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TEMPORAL, SPATIAL AND STRUCTURAL ANALYSIS OF LSA BURIALS IN THE WESTERN CAPE PROVINCE, SOUTH AFRICA

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A dissertation submitted to the Faculty of Science, University of the Witwatersrand, Johannesburg, in fulfilment of the requirements for the degree of Master of Science.

Johannesburg, August 2015

Declaration

I declare that this thesis is my own, unaided work. It is being submitted for the Degree of Master of Science at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other university.

_____

(Signature of candidate)

14 August 2015

Abstract

Burials within the Western Cape provide a valuable opportunity to understand past social practices during the Later Stone Age. The aim of this dissertation is to specifically study Western Cape LSA burials in such a way as to understand the social and cognitive processes of hunter-gatherers in that region. In order to do this the burials will be approached and studied from a social and cultural perspective. This will include applying a theoretical approach which lends itself to materiality. Certain techniques will be employed to aid the study of this research question, such as a temporal, spatial and structural analysis of the Western Cape burials. Once the temporal analysis is done, certain sections within time can more closely be studied and analysed. The spatial analysis will examine the sites on a regional scale. The interpretative discussion will concentrate on specific patterns and structural aspects of the burials. The above may illuminate a possible array of questions to be asked surrounding the Western Cape burials. This in turn will help in aiding a discussion surrounding the cognitive and social processes of hunter-gatherers in the Western Cape.

To my family and friends
Athena, Keith, Tarquin and Tamsin
Thank you for your help and support

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Contents

Declaration i

Abstract ii

Acknowledgements iv

Figures viii

Tables xi

Chapter 1: Introduction 1

1.1. The location of the study 2

1.2. Ethical considerations 4

1.3. Outline of the dissertation 5

Chapter 2: Understanding the Environment 6

2.1. The early classificatory system and the now accepted division of the LSA 7

2.2. The Oakhurst industry 11

2.3. The Wilton industry 12

3.4. The Final Later Stone Age 14

3.5. Ceramic Final Later Stone Age 15

3.6. Burial studies 21

3.6.1. *The broad literature on the burials and the Eastern Region* 21

3.6.2. *The literature on the burials within the Western Region* 23

Chapter 3: Theory and Method 27

3.1. Hard core theory 31

3.2. Method 32

3.3. The database 33

3.4. Spatial and temporal analysis 33

3.5. Structural analysis 34

3.5.1. *Contextual background* 34

3.5.2. *Ethnography* 35

3.5.3. *Theory* 35

3.6. Concluding remarks 36

Chapter 4: The burials of the Western Region 37

4.1. A brief note on the collections process 38

4.2. Individual burials 39

4.2. Multiple burials 43

4.3. Multiple single interments at one site 45

4.4 Grave goods and the associated archaeology found in the burials 45

4.4.1. *Ochre* 47

4.4.2. *Twine* 48
4.4.3. *Bone points* 48
4.5. Burials that display trauma or violence 48
4.6. General pattern of Western Region burials 49
4.7. The Eastern Region burials 50
Chapter 5: Temporal Analysis 53
5.1. Isotopes 53
5.2. Calibration 54
5.3. Calibrating the burial dates 55
5.4. Bayesian analysis 62
5.5. Multiple burials 69
5.6. Burials that show some form of trauma or violence 72
5.7. Burials that were placed in the seated and flexed position 73
5.8. Burials that had evidence of ochre 76
5.9. Faraoskop 78
5.10. Diaz Street Midden 81
5.12. Shell middens 86
5.13. Burials with and without grave goods 88
5.14. Males, female and juveniles within the burials 90
5.15. The implications of these results 94
Chapter 6: Spatial Analysis 95
6.1. Location of sites 96
6.2. Type of Sites 97
6.3. Male, female and juvenile burials 100
6.4. Body placement 103
6.6. Burials with and without grave goods 106
6.7. Multiple burials 108
6.8. Burials that had an indication of violence or trauma 109
6.9. The implication of these results 111
Chapter 7: Parallel Changes 112
7.1. Environmental and Subsistence changes 113
7.2. Lithic sequences 115
7.3. Social factors and their relevance to the burial practices 118
Chapter 8: The Social Context 121
8.1. Ethnographic accounts 121
8.1.1. //Xegwi and /Xam 122

8.1.2. Nharo 123
8.1.3. G/wi 123
8.1.4 !Xõ 124
8.1.5. Ju/'hoansi and the !Xun 125
8.1.6. Why these ethnographic accounts are useful 127
8.2. Materiality 129
8.2.1. Understanding the burials in terms of the individual 130
8.2.2. The broader regional scale of the graves in relation to the burial locations 132
8.2.3. Burials that have some form of trauma or violence 137
8.2.4. The multiple burials that do not display evidence of violence 139
8.2.5. Grave Goods 140
8.2.6. Returning to materiality 141
8.2.7. The regionalisation of the Western and Eastern Region 141
8.3. Final thoughts 143
References: 145
Appendix A: Database 162
Appendix B: Iziko-South African Museum Collections 171
Appendix C: Iziko-South African Museum Pictures 175
Appendix D: Coding 210
Appendix E: Co-ordinates of the burials used in this study 215

