport, RI	1639	no	no	no	yes	no	yes	no	no	no
Cole's Hill	Plymouth, MA	1620	yes	no	no	yes	no	no	no	yes	no
Burial Hill	Plymouth, MA	1622	yes	no	yes	yes	no	no	no	no	yes
First Parish Burial Ground	Gloucester, MA	1644	no	no	yes	yes	yes	no	no	no	no
Jamestown	Jamestown, VA	1607	yes	yes	yes	no	yes	no	no	no	no
St. Mary's City	St. Mary's City, Maryland	1630's	yes	no	yes	yes	no	no	no	yes	no
King's Chapel Burying Ground	Boston, MA	1630	no	no	no	yes	yes	no	no	no	no
Copp's Hill	Boston, MA	1659	no	no	no	yes	no	yes	no	no	no
Granary Burying Ground	Boston, MA	1660	no	no	no	yes	yes	no	no	no	no
Ancient Burying Ground	Hartford, CT	1640	no	no	no	yes	yes	no	no	no	no
Center Street Cemetery	Wallingford, CT	1670	no	no	no	no	no	no	no	no	yes
New Haven Green	New Haven, CT	1638	no	no	no	no	yes	no	no	no	no

SITE NAME	TOWN	DATE BURYING GROUND ESTABLISHED	FORTIFIED TOWN	BURIAL INSIDE FORTIFICATION	CHURCHYARD/ MEETING HOUSE ASSOCIATED	ELEVATED IN TOWN	CENTRE	N	S	E	W
Burial Ground of the First Settlers	Old Town, Newbury, MA	1635	no	no	no	no	no	yes	no	no	no
Old Town Cemetery	Old Town, Newbury, MA	1650-70?	no	no	no (500m away)	no	no	no	no	yes	no
Old North Burying Ground	Ipswich, MA	1634	no	no	no (600m away)	yes	no	no	no	no	yes
Old Burial Ground (Burying Place)	Cambridge (Newtowne), MA	1635	yes	yes/no	no	no	no	yes	no	no	no
Bell Rock Cemetery / Sandy Bank Cemetery	Malden, MA	pre-1649	no	no	no	no	no	no	no	no	yes
Bruton Parish Churchyard	Williamsburg, VA	1678	no	no	yes	no	yes	no	no	no	no
Point of Graves	Portsmouth, NH	1671	yes	yes	no	yes	no	no	no	yes	no
Historic Grace Churchyard	Yorktown, VA	1691	yes	yes	yes	yes	yes	no	no	no	no
Martiau Burial Ground	Yorktown, VA	Mid 1600's	yes	UNKNOWN	no	yes	UNKNOWN				
The Guilford Greene Burying Ground	Guilford, CT	1639/1640	no	no	no (church established in 1643)	no	yes	no	no	no	no
Little Compton Commons	Little Compton, RI	1678	no	no	yes	yes	yes	no	no	no	no
Ye Antientist Burial Ground	New London, CT	1645 - 1652/3?	no	no	yes	yes	yes	no	no	no	no
The Burying Point (Charter Street Cemetery)	Salem, MA	1637	no	no	no	yes	yes	no	no	no	no
Broad Street Cemetery	Salem, MA	1655	no	no	no	yes	yes	no	no	no	no
Old Cove Burying Ground	East Haddam, CT	1691/1692	no	no	no	yes	no	yes	no	no	no
Duck River Burying Ground	Old Lyme, CT	1670's	no	no	no	no	no	no	yes	no	no
Meeting House Hill Burying Ground	Old Lyme, CT	1660's	no	no	yes	yes	no	no	yes	no	no

SITE NAME	TOWN	DATE BURYING GROUND ESTABLISHED	FORTIFIED TOWN	BURIAL INSIDE FORTIFICATION	CHURCHYARD/ MEETING HOUSE ASSOCIATED	ELEVATED IN TOWN	CENTRE	N	S	E	W
Ancient Norwich Burying Ground (Post and Gager Cemetery)	Norwich, CT	1661	no	no	no	yes	no	no	no	no	yes
Norwichtown Burying Ground	Norwich, CT	1690s	no	no	no	yes	yes	no	no	no	no
The Chapell	Popham Colony, ME	1607	yes	yes	yes	yes	yes	no	no	no	no
Cypress Cemetery	Old Saybrook (Saybrook Fort), CT	1635	yes	no	no	no	no	no	yes	no	no
Saybrook Fort - Lady Fenwick's Tomb	Old Saybrook (Saybrook Fort), CT	1646	yes	yes	no	no	yes	no	no	no	no
The Old Burying Ground	York, ME	1636 (chapel built - personal communication Emerson Baker)	no	no	yes	yes	no	no	yes	no	no
Eastern Cemetery	Portland, ME	1668	no	no	no	yes	yes	no	no	no	no
Old Settler's Cemetery (Thrashers Cemetery)	South Portland, ME	1658	no	no	no	no	no	no	no	yes	no
First Church, St. John's Episcopal	Hampton, VA	1610ish	no	no	yes	no	yes	no	no	no	no
Second Church, St. John's Episcopal	Hampton, VA	1623/4	no	no	yes	no	no	no	no	yes	no
Third Church, St. John's Episcopal	Hampton, VA	1667	no	no	yes	no	no	no	no	no	yes
First St. Paul's Churchyard	Baltimore, MD	1692	no	no	yes	no	UNKNOWN				

B. 18th-century British settlements, Newfoundland.

SITE NAME	TOWN	DATE BURYING GROUND ESTABLISHED	FORTIFIED TOWN	BURIALS INSIDE FORTIFICATION	CHURCHYARD/ MEETING HOUSE ASSOCIATED	ELEVATED IN TOWN	CENTRE	N	S	E	W
Ferryland Burial Ground	Ferryland, NL	1621	yes	???	?	?	no	?	?	?	?
Old Non-Denominational Cemetery	Ferryland, NL	UNKNOWN potentially later 17-18th century	yes	no	no	yes	no	no	no	no	yes
North Side / Anglican Cemetery	Ferryland, NL	mid C18th	yes	no	no	yes	no	no	no	no	yes
New RC Cemetery	Ferryland, NL	1870 (at least)	no	no	no	yes	no	yes	no	no	no
Cupids	Cupids, NL	1610	yes	UNKNOWN	no	yes	no	no	no	yes	no
Immaculate Conception RC Cemetery (modern name)	Brigus South	likely late 1600s. Earliest surviving stone: 1750	no	no	no	yes	no	no	no	yes	no
Old RC Cemetery	Harbour Grace (Brisol's Hope)	1799	no	no	no	no	no	no	no	no	yes
St. Paul's Churchyard Cemetery	Harbour Grace (Brisol's Hope)	mid C18th	no	no	yes	yes	no	no	no	no	yes
Old Witless Bay Cemetery	Whittle's (Witless) Bay	Early 1700's (maybe earlier)	no	no	no	yes	no	no	yes	no	no
Old Cemetery	Port Kirwan	earliest stone 1700s, likely established before.	no	no	no?	yes	yes	no	no	no	no
Old Cemetery	Renews	earliest stone 1700s, likely established before.	no	no	no?	yes	yes	no	no	no	no
Old Anglican Graveyard	Petty Harbour	late 1700s	no	no	yes	yes	no	no	yes	no	no
Old Roman Catholic Graveyard	Petty Harbour	1700s?	no	no	yes	yes	no	yes	no	no	no
(assorted locations)	Port de Graves	1600s-1810s	no	no	no	UNKNOWN	no	no	no	no	no
Old St. Nicholas Anglican Cemetery	Torbay	pre 1674	no	no	no	yes	no	no	no	yes	no
Holy Trinity Parish Cemetery (RC)	Torbay	early 1700s	no	no	UNKNOWN - stone church built in 1800s-	yes	UNKNOWN maybe middle of Irish area				