Figures

Figure 1.1: This map shows that Eastern Region begins from the red dot and continues onwards into the Eastern Cape. 3
Figure 1.2: This map details position of one burial that has been assigned to the Western Region due to the burials contextual information, even though it falls in the defined Eastern Region. 3
Figure 5.1: Example of the source code used for all single models. Note the use of the ShCal13 and Marine13 curve as well as the Local Marine offset. In addition to these, each skeleton's percentage marine information was entered with a 10% margin for error. 58
Figure 5.2: Example of the code used to set up the model. The Boundary function informs the model that a start and end date for the event should be generated. Note that the dates in this phase are once more calibrated with the use of the dietary information and the mixed curves option. 64
Figure 5.3: These graphs, with the Bayesian modelled dates being on the left and the calibrated dates without a model on the right, show how the posterior estimate is better defined within the Bayesian model. The grey area is the prior probability and the black area is posterior probability (Bruins *et al*. 2005). The graphs on the left have the end and start boundary plotted as well. 67
Figure 5.4: Single plots of specific burials. Bayesian modelled single plots are on the left while the calibrated dates without a Bayesian model are on the right. 68
Figure 5.5: Multiple plot of the individual skeletons that were found in multiple burials. This graph displays the start and end boundary for this patterning. 69
Figure 5.6: Two dated skeletons each from two graves, once calibrated, show considerable overlap in date ranges suggesting that both skeletons in each grave were interred in a single event. 70
Figure 5.7: Source code used to run the chi-squared test and produce a combined date 71
Figure 5.8: Result of chi-squared combined date for burial SAM-AP 6054A & B and the combined date. 71
Figure 5.9: Displays the result for the chi-squared test on the burial SAM-AP 6348A and B, as well the combined date. 72
Figure 5.10: Burials that were documented to have some form or trauma or violence. The result of the single phase Bayesian model is displayed in the graph indicating start and end boundaries. UCT 587 is displayed in this model as its exclusion does not significantly alter the boundaries. 73
Figure 5.11: The graph shows the single phase modelled results for the burials that were placed in the sitting position. 74
Figure 5.12: Modelled start and end boundaries for burials in the flexed position. 75
Figure 5.13: Single phase model for ochre present in burials indicating start and end boundaries. 76
Figure 5.14: The time span between the first and last radiocarbon date of the Faraoskop rock shelter model, 149 years at 68% confidence and 336 years at 95% confidence. 78

Figure 5.15: Faraoskop bayesian model detailing how the calibrated dates all fall within a similar time constraint 79
Figure 5.16: Model producing a combined date for the Faraoskop burials 80
Figure 5.17: Combined date for the Faraoskop burials. The date is 1985-1880 cal BP and 1995-1841 cal BP at the 68% and 95% confidence level respectively. 80
Figure 5.18: Single phase model, showing how the burials fall into one time frame on the multiplot..... 82
Figure 5.19: Results of the Span interval between the first and last radiocarbon dates at Diaz Street Midden. 83
Figure 5.20: Model displaying the combined test for the Diaz Street Midden Burials. ... 84
Figure 5.21: The actual combined date produced from the model set up for the Diaz Street Midden burials. 84
Figure 5.22: Modelled dates for Elands Bay Cave burials..... 85
Figure 5.23: Modelled dates from burials in the Elands Bay area. 86
Figure 5.24: Modelled results for burials occurring in shell middens 87
Figure 5.25: Single phase model results for burials with grave goods. 88
Figure 5.26: Single phase model results for burials without grave goods..... 89
Figure 5.27: Single phase model documenting the results for male burials. 91
Figure 5.28: Single phase model documenting female burials..... 92
Figure 5.29: Single phase sequential model for the juvenile burials. 93
Figure 6.1 a, b: Reference point for the location of burials, mapped with the burial names: a. Spatially it is clear that the burials are found primarily along the coast: b..... 97
Figure 6.2 a,b: a depicts the spatial distribution of the rock shelters, showing that the majority of rock shelters are located inland. Temporally no significant pattern emerged from burials found in rock shelters: b. 98
Figure 6.3 a,b: The spatial distribution of the middens seem to cluster in the middle of the coast line, other than that there seems to be no obvious spatial distribution: a. There seems to be no spatial pattern in regards to the temporal distribution of midden burials: b. 99
Figure 6.4 a,b: Burials that where uncovered in dunes cluster in the middle of the coast: a. Temporally mapped the burials do not seem to have any patterning: b. 100
Figure 6.5 a,b: Distribution of male burials. With no apparent pattern emerging spatially or temporally: a,b. 101
Figure 6.6 a,b: Distribution female burials, similar to the male burials there seems to be no significant spatial, or spatial-temporal distribution. 102
Figure 6.7 a,b: Distributions of juvenile burials. No distinct spatial pattern is apparent in relation to the juvenile burials: a. Temporally, the dates are scattered throughout region and do not seem to form a pattern: b. 103
Figure 6.8 a,b: Burials where the individuals had been placed in a flexed position. No significant pattern emerged spatially or temporally: a,b. The Elands Bay Cave has two burials that were placed in the flexed position and were dated as follows, UCT 374: 10 902- 10 295 cal BP and UCT 373: 3992-3625 cal BP. The Byneskranskop burials had an additional burial that was calibrated and flexed SAM-AP 6060: 5587-5050 cal BP.