SITE NAME	TOWN	DATE BURYING GROUND ESTABLISHED	FORTIFIED TOWN	BURIALS INSIDE FORTIFICATION	CHURCHYARD/ MEETING HOUSE ASSOCIATED	ELEVATED IN TOWN	CENTRE	N	S	E	W
Bethany United Church Cemetery	Carbonear	1765	no	no	yes	yes	yes	no	no	no	no
Wareham's Lane Cemetery	Bay Roberts	pre 1766	no	no	no	yes	no	yes	no	no	no
Mercer Family Plot	Bay Roberts	mid C18th	no	no	no	yes	no	yes	no	no	no
Old UC/Anglican Cemetery	Brigus	later 1700s	no	no	yes?	yes	no	no	no	yes	no
Old RC Cemetery	Brigus	early 1800s	no	no	yes	no	no	no	no	no	yes
Immaculate Conception Cemetery	Cape Broyle	late 1700s-early 1800s	no	no	no	yes	yes	no	no	no	no
The Old Graveyard	Branch	late 1700s-early 1800s	no	no	no	yes	yes	no	no	no	no
Old RC Cemetery	Bay de Verde	late 1700s-early 1800s	no	no	yes	yes	yes	no	no	no	no
Anglican Cemetery	Bay de Verde	late 1700s-early 1800s	no	no	no	yes	no	no	yes	no	no
St. Paul's Anglican Churchyard	Trinity	early 1700s (or earlier)	no	no	yes	yes	no	no	no	yes	no

Appendix B

Ferryland Excavations 2016 - 2017

Ferryland Excavation – 2016

The 2016 excavations took place over a six-week period between July 4th and August 12th, with a team of 13 volunteers over the course of the dig. Overall, the weather was exceptional but when there was too much rain to comfortably or accurately excavate, the team headed to the Colony of Avalon's conservation lab to aid in the cleaning and processing of artifacts which were recovered as a result of this excavation. The following section will be broken into six sub-sections in order to discuss the excavation and findings of the six areas of the project, four of which were surveyed by the GPR. All trenches which were opened for this project were cut running north/south, in order to increase our chances of bisecting burials. This is due to the common Christian tradition of burying individuals east/west, with their feet to the east, so at the time of Resurrection they will be facing the direction in which Jesus Christ appears, or so they will be facing Jerusalem. Of course it is possible that they were buried with a different orientation, but east/west is the most common for Christian burials and thus the most likely orientation to find.

Area 1 (Area D) – 9m x 15 m

Excavation began in survey Area 1, located in Area D of the Ferryland site plan. The first trench was laid out to cross-cut an anomaly in the GPR readings in the northeast corner of the survey area, located approximately 1.75 mbs. Fifteen years previous, Dr. Gaulton and his team excavated two 50cm wide trenches running north / south across the

east side of survey Area 1 from end to end (Barry Gaulton, personal communications 2017). We managed to identify the two trenches after 11 years via the GPR data, but unfortunately these trenches were also negative for human burials. The goal of this and all test units during the excavation was to dig down until we hit the glacially-deposited subsoil, a compacted layer ranging from browns to reds with often iron-rich inclusions which contained formed soils on their exterior cortex. This layer predates human interaction with the landscape, and thus if there had been something dug down into the ground a distance, for a post or a grave, and over the subsequent years the overlaying soil had been tilled for farming, the glacial subsoil would still carry a trace of that feature. Our goal was to dig down to and expose the subsoil across the entirety of the test trench in order to identify potential features left in the subsoil by the digging of grave shafts. Excavation was carried out using shovels and trowels, and all soil removed from the trench was screened using ¼ inch mesh on a large screen which unloaded the remaining material into a spoil heap. This screen system, though efficient for moving large volumes of material, was also extremely heavy and thus not the most practical for excavating in many different locations.

Figure B.1: 17th-century clay tobacco pipes from unit E113 N7. Photo by author, 2016.

The first trench dug was dug on top of Area 1-A, and was comprised of three 1 x 1m units: E113 N7 - 9. The entirety of Area 1 was previously used as a vegetable garden, and thus any intact soil layers that would otherwise be present were completely mixed together after years of exploitation. This soil layer was previously recorded as Event 247, or 'mixed garden soil', and contained all manner of artifacts from the 20th century back into the 17th century. Many fragments of historic glass containers were recovered, as well as different types of ceramics including pearlware, creamware, Bristol Staffordshire, North Devon, and German Westerwald stoneware. Many corroding iron nails and a cluster of late 19th-century shotgun shells were uncovered as well. As many of the shotgun shells had the indentation of being fired, and given the fragile nature of the materials (brass and paper, deteriorating as I lifted them from the ground), it is likely that that they were still sitting exactly where they fell after being fired. In the southeast corner of unit E113 N7, two 17th-century clay tobacco pipes were uncovered, both bowls, with characteristic 'rouletting' around the top outer rim of the pipe bowl (Figure B.1).

Subsoil was reached at approximately 56 – 66 cmbs across the three units, with the deepest being E113 N7. The Event 247 mixed garden soil was homogenous between all units, brownish sandy-soil with 60-70% gravel to cobble inclusions, sub-round to sub-angular, reducing to only gravels just before sterile soil. Sterile subsoil was reddish-yellow with some white clay, angular to sub-angular gravel to cobble inclusions.

In the southeast corner of E113 N7, a feature was identified within the subsoil which was not present in the overburden layer. A post-mould and post-hole feature was identified, the post-mould being comprised of organic-rich soil created upon the decomposition of the wooden post which once stood there. The post-hole was dug in

order to place the wooden post in the ground, and then refilled with the same mixed sediments dug out of the hole. It was oblong in shape and extended south, out of the excavated unit and was comprised of mixed gravels and silts. I sectioned and excavated half the feature to ensure it continued into the subsoil. At 75 cmbs I uncovered a fragment of pipe stem, located just on the exterior of the post-mould in the backfill of the hole, but several centimetres below the start of the subsoil. The pipe stem was likely broken off and dropped into the pit after the post had been placed and the post-hole was being back filled, allowing us to approximate the date of the feature to the 17th century. I excavated half of the post-mould and discovered that it tapered slightly towards the bottom and had a nearly flat base with gravel fill below at 1 mbs.

At subsoil across the three excavated units, there was no indication of the anomaly identified on the GPR readings, indicating that it was likely a large rock deposit within the glacial subsoil, or a portion of the bedrock being picked up by the radar. Unfortunately the post-hole and mould were the only features identified in this first test trench. However, this provided a useful example of differences in the soil colours, compactness, and density associated with a 17th-century feature dug into the subsoil at this site.

A second trench in survey Area 1 was opened on July 6th 2016 in the centre of the survey area towards the western side, close to the defensive ditch. The trench, 1m x 4m, was situated over Area 1-C, an anomaly identified through slumping of soil in a sliceview of the GPR data. This trench was comprised of four units: E108 N0, E108 N1, E108 N2, and E108 N3. Across all four units, there was almost no sod overlaying the sediment, and within 10 – 15 cm we encountered gravels with no soil development, indicating that this

area had likely not been used for gardens often or at all. There were a few artifacts recovered within the first few centimetres, including iron nails, broken glass, ceramics, and a pipe stem. At 58 – 65 cmbs, two features were identified in a red clay-like silt layer in unit E108 N0 – N1 and E108 N2 – N3. The features' fill was comprised of sandy-silt with ~40% sub-round to sub-angular gravel inclusions. Both features were squared off at their visible ends, and were oriented roughly east/west, with the southern feature being ~100 cm wide and the northern feature 95 cm wide. These features looked very promising as grave shafts, and units E108 N0, N2, and N3 were excavated down to subsoil to confirm the continued presence of the features in the sub soil, with E108 N1 being left excavated at ~60 cmbs, to be used as a step out of the trench in the event that it reached over 3 feet deep, per health and safety regulations. However, just above the subsoil at approximately 90 cmbs I uncovered a blue, plastic antifreeze bottle. The feature had been curving inwards at the 'base' and staying relatively straight-sided on the sides while digging down, and it is likely that both of these features were instead created by a mechanical excavator and thus represent a modern disturbance . While no garbage was found inside the northern feature, both features vanished just before subsoil at 102 and 107 cmbs respectively. Compared to Area 1-A, 1-C recovered surprisingly few artifacts, but also did not have any evidence in the subsoil of the anomaly which the GPR identified, indicating it was likely also an inclusion in the bedrock.

Two additional areas were marked for testing from the GPR survey results, however after testing the two higher-potential anomalies, the additional areas were deemed unlikely to have positive results for human burials and thus were left

unexcavated. They will however, be marked on the area map of excavated units in case further study in the area is warranted in the future.

Area 2 (Area D) – 5m x 7m

The second survey area, also located in Ferryland Area D, contained five anomalies identified by the GPR which were slated for testing. Only the first four of these were tested as all proved to be negative for burials and it was therefore deemed unnecessary to test the final one. The area is located on the slope directly south of the reproduction kitchen garden and to the southwest of the 17th-century well in a place which has yet to be investigated at any time during Ferryland's 25 years of archaeological excavation.

Figure B.2: Photo showing slate layer in profile, facing east. Photo by author, 2016.

The first trench was placed crosscutting anomaly Area 2-A, identified in the sliceview as a moderate contrast anomaly with some potential slumping. The trench was 0.5m x 2m, crossing the western half of the reading, located in the southeast corner of the survey area and running north / south, and made up of two units: E130 S10 and E130 S11. Approximately 10cm under the surface, we encountered a large quantity of slate (Figure B.2). Upon inspection it was apparent that this was not a naturally occurring deposit, but rather the tailings or cast-offs from slate roof tile manufacture. Most pieces had obvious worked edges where the slate had been cut and some pieces had broken or complete punched peg holes where they would have been attached to the roof of a building. This slate deposit was ~14 – 15 cm thick, reaching from 10 – 24/25 cmbs, and extended along the entire eastern wall of the trench, petering out on either end and was barely present in the western wall of the trench.

The area immediately to the east of this trench and south of the well has not been excavated before, but it is likely that it may have been used as a slate processing location and/or potentially associated with the nearby construction of an early 17th-century building (Gaulton, Hawkins and Lacy 2016). Unfortunately the old lighthouse road cross-cuts this landform, and was dug directly into the bank and may have obscured archaeology which would have otherwise present in the subsurface. Several nails were also found in this trench, but few other artifacts. At 28 cmbs in both units, a lighter sediment layer appeared, just underneath the slate layer which was inconsistent with the general Event 247 mixed garden soil layer. Subsoil was reached at 35 cmbs in E130 S10 and 43 cmbs in E130 S11, and was denoted by sub-round to sub-angular inclusions

imbedded in compact yellowish-red sandy silts. There were no features present in the subsoil.

The second trench in Area 2 was opened above the GPR anomalies identified as Area 2-B and 2-C at 1.1 and 1.2 mbs respectively. Area 2-B was identified as a high contrast area which formed a shallow depression in the sliceview, approximately 1m in length running east to west. Area 2-C was identified as a lower contrast anomaly, but showed several strong hyperbolic arcs in the sliceview which are often indicative of the inclusion or disturbance associated with a buried object. A 0.5 m x 3m trench was dug to crosscut both of these results, 0.5 m west of the Area 2-A trench, made up of 3 units 0.5 m x 1m in size: E129 S11, E129 S10, and E129 S09. Curiously, there was no evidence of the slate refuse layer in this trench, even though they were separated by a mere 50 cm of baulk. This trench was fairly shallow with subsoil present at 29 – 30 cmbs across the three test units. Artifacts were recovered from all units, mixed together in the Event 247 soil layer, and included pipe stems, glass, ceramics, and iron nails. The subsoil within this trench consisted of a compacted, iron-rich silt with angular to sub-angular gravel to cobble inclusions present throughout. Between units E129 S11 and S10 a clay-like deposit, approximately 45 cm N/S by 40 cm E/W, was discovered in the subsoil, and after digging down 5 – 10 cm across the subsoil within the trench, it was determined that the feature did in fact continue into the subsoil and was worth further exploration. The feature was rectangular in shape, with rounded corners, and appeared to be sloping just slightly inwards on all sides as it was troweled down. The end of the feature was situated in the east side of the trench, continuing out towards the west, and it was determined that the

best option would be to open a second 0.5 m wide trench directly beside Area 2-B/C in order to determine its western extent.