Unfortunately ArcMAP 10.2 only displays one date per site. Please note that the combined dates produced for the Faraoskop, Diaz Street Midden, SAM-AP 6054 A, B & C and SAM-AP 6348 A & B burials have been used here (as given in Chapter 5) 104
Figure 6.9 a,b: Burials where the individuals were placed in a seated position, due to the location of the sites no pattern emerged spatially or temporally. Please note the combined date (as found in Chapter 5) was used for the burial SAM-AP 6054 B, C. 105
Figure 6.10 a,b: 6.10a: displays the spatial distribution of the burials with grave goods. b: depicts the temporal-spatial distribution. 106
Figure 6.11 a,b: Burials that had no documented grave goods. The majority of the burials did not have grave goods, therefore it is not surprising to see that these sites occur throughout the region and that there is no spatial patterning: a,b. Please note a key was not made for Fig 6.11b as it continued passed the map due to how many burials do not have grave goods. 107
Figure 6.12 a,b: Sites where the multiple burials were found. Mapped both regionally and temporally: a,b. Please note UCT 363 and UCT 616 were not mapped temporally as they do not have associated dates. 109
Figure 6.13 a, b: Burials that had an indication of violence or trauma are scattered throughout the region: a. Spatial-temporal analysis does not seem to indicate any patterning: b. UCT 587 is outlined in red in these images to see how the removal of this burial would affect the spatial distribution. 110
Figure 7.1: After Pearce (2008: 290) depicting the parallel changes through the LSA. . 118

Tables

Table 2.1: Summary of the Stone tool industries, with the characteristics of the industry, and examples of sites in the Western and Eastern Region that those industrial complexes have been found at. 17
Table 4.1: Number of burials containing one, two or more bodies. 39
Table 4.2: Number of male, female, juvenile and adult unsexed burials in the sample studied. 39
Table 4.3: List of juvenile and infants recovered from the burials and their approximate ages. 40
Table 4.4: Burial positions recorded. 41
Table 4.5: Burials document in the flexed position 41
Table 4.6: Burials recorded in the sitting position. 42
Table 4.7: Details of individuals making up multiple burials. AF= adult female, YF=young female J= juvenile and I= infant. Please note SAM-AP 6054 A, B and C and SAM-AP 6348 A and B are classified as one burial but are separated here as each individual in the burial had associated information. 44
Table 4.8: Sites which have more than one individual interment. Burial 2 of the Diaz street midden burial was not included in this study as there was no contextual information available for it. 45
Table 4.9: Burials with and without grave goods. 46
Table 4.10: Burials that had documented grave goods. 46
Table 4.11: Burials that have associated archaeology 47
Table 4.12: Burials which had a violent or traumatic cause of death arranged chronologically. Please note SAM-AP 6348A and SAM-AP 6348B is one double burial and SAM-AP 6054A, B and C are a part of a multiple burial. 49
Table 5.1: Burials which have uncalibrated radiocarbon dates and $\delta^{13}C$ values available. These data allow for the percentage marine in the diets to be calculated. The dates are ordered in chronological order from oldest to youngest. 56
Table 5.2: Calibrated date ranges for Western Region burials. Both the 68% and 95% confidence range have been given. The dates are ordered chronologically from oldest to youngest. 58
Table 5.3: Burials that were originally included in this study but were removed once they were calibrated and their date ranges no longer fell within an appropriate time scale for this research. 60
Table 5.4: Calibrated date ranges of the burials once they have been run with the single phase model set up in OxCal v 4.2. This table also provides the start and end dates for this event. 64
Table 5.5: Start and end boundaries for the patterning relating to multiple burials, burials that displayed a form of violence or trauma and burials placed in the seated or flexed position. 77
Table 5.6: Calibrated date ranges and how the dates for the individuals at the Faraoskop rock shelter fall within a similar time period. 78

Table 5.7: Start and end boundaries for Faraoskop. The dates are very similar and suggest one single short burial event occurred at the site. 79
Table 5.8: Calibrated date ranges at the Diaz Street Midden. From these results it is possible to see that the burials were dated to a similar time period 81
Table 5.9: Start and end boundaries for the Diaz Street Midden Burials. 83
Table 5.10: Start and end boundaries for burials that have and do not have documented grave goods. 90
Table 5.11: Start and end boundaries for male and female burials. 94

Chapter 1: Introduction

As much as burials tell us about the dead, they provide us with even greater insight into the living. The act of burying the dead is coded with information. While the societal processes behind the burials may not always be discernible, the attempt to identify and understand past social and cognitive practices of past societies has always been a core focus of funerary archaeology.

> It is not so much about the dead themselves as the living who buried them. The dead do not bury themselves but are treated and disposed of by the living. Archaeologists seek not only to document ancient rituals by recovering the evidence of past funerary practices but also attempt to understand them within their historical contexts and to explain why they were enacted in the ways they were (Parker Pearson 1999: 2).

The process of human burial provides archaeologists with a broad multiplicity of possible information about past funerary practices and their social contexts (Parker Pearson 1999: 5). The aim of this dissertation is therefore to study Later Stone Age (LSA) burials older than 2000 BP in order to possibly discern past burial practices and their social implications. This research identifies patterns present in the burials, analyses them through time and space and then draws them together in the attempt to identify the social and cognitive choices behind the burials practices of past LSA societies in the Western Cape.

An important part of this research is identifying which past societies are being studied. This dissertation is concerned with LSA societies, specifically LSA hunter- gatherers. However, there comes a time in the LSA where other societies move into the area and a period of interaction occurs. The period of contact within the LSA has been greatly studied and has lead to what is commonly referred to as the Cape Khoesan debate (e.g., Sadr 1997, 1998, 2007; Smith *et al*. 1991). This debate is further discussed in Chapter 2.

An older debate exists and is referred to as the Kalahari Revisionist debate (e.g., Lee 1979, 1984; Schrire 1980; Denbow 1984; Wilmsen 1989; Solway & Lee 1990; Wilmsen & Denbow 1990). This debate called for a review of how San ethnography was being used and interpreted. The basis of this argument was that San hunter-gatherers are not isolated and untouched groups of people. They have had contacts with other societies, for at least 2000 years. Consequently, the revisionist's called for a re-evaluation of how San societies are classified and further established that studies involving the San should consider how interactions with other groups may have affected their history. With these thoughts in mind, caution is taken when assigning burials to hunter-gatherers.