The third trench was opened directly west of Area 2-B/C and was comprised of three units: E128 S11, E128 S10, and E128 S09. Just above the subsoil, we found a clay-like layer at approximately 19 cmbs containing many angular, non-iron inclusions. This layer did not continue in the subsoil, which was identified at 29 – 42 cmbs, varying greatly across the trench. In unit E128 S10, a clay-like feature was identified at the subsoil, roughly circular in shape with a diameter of 39 cm north/south and 36 cm east/west, located in the southwest corner of the unit. The squared feature associated with E129 S11/S10 unfortunately did not continue to the west more than a few centimeters. It was interesting to note, however, that within the fill of the square feature was a slate piece which appeared to have a worked edge but was standing on end, confirming that the feature had been rapidly refilled as a slate piece would not naturally have fallen like this. I excavated half of the square feature, to confirm that it was negative for human remains, and found that the feature tapered towards its centre on all sides with a more severe angle the farther down I went, until it was squared off at the bottom and stopped, 60 cmbs. The two features were remarkably close together, unusual if they had been part of the same structure. Finally, a fourth trench (E126 S11 and E126 S10) was opened to the west of the other trenches in Area 2, overlapping with anomaly Area 2-D, approximately 1.1 mbs and identified as a concave high-contrast feature. The Event 247 layer in this trench was comprised of silty soil with 30 – 40% sub-round to sub-angular inclusions. Subsoil was reached at 26 – 30 cmbs, and was of the same description as the subsoil in the previous

trenches in this area. Some artifacts were recovered from this trench, including glass, iron, some faunal fragments, pipe stems, and assorted ceramics.

Area 2 did not yield any features that could be interpreted as graves after detailed inspection. The slate layer in Area 2-A warrants further investigation in the future.

Area 3 (Area E) – 5m x 10m

This survey area is located directly to the west of the bastion earthwork, on the hill edge overlooking the brewhouse and mansion house below. Located in Ferryland Area E, the survey with GPR identified four potential anomalies for testing, of which only one, Area 3-A was tested.

The trench dug to examine Area 3-A, a set of finger-like projections at approximately 1 mbs was comprised of 5 units: E78 S33, E78 S32, E79 S32, E79 S31, and E79 S30. Unlike the previous trenches dug during this field season, we encountered several soil layers throughout the excavation. In previous records associated with Miller's (2013) excavation, a 50cm trench was opened through E79 S31 – 37, however upon excavation of that area, no signs of this previous trench were identified. In E78 S32, a small piece of inscribed slate with a smoothed front was recovered by volunteer Tiffany Brazil. The stone does not appear to be a finished carving, nor is there enough of the inscription present to determine what it was. Two 19th-century lead bale seals were also recovered from this unit and were quickly transferred to conservation.

In unit E79 S31, I uncovered an in situ, crushed pipe at 43 cmbs. The pipe, broken into 18 pieces, had no decoration other than rouletting along the top of the pipe bowl, indicating that it was likely from the 17th to early 18th century. The pieces all mended,

indicating that it was crushed in place, and that likely the layers below had not been impacted by modern farming activities. The pipe was found at the top of a new soil layer, comprised of semi compact reddish-yellow sediment with 30 – 40% inclusions and occasional pockets of small rounded gravels. This layer extended to all units, and contained no artifacts below the level of the pipe, other than in E78 S32 where several fragmented objects were found. At 76 cmbs a single iron nail was recovered, marking the end of the nearly sterile sediment fill.

In E79 S30, multiple lenses of dark, thin organic material were identified beginning at 42 cmbs and continuing down to subsoil at 90-95cmbs. Units E79 30 – 32, were excavated to subsoil but units E78 S33 – 32 were not as they were used as steps out of the trench. In the profile of the northern portion of the trench, it was apparent that the dark organic material present was in fact the decomposed remains of stacked sod layers. Their highest point was at 43 cmbs when they were first identified, and the layers tapered down to subsoil, with the bottom layer extending roughly 50cm into E79 S31. In the side walls of the trench, it was evident that the subsoil was cut into and left a concave profile, indicating that this area is likely the location of the southern defensive ditch and earthwork construction for the original 1620s defenses. The stacked sods would have been piled up in order to create a higher bank or rampart. With this result we decided not to excavate the other features in Area 3, as the area would have likely all been excavated in 1621/1622 for the creation of the ditch, and thus would not likely contain organized burials from the same period.

Area 4 (Area E) – 10m x 12m

This space was the last area surveyed using the GPR, and only 9 transects were surveyed due to the deep grooves created by what was likely a potato garden. This area was located directly to the south of survey Area 3, in Ferryland Area E. Four major areas were identified through the GPR results for testing, the most promising of which was Area 4-C and 4-D, which were comprised of four oblong shapes all oriented east / west, and at roughly 1 – 1.4 mbs. In the data they appeared as both high contrast areas and clear hyperbolic parabolas in the slice view, making them the most visually promising data.

Area 4-D, made up of 3 anomalies, was excavated with five units: E66 S46, E66 S45, E66 S42, E66 S41, and E66 S39. Each unit hit subsoil at 34 – 38 cmbs and contained fairly consistent mixed garden soils and artifacts including iron, ceramics, glass, pipe stems, a single copper nail in E66 S42, and modern plastic waste. The subsoil was compacted silts with even distribution of inclusions. The two southern units, E66 S46 and S45 hit subsoil at 44 – 45 cmbs, with similar artifact and inclusion distribution. Unfortunately at subsoil, no indication of the oblong anomalies was identified, suggesting that they were likely present instead in the bedrock below or were at the very least large boulders located farther down.

Area 4-C, an oblong inclusion slightly to the west of 4-D, contained many larger cobbles and boulders. Subsoil was reached at 43 cmbs and consisted of yellowish-brown silt with iron staining from the inclusions. A portion of this unit covered the bottom of one of the plow scars, where subsoil was only 12 cm below surface, due to previous gardening.

Two further tests were dug in this area, E76 S43 overlapping with Area 4-A, and E73 S40 which overlapped with Area 4-B. In the latter, subsoil was not reached until 78 cmbs, and was comprised of a sandy black sediment with compacted pebbles and cobbles. The anomaly in this 0.5 x 1m unit was present in the GPR data at 2m below surface, and we had theorized that this may have been the location of a 17th-century well, but unfortunately no features were identified in the subsoil to corroborate this idea. E76 S43 contained subsoil at 57 cmbs and was very rocky with no colour changes before subsoil. This unit contained many iron objects, slate pieces, brick fragments, glass, and pipe stem fragments.

All units in Area 4 proved to be negative for features which could indicate human burials, which was unfortunate due to the high potential of the Area 4-D data interpretation.

Area 5 (Area E) – Test Pit Area 1

This survey area was not included within the GPR survey, and is located to the west of Area 4, between the Area 4-C and the existing houses at the edge of the excavation area. This survey area was explored through 50cm^2 test pits at 2m intervals, off-set in order to create a checkerboard pattern. This way there it would be highly unlikely to miss a group of interred individuals. There were three rows of test pits extending from east to west over an approximately 15m wide area, with 18 test pits in total. Test pit 4 contained a post hole feature, and was the only test pit to contain any indication of a feature. Subsoil was inconsistent throughout the survey area, consisting of hard-packed silts with rusty staining, pale sandy silts, or blackish sandy sediments, and

was reached between 23 – 46 cmbs. This area was surveyed due to lack of previous excavations in the vicinity, it was deemed necessary to test in order to discount or confirm the area for larger excavation.

Area 6 – Test Pit Area 2

The final area surveyed in the 2016 season was located to the south of the kitchen garden and late 17th-century well, on two terrace levels above the old lighthouse road and north of the modern road (see Figure 5.1). Test pitting was done in a grid pattern in order to cover the most ground possible, as well as testing for depth to subsoil in a number of locations in order to keep the back-hoe from digging into potential features in the subsoil. After test pitting was completed, a back-hoe was hired to excavate eight trenches in high potential areas in order to increase the number of locations we could investigate at the end of the field season.

On the lower northern terrace, 12 test pits were dug (TP 20 – 31) at 3m intervals with no indications of grave shafts appearing in any of the tests. TP 22 contained a small post hole but no other features were identified in these tests. Subsoil was reached between 30 – 52 cmbs, and it is believed that the area was likely used for farming at various points in the past. The remains of a 19th-century cement-lined root cellar is present at the far eastern end of the landform. On the southern, more elevated sloped terrace, two rows of test pits were dug at 3m intervals for a total of 15 test pits, in order to cover the landform. The testing began on the eastern side of the landform between two large boulders, and extended west towards the eastern defensive ditch. Subsoil was reached between 28 – 61 cmbs and no features were identified. However in TP 37 subsoil was not identified.

Instead, burned stone and charcoal was recovered at 40 cmbs along with a soil change to a darker, more organic matrix. Artifacts from this test pit date to the 17th century and include long pipe stem fragments, a drinking glass stem, iron nails and ceramic fragments. The test pit was extended 50cm to the south making it a 0.5 x 1m unit to investigate further, and larger pieces of 17th-century ceramics were found including North Italian Marbled Slipware and Saintonge earthenware.

Upon the completion of test pitting, the backhoe was brought in to dig eight trenches based on the results of the test pitting survey. Two trenches were dug on the elevated southern terrace and six on the lower northern terrace. All trenches revealed the same general assortment of artifacts as all other tests during this project, with the exception of test trench (TT) 1, TT 4, and TT 5. TT 1 did not contain the same dark soil layer as TP 37 to the west of the trench, however artifacts of the same type and condition were recovered including several large pieces of North Italian Marbled Slipware and the rim of a Saintonge vessel. These objects were broken into several pieces but were still together, suggesting that there was not much active plowing occurring on the southern terrace area after the 17th century. TT 4 and 5, on the northern terrace, both contained an interesting feature in the southern end of the trenches. While the subsoil was reached at 30 - 40 cmbs in the middle of both of the trenches, a fill was identified in the south end comprised of fine silty-clay with 30% angular to sub-angular gravels. Moisture increased as the feature was excavated down, and at the north side of the feature in TT 5 there is a very clear cut in the subsoil. The feature, Feature 209, contained sections of stacked rocks in TT 5 from 60 – 138 cmbs, comprised of large angular cobbles and boulders with minimal sediment between them and a potential gravel fill. All artifacts recovered from

this feature in both trenches date to the mid – late 18th century and include iron, glass, ceramics, pipes, as well as charcoal and burned brick. TT 4 contained another section of what could be interpreted as a stacked stone wall in the southeast corner and is associated with Feature 209. Subsoil was reached at 140 cmbs in TT 5 and was not excavated to subsoil in TT 4 due to time constraints, however at a depth of 90 cmbs no subsoil had been identified and it is likely to be roughly the same depth as TT 5.

All trenches contained soil layer Event 247, mixed garden soils, and was consistently a brown silty soil with 30 – 40% sub-round to sub-angular pebbles to boulders. No features that could be identified as human grave shafts were identified on either terrace level, however two interesting areas were uncovered that add to our understanding of the history of Ferryland and shall be investigated during future excavations at the site.

Ferryland Excavation – 2017

The 2017 field season ran from July 4th to July 28th, 2017 and many more locations at the site were explored in search of evidence of human burials. While the second season's fieldwork did not include a preluding GPR survey, the limited 1995 report indicated that GPR results from many parts of the settlement within the defensive walls would not provide reliable subsurface data due to the large amount of stone and metal from years of occupation (Deemer 1995). The locations tested were instead chosen based on a combination of archaeological data from previous excavations at the site and the statistical results as a part of this thesis.

A second season of fieldwork was determined beneficial to this project as the statistical frequency model suggested that a central location would be the most likely for settlements similar to Ferryland. In 2016, eastern and southern portions of the site outside the defensive structures were explored and found to be negative for human burials. Thus, a more centrally located excavation was necessary to ensure all possibilities had been thoroughly investigated.

Trenches were dug primarily running north / south to maximize the likelihood of intersecting burials dug in the typical Christian tradition in Areas E and F of Ferryland. In total, seven trenches were dug within the walls of the settlement.

Trench 1 (Area F) – 2m x 4m

This trench was located directly south of the brewhouse, later altered and incorporated into the Kirke House. Units comprising the trench were E81 S5, E82 S5, E83 S5, E84 S5, E81 S4, E82 S4, E83 S4, and E84 S4. The first for units to be opened, E81-84 S5, were dug into an artificial slope created by slope-wash and debris from above, and the entire area had previously been excavated down to an 18th-century layer but never explored further.

The slop-wash and debris layer, 247 disturbed, overlaid the 18th-century surface labelled as 615. This soil layer is characterised as being reddish-yellow in colour 30 – 40% sub-round to sub-angular inclusions and contained artifacts such as ceramics and pipes dating to the 18th century. The layer dipped steeply to the northwest and so was arrived at in sections as the units were excavated using a shovel to remove the 247 layer and a trowel for the in-situ historic layers. Beneath layer 615 is layer 467, a dark

brownish-grey sandy silt with 35 – 40% sub-angular to angular gravels to boulders. This layer is characterised by 17th-century artifacts such as North Devon, Saint Onge, and Westerwald ceramics dominated by milk pan fragments due to the proximity to the 17th century dairy structure to the northeast, pipes, and other fragments such as glass and iron nails.