In order to eliminate any confusion about the contact period and which burials may belong to which group, a time parameter has been set. Burials reasonably believed to be younger than 2000 BP have not been included in the study. Prior to 2000 BP there is seemingly only one type of society in the area, that being hunter-gatherers.

While, the term hunter-gatherers is in itself contested it is merely meant here as an economic bracket. However, the terminology LSA people or LSA populations is used in this dissertation. This avoids assigning a definite bracket to a society that cannot and should not be determinably assigned modern terms and by inference modern interpretations.

1.1. The location of the study

Geographically the burials used in this dissertation are located in the Western Cape Province of South Africa. However, the study area has been divided into what I refer to as the Western and Eastern Region. This division is suggested because David Pearce's (2008: 50) study on the Eastern Cape burials provides a reference point for the boundaries between the burials. The regions for the graves are based on the corpus of burials found in each study area.

The burials of the Eastern Cape seem to extend down into the Western Cape (Fig. 1.1). There is a burial that lies along the coast of the Western Cape but falls within the boundary of the Eastern Region, as defined in this dissertation (Fig. 1.2). Yet, it is included in this study as the burial is not indicative of what is commonly found in the Eastern Region interments as determined by Pearce (2008). These boundaries and the descriptions of the burials in each region are clarified in Chapters 2, 4 and 8.

It is not surprising that the boundaries for the burials do not conform to geographical boundaries as known today. Territories, boundaries and movement of people were almost certainly substantially different to how we understand them today. Consequently, the overlap in the regions and the burials, in such proximity to one another is not unexpected. Also we need to keep in mind that these boundaries may well have changed through time.

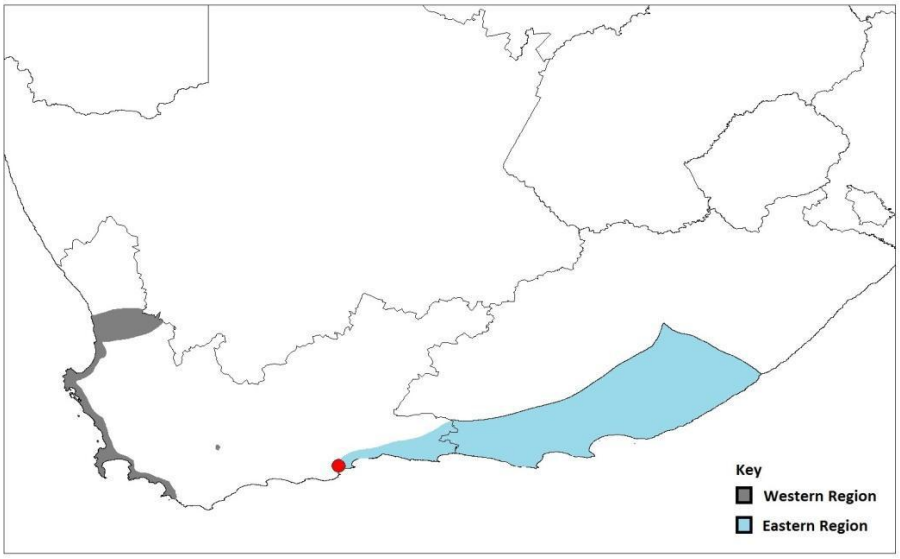


Figure 1.1: This map shows that Eastern Region begins from the red dot and continues onwards into the Eastern Cape.

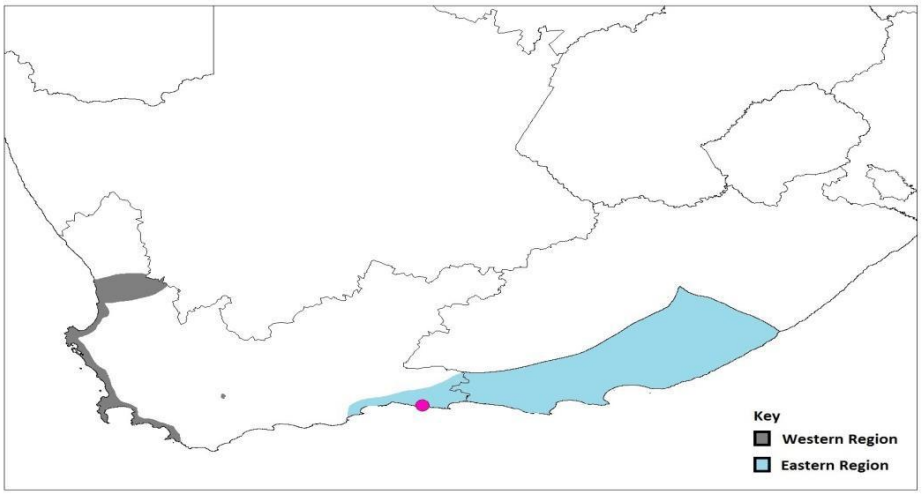


Figure 1.2: This map details position of one burial that has been assigned to the Western Region due to the burials contextual information, even though it falls in the defined Eastern Region.

1.2. Ethical considerations

When conducting a study involving human remains there is an ethical side which should not be ignored. Skeletal remains have a history of being used unethically and to further political or racial motives (Legassik & Rassool 2000; Steyn *et al.* 2013).
Indeed, even some of the remains have been collected in ways that have been, rightly so, deemed unethical. It is therefore, not surprising that when engaging with such a study researchers motives and processes need to be quite apparent. Nowadays a substantial number of provisions have been put in place to ensure ethical handlings of skeletal remains and the artefacts recovered with them.