Units E81 S5 and S4 contained a segment of the original brewhouse structure within layer 520, overlaid by 467. The soil was dark black-brown with pieces of charcoal and decomposed brick fragments indicating an occupation layer. This deposit was created when the brewhouse was dismantled in the mid-17th century by Sir. David Kirke (Tuck and Gaulton 2003:197-198) and a portion of the wall rubble was left south of the building. Between the stones, charred animal bone, wood fragments, possible fibres from leather, North Devon oven fragments, and early 17th-century pipe bowls and stems were recovered. The deposit ended less than 5 cm above the subsoil. The subsoil in Unit E81 S4 sloped to the north and was comprised of compact light grey silt with 20 – 30% angular inclusions.

Units E81-84 S4 were previously excavated by Dr. Gaulton and his team in 2004, and a profile of soil layers was recorded which greatly aided this excavation. Due to the higher modern ground surface in 2004 and the depth of the trench, a portion of the historic soil layers was left intact in these units, allowing us to see the portion of brewhouse rubble that remained in situ. Said feature was recorded, photographed, and removed. Subsoil in units in the east end of the trench displayed subsoil comprised of light grey silty-sand with 40 – 50% sub-angular to angular pebbles to cobbles. Depths to subsoil and soil layers were not recorded for these units as the modern ground surface

was removed years before this excavation. This trench was dug running north / south due to the space available not permitting an east / west trench.

Trench 2 (Area F) – 1m x 4m

This trench ran north / south through the middle of a structure referred to as the Kirke House. The area was previously excavated (Barry Gaulton, personal communication 2017) but the subsoil had not been examined for features, leading to the opening of this trench. Units E76 N0, E76 N1, E76 N2, and E76 N3 did not contain any soil layers other than 247 disturbed, which was expected. While some interesting artifacts were recovered from the disturbed layer such as an 18th-century coin, a glass bead with gold foil on the exterior surface, along with assorted pipe stems and glass, the trench produced no positive evidence of human burial features. The subsoil was a combination of the same compact light-grey silt as in the western portion of Trench 1, and a reddish-yellow sandy-silt similar to the eastern portion of Trench 1. While one of the gravestone fragments was originally found near the brewhouse hearth, a trench was not opened here due to the area being an active work space since the early 1620s and thus impractical for burials.

Trench 3 (Area F) – 1m x 3m

This trench, along with the following Trench 4, was dug into an open space to the northeast of the brewhouse structure. The trench was comprised of units E84 N6, E84 N7, and E84 N8. According to the current archaeological record there was no structure or building in this area during the 17th century (Barry Gaulton, personal communication

2017), thus making it an excellent candidate for holding a potential burial ground. Similar to Trench 2, the entire space had been previously excavated and contained no intact soil layers, and almost no artifacts. Unit E84 N6 contained what appeared to be a rectangular feature in the subsoil, but upon further investigation contained a soil layer marker from the previous excavation and it was determined that the feature was an old unit. Unit E84 N8 contained a small post-mould in the northeast corner of the unit which only continued 2cm below the subsoil surface, and was likely from the modern period as a result. Subsoil was reddish-yellow silty sand with 60 – 70% angular inclusions across all three units.

Trench 4 (Area F) – 1m x 3m

This trench situated towards the east of the open area northeast of the brewhouse, comprised of units E86 N7, E86 N8, and E86 N9. As with Trench 3, these units contained only layer 247 disturbed, and almost no artifacts. Subsoil was the same make-up as Trench 3, described above.

Trench 5 (Area F) – 1m x 4m (offset)

This trench was located directly south of Trench 1, on an artificial terrace created by previous excavations. Earlier digs had exposed the 18th-century ground surface along with a series of large stones which appear to be a pathway, and no further excavation had been carried out below this level. The units of this trench were offset by 1 meter to increase the coverage of the landform. Units E84 S6 and E84 S7 were one meter west of E85 S9 and E85 S10. The 247 disturbed layer was comprised of slope-wash and debris which have accumulated since the 18th-century surface was exposed with the earlier

excavation of the area and contained assorted period ceramics, glass, pipes, and iron. Unit E85 S9 revealed course redware just below the sod layer.

Below the disturbed soil we found the intact 615 layer, as described above in Trench 1. Unit E85 S10 did not contain artifacts in this layer, but E85 S9 contained North Devon with green glaze. E84 S8 had only one piece of folded glass in the 615 layer, and E84 S7 contained a single piece of Westerwald stoneware. Overall, the unit was not rich in material culture, and we did not encounter the 17th-century soil layers we were expecting to see above subsoil. Subsoil was substantially deeper in the northern two units.

Trench 6 (Area E) – 1m x 2m

Trenches 6 and 7 were opened in the bastion, an earthwork construction built in the 1620s by Edward Wynne and company as part of the defensive structure surrounding the original walled settlement. The 2017 trenches are the first to have been opened with the partial intention of exploring the construction of the earthwork. Trench 6 runs north / south, comprised of units E88 S22 and E88 S28. Upon removing the sods appeared to contain very low amounts of inclusions in the sub-surface. The 247 topsoil layer was thin, reaching between 14 – 23 cmbs, and contained a mixture of artifacts including iron pieces such as nails, brick fragments, kaolin pipe fragments, glass, ceramic sherds, and coal. Below 247 we began to identify several unrecorded sediment layers, directly associated with the construction of the bastion itself.

On the western half of the trench, layer 948 was identified, comprised of well-sorted cobble with some boulders towards the east in E88 S23. There were large spaces between the stones and nearly no sediment, creating a very loose and unstable layer. This

indicated a rapid deposition of the stones, likely as either part of the fill of the bastion itself or as the result of a stone pile on top of the bastion having been pushed over some time in the past. This layer dipped to the west and northwest, and was overlaid by 946 only on the eastern half of the trench (Figure B.3). Layer 946 is comprised of a reddish-yellow clay-silt with approximately 35-40% sub-round to angular gravels to cobbles, and some pieces of clay with charcoal flecks throughout the layer. Neither 946 nor 948 contained any material culture, further suggesting that they were associated with the construction of the bastion.

Below the loose stones, we identified an additional layer of loose stones, 972, which contained approximately 60-70% cobbles to boulders, with medium-brown silty soil between the inclusions. This layer contained the same charcoal flecks and areas of clay between the stones as the overlaying 946, and did not contain material culture. Layer 971 overlaid 971, which we believe to be another structural layer in the construction of the bastion. This layer was typified as containing layers of decomposed sod, similar to the palisade embankments along the edge of the ditch, with clay around the sods in most cases, and loose gravels to cobbles mixed with sandy-silt between each layer of sods. This layer was interspersed with other depositional sections which did not continue across the length of the trench; 949, grey silty sands approximately 8cm thick, and 974, light grey clay with no inclusions. Both of these layers vanished towards the northern half of E88 S22, and layer 971 continued below.