There is legislation which deals directly with burials and human remains, which all individuals are expected to abide by. These provisions set out what procedure should be followed when dealing with burials, how the skeletal remains should be treated and which relevant authority is responsible for them. There are less ethical constraints, when dealing with burials older than 2000 BP as direct descendants cannot be identified. But this should in no way allow these burials to be treated with any less respect than burials where direct descendants can be identified. In a broader context there is also the Vermillion accord on human remains (Day 1990). This accord of the World Archaeological Congress sets out points for the treatment and handling of human remains. It is accepted almost universally and is nearly always mentioned when there is an institution that houses or deals with remains.

In regards to this research specifically, when looking at collections (which are used to gather the information for this research dataset, Chapter 3) the actual skeletal remains have not been looked at or studied. At times, the grave goods have been documented but have certainly been treated in a respectful and ethical manner. The international standards, the specific policies of institutions and the law within South Africa have all been adhered to when conducting this research. It is in this way that this research has complied to ethical standards. Furthermore, being an academic pursuit the information presented here will be done in a professional manner, with the primary focus to enhance and further archaeological information.

1.3. Outline of the dissertation

This dissertation begins in Chapter 2, which provides the necessary background to the LSA and the research that has already been conducted on the burials within the Western Region. It also explores why there is scope to conduct this research and how it possibly can contribute to the discipline. Chapter 3 details a discussion of the theory and method that was applied to this study and the data set. Chapter 4 details the data set used in this dissertation, outlining the patterns that seem to emerge in the burials and setting up the data that is then analysed temporally and spatially (Chapters 5 and 6). Chapter 7 discusses the continuities and discontinuities between the broader LSA archaeology and the burial patterns. The dissertation concludes in Chapter 8 where I present a social discussion on the burials, outlining my thoughts on the perceptions of the burials and the possible reasons behind the conceptualisation of the graves found in the Western Region.

Chapter 2: Understanding the Environment

The South African Stone Age has seen an array of studies and has been a core focus for researchers since archaeology saw its inception in South Africa. John Goodwin was the first professionally trained archaeologist in South Africa who pioneered the systematic study of stone tools (J.Deacon 1990). From the 1920s and 1930s, archaeology in southern Africa began to be cultivated under the supervision of Goodwin and Clarence van Riet Lowe in Johannesburg. Goodwin focused his attention on defining a classificatory system for Stone Age archaeology that did not follow the accepted European divisions of Palaeolithic and Neolithic (Goodwin 1926; J.Deacon 1990). His work (including field work) with that of van Riet Lowe led him to a two stage classification of Early and Later Stone Age (J.Deacon 1990). Eventually the Middle Stone Age would become an accepted period of categorization (Goodwin & van Riet Lowe 1929). Following this period, the political atmosphere and war of the 1940s affected archaeological studies.

By the 1960's and 70's archaeology was beginning to see a revitalization and researchers such as Ray Inskeep, Hilary and Janette Deacon and others from universities such as Cambridge appeared on the scene (J.Deacon 1990). This period in archaeology, for southern Africa, saw a need to fix archaeology's image which had been dampened during the prior political and war years. By the 1970's and 1980's archaeology was a thriving discipline and was being influenced by the advent of New Archaeology. New questions were asked and new approaches to answering these questions were being developed. In relation to the Stone Age and more specifically the LSA archaeological studies are no exception, the research has been wide and varied, all in an effort to fully understand the Stone Age (Deacon & Deacon 1999). With the advent of New Archaeology, studies began to shift and there was an emergence and concentration on temporal and spatial studies, some of which had a significant impact for archaeological research which continues on today. The purpose of this chapter will be to show how these temporal and spatial studies affected the LSA, providing other necessary information where deemed appropriate. Although the LSA will be discussed in general terms as a broad over-view provides a more comprehensive understanding of

the Holocene, given examples will focus on the Western and Eastern Region of South Africa. It is better to understand both regions in conjunction within one another, as this will provide an understanding of the type of regionalisation present in the archaeology.

2.1. The early classificatory system and the now accepted division of the LSA

The initial summation of the southern African LSA saw a division based purely on technological differences identified through assemblages collected from various sites. This distinction classified the LSA into the Smithfield and the Wilton (J.Deacon 1984a, b). The Smithfield was defined as a tradition which saw the production of bladelets which were blunted or hafted onto a shaft with mastic (J.Deacon 1984a: 224; Stynder 2006: 103). The Wilton was defined as a formal tool assemblage with a central production of scrapers, convexs, backed bladelets, adzes (J.Deacon 1984a: 224). The Wilton also saw the production of ostrich egg shell (OES) beads and an array of wooden, bone and and other instruments (J.Deacon 1984a: 224). Goodwin and van Riet Lowe (1929) further assigned the Smithfield to inland regions, and the Wilton to coastal regions. The association of these industries to localities lead to a few assumptions. Firstly, that the Wilton was produced by populations that moved into southern Africa and the secondly that material culture could prescribe identity (Goodwin & van Riet Lowe 1929; Sampson 1974; Stynder 2006). The concept that material culture can equate to ethnicities was driven by the fact that the Wilton industry showed similarities to assemblages further north. Allowing the assumption that people move into the area and by the production of their microlithic industry they asserted their identity (J. Deacon 1984; Stynder 2006).