The bottom of layer 971 was not reached in trench 6, but appeared to continue downwards as potentially the main construction layer of the bastion. At 116 cmbs in unit E88 S23, a large layer of decomposed sod containing charcoal pieces and a section of

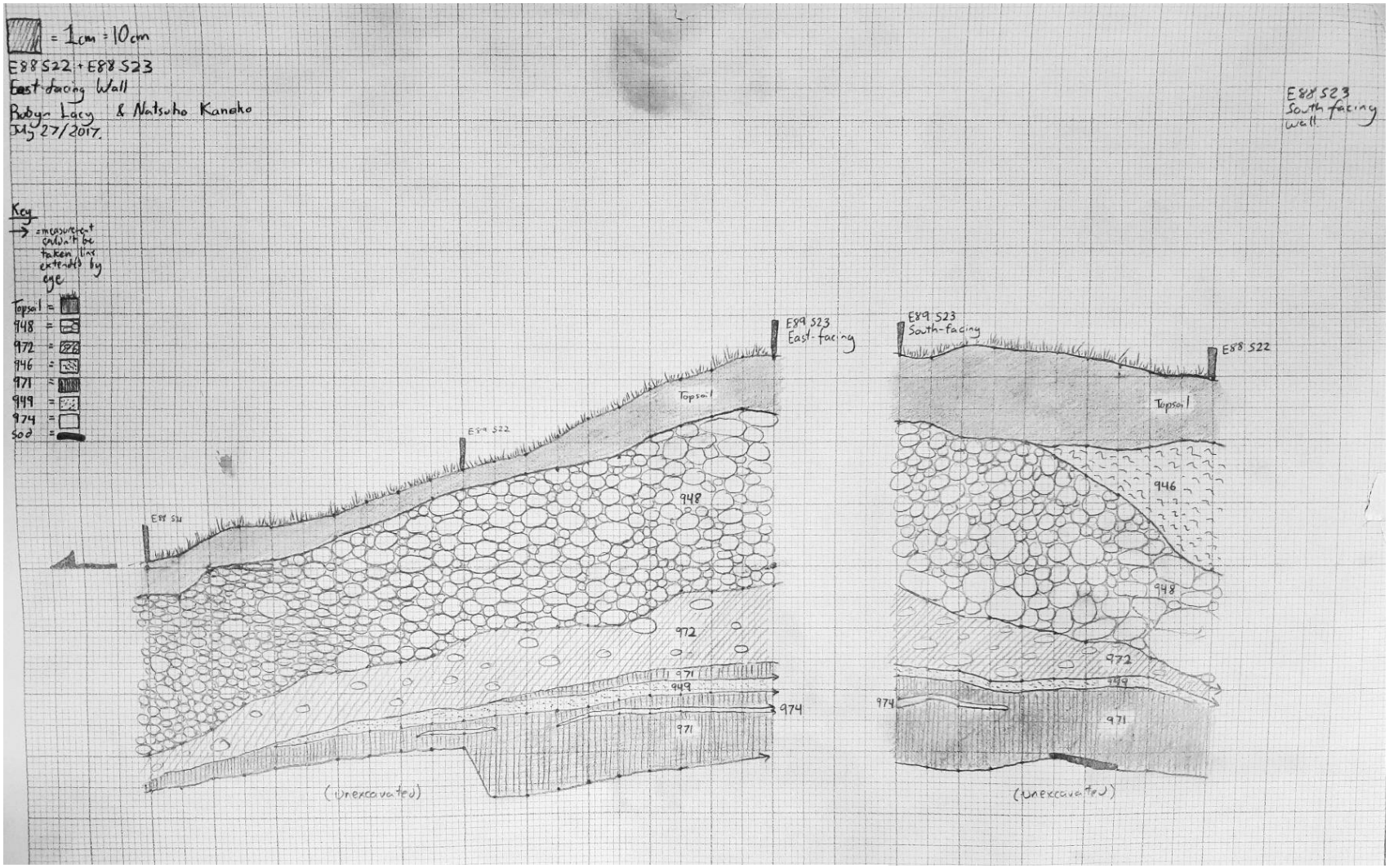

Figure B.3: Profile drawing of E88 S22 and E88 S23 east wall, and E88 S23 south wall, showing layers of fill in the bastion. Drawing by author and Natsuho Kaneko, 2017.

charred wood was uncovered. The wood piece was less than 1cm thick and approximately 5 cm by 16 cm, and was removed with adjoined clay and taken to conservation for stabilization. No material culture was recovered from these units below the topsoil.

Trench 7 (Area E) – 1m x 3m

This trench was located 2m directly west of trench 6, and was comprised of E91 S23, E91 S24, and E91 S25. The depth of topsoil ranged between 20 and 27 cmbs, and contained artifacts such as iron pieces such as nails, ceramic sherds, kaolin pipe fragments, pieces of faunal remains, burned bone/fat, and glass. As with trench 6, these were the only artifacts recovered throughout the excavation of the bastion trenches, with all layers below being culturally deposited but containing no material culture.

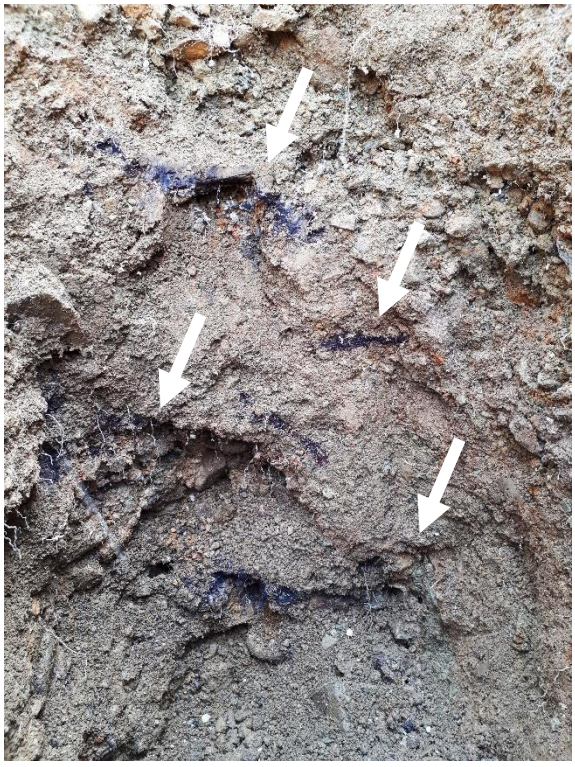

Figure B.4: Test pit in NW quadrant of unit E91 S25, bottom depth 1.6 mbs. Test pit revealed four decomposed sods, indicated by the arrows. Photo by author, 2017.