Further, research by van Riet Lowe (1929) led him to sub-divide the Smithfield into A, B and C industries. The Smithfield A, B and C assemblages were categorized according to age, with Smithfield A being the oldest in the sequence. Each sub-division has characteristics specific to the industry, Smithfield A and B assemblages were generally found in open sites in the Orange Free State and Northern Cape (Sampson 1974: 373). Smithfield A stone tools were generally robust and manufactured out of hornfels whilst Smithfield B stone tools were said to smaller in comparison to Smithfield A. As Smithfield C was considered a microlithic industry (found in cave sites) the assemblages varied from A and B (J. Deacon 1984a: 224). Smithfield C was found in Lesotho and the eastern Orange Free State (Sampson 1974: 373). The progression to a microlithic system of manufacture imitated the Wilton industry, and was postulated to have been the

influenced by the immigrant producers of the Wilton industry (Goodwin & van Riet Lowe 1929; Deacon 1984; Stynder 2006). Subsequent research also lead to the classification of a Smithfield N found in Natal (Goodwin 1930) Smithfield P which was located in Pondoland (van Riet Lowe 1936). The Coastal Smithfield (van Riet Lowe 1946; Schofield 1936) which was assigned to the southern and western Cape (H.J. Deacon 1972; J. Deacon 1984a: 223; Sampson 1974: 373).

The above assertions began to be re-evaluated during the later 1970s in conjunction with the introduction of New Archaeology (J.Deacon 1990). Researchers began to note that these early classificatory systems were highly qualitative and that the approaches used to identify the various industries were inadequate (Clark 1959; Clark *et al*. 1966; J.Deacon 1984a, 1990; Inskeep 1967, 1978; Sampson 1969). This led to studies which focused on temporal and spatial aspects and ultimately changed archaeologists understanding of the LSA. Janette Deacon (1974) undertook temporal and spatial research which disproved the Smithfield A, B, C. In order to conduct this research she evaluated radiocarbon dates that were associated with the LSA and suggested that the Smithfield and Wilton were not separate industries but rather one evolving stone tool making tradition (J.Deacon 1974; Stynder 2006: 108). She additionally identified that the lack of Wilton in the interior of southern Africa could have been due to the unfavourable climatic conditions during the mid-Holocene (J.Deacon 1974).

Moreover multiple studies disproved the hypothesis that the Wilton assemblages were made by people who moved into southern Africa. These studies focused on re-evaluating the Wilton sequence in terms of both stone tool use and style by means of constructing a time-line of changes in the assemblages. Ultimately this research highlighted that changes in the stone tool assemblages through time were the result of an industry that was developing as opposed to an industry that was being influenced by a migratory population (J. Deacon 1969, 1972; H.J. Deacon 1976).

Additional archaeological research at sites such as Melkhoutboom and Nelson Bay Cave supported the idea that the Smithfield and Wilton were rather one continually evolving stone tool tradition (H.J.Deacon 1969, 1976; J.Deacon 1984a, b). Faunal and flora studies were conducted, in order to understand temporal changes in both animal and plant exploitation. Indicating how they may or may not have aligned with the modifications in stone tool making (H.J. Deacon 1969, 1976; J.Deacon 1984b; Mitchell 2002). The result

was that subsistence patterning seemed to run parallel with shifts in assemblages, suggesting that utilization of food resources may have coincided with changes in the stone tool assemblages. These studies ultimately led H.J. Deacon to provide a new synthesis of the LSA dividing it into the Robberg, Albany and Wilton tradition (H.J. Deacon 1976; J. Deacon 1990).

Research conducted by Garth Sampson (1972; 1974) referred to the term Smithfield because of its past as opposed to it being an adequate categorical sample. Sampson (1972; 1974) work also led to the introduction of the Oakhurst Complex. His study identified regional differences and led him to re-classify the Smithfield and Wilton in conjunction with what he deemed the Oakhurst complex (Sampson 1972; 1974; Stynder 2006). Briefly he divided LSA archaeology into an Oakhurst industry which was previously the Smithfield A (Sampson 1974; J.Deacon 1984a). He then had regional variants that he assigned to the Wilton Complex which were formerly classified as the Smithfield C and Wilton (Sampson 1974; J.Deacon 1984a). Lastly a Smithfield complex which either aligned or post-dated with Wilton assemblages depending on the location of the site and which was classified before as the Smithfield B (Sampson 1972; 1974; J.Deacon 1984a). However, this scheme has been critically evaluated and is not without its own schematic problems (See J.Deacon 1976).

From the above studies it is possible to see how studying temporal, and in certain instances spatial patterning, can provide insight into variations. In the given examples these new studies which shifted away from purely qualitative research and focused on understanding changes through time, altered the once accepted divisions of the LSA and their associated assumptions. New sequences were understood as well as settlement patterns. In archaeology today, the accepted categorization of the LSA is drawn from the studies done by H.J. Deacon, J. Deacon as well as Sampson. The LSA is conventionally subdivided as follows (Stynder 2006: 112):

Please note all of the below time frames are an approximation.

- Robberg Industry which is approximately between 22000-12000 BP
- Oakhurst which occurs during 12000-8000 BP
- Wilton which is introduced at 8000 BP but has various phases

- Early Wilton assemblages are found during 8000-7000 BP
- Classic Wilton continues from 7000- 4000 BP
- Post-Classic Wilton is the last phase running from 4000 BP-2000 BP
- Ceramic Post- Classic Wilton which sees the introduction of sheep, pottery and other groups of people moving into southern Africa.

A re-evaluation of the South African and Lesotho Stone Age sequence was proposed by Marlize Lombard *et al*. (2012). They suggested a shift in terminology from the Post-Classic Wilton to the Final Later Stone Age and from the Ceramic Post-Classic Wilton, to the Ceramic Final Later Stone Age. This change in terminology is advocated for as it "signals the end of the LSA and not all assemblages (e.g. Smithfield) are similar to the microlithic Wilton" (Lombard *et al*. 2012: 126). The paper further defines the industries as follows (Lombard *et al*. 2012: 128-136):

- The Robberg approximately 18000- 12000 BP
- Oakhurst which falls between 12000- 7000 BP
- Wilton which starts from about 8000- 4000 BP
- Final Later Stone Age 4000- one hundred years ago BP
- Followed by the Ceramic Final Later Stone Age < 2 thousand years ago

A summary of each of the sequences will now be presented, excluding the Robberg industry. This is because the Robberg falls outside of the Holocene and is consequently not relevant to this study. The examples provided for each of these complexes will be specific to the Western and Eastern Region archaeology as these will provide an understanding needed for this dissertation and the context surrounding the research area. It is however important to note that further investigations were conducted in the interior of southern Africa. Each of these industries will also be discussed under the new evaluation presented by Lombard *et al*. (2012). Additionally, this dissertation will follow the new suggested terminology.

2.2. The Oakhurst industry

The Oakhurst replaced the Robberg around 12 000 BP and continued on until approximately 8000 BP when it was replaced by the Wilton. The Oakhurst is characterised by changes in raw material, an increase in tool size, by the methods used to construct the formal tools changes and the sudden disappearance of artefacts that had previously been common in the Robberg (Deacon 1984; Mitchell 2002; Stynder 2006). Additionally there are three accepted regional variants of the Oakhurst: the Albany industry, the Kurma and the Lockshoek (Deacon 1984; Sampson 1974; Stynder 2006; Lombard *et al*. 2012). It is primarily a flaked based industry in which the assemblages are characterised by scrapers and adzes. Lombard *et al*. (2012: 134) noted that a range of polished bone tools were found in the Oakhurst and that there were little to no microlithics.

For the purposes of the Western and Eastern Region the Albany industry is the Oakhurst variant that will be discussed. The other industries occur in different locations. The Albany industry is found at Elands Bay Cave, Matjies River Rock Shelter and sites such as Byneskranskop in the Western and Eastern Region. In the rock shelters the Albany assemblage is found from about 11 000 BP whereas coastal sites display evidence of this industry from about 9000 BP (Stynder 2006).

Research conducted at Elands Bay Cave provided evidence for the climatic conditions during the Oakhust, faunal studies indicate that conditions were relatively wet (Stynder 2006). The Oakhurst is characterised by warmer and wetter seasons in comparison to the Robberg (Stynder 2006). Additional studies within the Western and Eastern region also detail the different types of species being found in the assemblages. At Elands Bay Cave and Nelson Bay Cave there is evidence, in the faunal assemblages, of certain grazing species subsisting there from approximately 11 000- 9000 BP, yet these species had ceased to be found in the interior at 12 000 BP (Klein 1980; Mitchell 2002; Stynder 2006). Documented shifts from large grazers to small browsers (at 9000-7500 BP) occur at sites such as Nelson Bay Cave and Melkhoutboom in the Eastern Region and Byneskranskop in the Western Region (Klein 1980; Mitchell 2002; Stynder 2006). In addition to changing food exploitation there is a marked increase in the population size during the Oakhurst, this increase has been argued to be the result of the warmer climatic conditions (Sampson 1974; Deacon 1984a, b). This period also shows an

occupation of the larger rock shelters such as Elands Bay Cave and Nelson Bay Cave but also a move to smaller rock-shelters (Vogel 1970; Mitchell 2002; Stynder 2006). It should be further noted that there is re-population of the interior of southern Africa during the Oakhurst (Stynder 2006).

One of the most significant features of the Oakhurst is the increased use of ostrich egg shell (OES) beads and marine and bone artefacts (Wadley 1992). The presence of such items suggests a shift in symbolic behaviour and has also been used as evidence to suggest a growing exchange network (Wadley 1993; Stynder 2006). The further advent of such behaviour and presence of objects may also suggest why there is a significant occurrence of marine shell found at sites far from the coast (Stynder 2006: 127). This is a noteworthy transition from the Robberg industry, suggesting that social relations may be changing and that symbolic behaviour within the early LSA could also be evolving (Deacon & Deacon 1999). Symbolic behaviour is important when considering burials, as the act of burying the dead has been ascertained as containing deeper social and symbolic behaviours (Rugg 2000). Understanding how burial practices or traditions coincide with the broader archaeology can affect the interpretations of that time period and the burial patterns. This will be further discussed later on in the chapter.

In summary the Oakhurst, and more specifically the Albany, which is found in the Western and Eastern regions, is an industrial complex that occurs during a warmer climatic period. It sees a shift in food exploitation and a marked change in the production of stone tool assemblages. There is a significant absence of Robberg type artefacts from Oakhurst assemblages. More sites were being occupied and simultaneously there was a marked increase in OES and marine shell use. Which suggested that social and symbolic ties were evolving whilst being further established. The Oakhurst industry is subsequently replaced by the Wilton at approximately 8000 BP.

2.3. The Wilton industry

The Wilton industry begins at about 8000 BP and continues to approximately 4000 BP, after which there is a shift to the Final Later Stone Age which continues on until about 100 BP, but sees a new phase (Ceramic Final Later Stone Age) emerging after 2000 BP with the introduction of domesticates and pottery (Lombard *et al*. 2012).

The Wilton industry is characterised by more formal stone reproduction and a shift back to a microlithic industry (Stynder 2006: 134). It sees the production of scrapers, segments, bladelets and backed points (Mitchell 2002). The Wilton correspondingly sees an increase in OES artefacts, marine shell, and an increase assortment of bone, organic material is also better preserved. Faraoskop, for example, has excellent preservation of leather and string (Manhire 1993).

The majority of Wilton sites are found along the coast, specifically in the southern and eastern regions (Deacon 1974). Lyn Wadley (2001: 346) has however noted the appearance of Wilton "along the coast and Cape folded belt of the Eastern and Western Cape, and in all except the driest interior regions of South Africa". Wadley (2001: 346) further states how the Wilton period commenced from about 10 000 BP from the North of the Zambesi river and yet from the south of the river Wilton assemblages are absent until about 7500 BP.