Trench 7 did not contain the loose stone layer 948 which dominated the profile of trench 6, but instead the topsoil directly overlaid the reddish-yellow 946 layer. This layer contained flecks of charcoal in all three units, as it did in trench 6, suggesting that it was in fact the same sediment layer between both trenches. Below, we came straight into

layer 972 without the loose stones separating it from the layer above. We only managed to excavate through this layer in unit E91 S23, where it approximately 50 cm thick across the entire unit, overlaying the more compact layer 971. Layers of decomposed sod with gravels between them extended into the subsurface to 1.5m below surface, wherein it was determined that it would be unsafe to continue digging deeper in a 1m wide unit due to the instability of the loose stone layers having the potential to collapse the walls of the trench. As 1.5 mbs, the clay/sod and gravel layers appeared to continue, and no artifacts were recovered. E91 S24 and E91 S25 were only excavated partially through the 972 layer due to time constraints towards the end of the excavation, but a test unit dug in the northwest quadrant of E91 S25 showed that 971 was present in that unit as well, and at 1.6 mbs, the bottom of the layer was still not reached (Figure B.4).

Appendix C

Portable X-ray Fluorescence Analysis of Gravestones and Source Materials, Ferryland Region.

Stephen J. Piercey

Earth Sciences, Memorial University

spiercey@mun.ca

2017

Analytical Methods

Non-destructive in situ analysis of gravestones, roof tiles, and rock chips from potential quarry areas were analyzed using portable X-ray fluorescence (pXRF) to evaluate the potential of rock geochemistry to understand the potential provenance of the tiles and gravestones. Samples were analyzed using an Innov-X X5000 pXRF, equipped with a 10W Ta tube with a 25 mm^2 silicon drift detector, and <165 eV spectral resolution. Multiple spots were taken on each gravestone piece and roof tile, and multiple rock chips from the potential quarry were analyzed to ensure: 1) a statistically representative dataset; and 2) that potential chemical heterogeneities in the materials were normalized (e.g., Potts et al. 1995; Potts 2008). The samples were analyzed using both Mining Plus (MP) and 3 Beam Soils (S3B) mode. The MP method is optimized for the determination of elements at higher concentrations and utilizes two beams at 10 and 50 kV, whereas S3B mode is optimized for detection of elements at lower concentrations and utilizes three beams at 15, 35, and 50 kV. In both MP and S3B modes each analyses at a given voltage was for 60s (i.e., MP = 120s for both beams and S3B = 180s for three beams) the optimal time to ensure high precision/accuracy results and a reasonable time for an individual material analysis (e.g., Hall et al. 2014). Mining plus mode is aimed at the major rock forming elements (e.g., Mg, Al, Si, P, K, Ca, Ti, Fe) and trace elements in abundances greater than ~1%, whereas S3B is for elements that are <1% and in the parts per million (ppm) range (i.e., trace quantities).

The instrument was calibrated using matrix-matched reference materials in powder format, including a rhyolite (JR-1 Japan Geological Survey), dunite (DTS-2b – US Geological Survey), modern sediment (PACS-1 – CANMET), syenite (SY-3 – CANMET), and basalt (BHVO-2 – US Geological Survey). The standards were run at the beginning of an analytical run and utilized to calibration correct the data offline after an analytical session (e.g., Piercey and Devine 2014). Quality control was monitored using powdered, matrix-matched reference materials, including a granite (JG-1a) and a sedimentary rock (SDO-1 – US Geological Survey) and this was run every 25 analyses as an unknown. This was followed by an analysis of a blank to evaluate potential

contamination (CDN-BL-10 – Canadian Resource Laboratories). To evaluate potential within-sample variability of rock materials, a rock standard that was previously analyzed by conventional methods was also analyzed (3158 – granite from Topsails Igneous Complex, Newfoundland). Precision, the measure of reproducibility, was determined via multiple repeat analyses of the reference materials, and is given by the % relative standard deviation (%RD = 100%*standard deviation of repeat standard analyses /mean of repeat standard analyses). Precision is good to excellent for all quantitative analytes presented in Table 1 (i.e., <10%RSD). Accuracy was measured using a comparison of our results to that expected in a sample based on certified values and is presented as % relative difference [%RD = 100%*(mean of analytical runs of reference material – certified value)/certified value]. In general, the most reliable elements with sufficient accuracy for this work include: 1) MP mode – Al_2O_3, SiO_2, K_2O, MnO, and CaO; and 2) S3B mode – TiO_2, MnO, Cu, Zn, Rb, Sr, Zr, Nb, and Ba (+/- Cr and V).

Results

All results for tiles, gravestones, and potential quarry materials are shown in Table 2. Binary plots of results are shown in Figure X. The K_2O-Fe_2O_3 and TiO_2-CaO show considerable scatter but there is generally and overlapping between all populations with scatter likely due to partial mobility of K_2O-Fe_2O_3-CaO during weathering of the various materials. A similar scatter in distribution exists for Sr-Ba-Rb, likely due to sample weathering; however, all populations overlap as well. In Cr-V space the results are linear with much tighter groupings and overlap of the tiles, gravestone, and quarry materials, with the exception of one outlier. In Zr-Nb space there is a tight linear array and overlap of all populations. Zr and Nb are the most robust elements and insensitive to chemical weathering of the surfaces of artifacts or rocks and thus are the most reliable of all the elements above.

Given the overlap of tiles, gravestones and quarry materials it is entirely permissive (and likely) that the tiles and gravestones were obtained from the quarry materials analyzed.

References

Hall GEM, Bonham-Carter GF, Buchar A

2014 Evaluation of portable X-ray fluorescence (pXRF) in exploration and mining: Phase 1, control reference materials. *Geochemistry: Exploration, Environment, Analysis 14:* 99-123.

Piercey SJ, Devine MC

2014 Analysis of powdered reference materials and known samples with a benchtop, field portable x-ray fluorescence (pXRF) spectrometer: evaluation of performance and potential applications for exploration lithogeochemistry. *Geochemistry: Exploration, Environment, Analysis 14*: 139-148.

Potts PJ
2008 Introduction, Analytical Instrumentation, and Application Overview In: Potts PJ, West M (eds) Portable X-Ray Fluorscence Spetrometry: Capabilities for In Situ Analysis. *Royal Society of Chemistry, Cambridge, UK*, pp 1-12.

Potts PJ, Webb PC, Williams-Thorpe O, Kilworth R
1995 Analysis of silicate rocks using field-portable X-ray fluorescence instrumentation incorporating a mercury(II) iodide detector: a preliminary assessment of analytical performance. *Analyst 120*: 1273-1278.

Disclaimer