In the Eastern Region Wilton tools appear from about 7500 BP at sites such as Nelson Bay Cave, but formal tools increase in production around 6500 BP (Deacon 1984; Stynder 2006). In the Western Region the Wilton tradition is present from about 6500 BP (Deacon 1984). It is however interesting to note that as one moves towards the Western Region Wilton assemblages become scarce (Stynder 2006). Further at Elands Bay Cave and Tortoise Cave there is abandonment of the sites during the period 7900 BP to 4300 BP (Parkington *et al*. 1987; Jerardino 1995; Mitchell 2002). There is evidence to suggest that this was an occurrence restricted to these two sites as Steenbokfontein has a Wilton occupation present at 6100 BP (Jerardino & Yates 1996; Stynder 2006). The Wilton is also characterised by a more arid climate, and sees a shift in food exploitation from larger grazers to smaller animals such as tortoises (Mitchell 2002; Stynder 2006).

In summary the Wilton industry is characterised by a shift back to a microlithic industry. As the Wilton progresses there is a shift in preference for settlement at open sites as opposed to rock shelters. During this period some rock shelters saw an abandonment of settlement, and there was a change in food exploitation. Please see Table 2.1 for an outline of all the periods and a list of sites which have Wilton assemblages present for both the Western and Eastern Region.

3.4. The Final Later Stone Age

The Final Later Stone Age is characterised by variability in the stone tool assemblages, which can either be similar to the Wilton or to the Smithfield. In some instances pure Wilton assemblages continue on into the Final Later Stone Age and can be considered regional Variants, such as the Wilton Large Rock Shelter (Lombard *et al*. 2012: 131-132). During this period, the assemblages are informal and see the production of microlithic and macrolithic tools. Microlithic assemblages, similar to the Wilton, with tools such as adzes, blades, bladelets, scrapers and backed tools are present at sites such as, Byneskranskop, Elands Bay, Faraoskop and Boomplaas in the Western Region. In the Eastern Region, such assemblages are found at Melkhoutboom Cave, Nelson Bay Cave and Wilton Large Rock Shelter. During this period ochre, OES, worked shell and bone are commonly found and used (Lombard *et al*. 2012: 131).

At around 4300 BP Elands Bay Cave and Tortoise cave, which were previously abandoned during the Wilton, are both re-occupied (Parkington *et al*. 1987; Jerardino 1995; Mitchell 2002). During the Final Later Stone Age there is a preference to settle in rock shelters between 4300-3000 BP (Mitchell 2002; Stynder 2006). Subsequently, during 3000 BP there is a marked increased in the preference for open sites close to the sea (Jerardino & Yates 1996). The period from 3000 BP is also referred to as the megamidden period due to the mass exploitation of marine resources that this period sees (Parkington *et al*. 1987). It is interesting to note that during the megamidden period there is hardly any evidence of occupation in rock shelters. The two shelters that do however show some evidence of settlement are Steenbokfontein and Panchos Kitchen Midden (Jerardino 1998; Mitchell 2002; Stynder 2006).

What is most striking about the Wilton and Final Later Stone Age is that there is substantial evidence for regionalisation. This is a significant point for this research as the burials themselves may indicate a form of regional distinctness. In the Eastern Region research has shown that Kasouga flakes, woodworking tools which were constructed out of silcrete, were a local phenomenon (Leslie-Brooker 1987: 147, 1989). Here it was argued, that the Kasouga flakes, provided a means to mark a boundary or territory. In this sense the stone tools are seen as a stylistic marker. Originally Mary-Leslie Brooker

(1987: 147) identified this regional variant at the Uniondale shelter however subsequent sites have also been identified to have Kasouga flakes, such as the Wilton Large Rock Shelter and Melkhoutboom (Binneman 1995: 163-164).

A later study conducted by Hall (1990: 125, 130) argued that certain raw materials provide evidence for regional boundaries and that this was temporally bounded. He noted the shift to silcrete that dominated the assemblages at Edgehill, Wilton Large Rock Shelter, Melkhoutboom and Uniondale. Simon Hall (1990) pointed out that for sites such as Melhoutboom and Edgehill the raw material was not readily available and that there were other materials, specifically hornfels and chalcedony which were easily accessible around those sites. He further showed how this shift to silcrete was not because of an introduction of new artefact classes (Hall 1990: 177). This led him to conclude that the silcrete was a stylistic marker which acknowledged social identities (Hall 1990: 178). Ultimately these studies have shown how "certain attributes in lithic assemblages contribute towards the definition of a socio-spatial boundary which provided a stable basis for LSA intra-and-inter group interaction between about 5000 and 2000 years ago" (Hall 1990: 125). This is something that may extend onto the burials and it is discussed in the section 3.6.

It seems that during the Final Later Stone there is a variation in stone tools assemblages and a marked exploitation of marine resources. Further there is a re-occupation of sites that were previously abandoned during this period. Most striking is the evidence for stylistic markers during the Wilton and the Final Later Stone Age. This maybe an important interpretative point for the burial practices of the Western Region and will be further discussed both in this chapter and in subsequent chapters.

3.5. Ceramic Final Later Stone Age

It is during the Ceramic Final Later Stone Age, after 2000 BP, that pottery and sheep are introduced into southern Africa. There are two suggested hypothesis for the arrival of pottery and sheep in the area, the first pool of thought argues for a diffusion of ideas while the alternative side argues for a migration of pastoralists into South Africa (Smith 1990, 1998, 2000, 2005; Smith *et al*. 1991; Sealy & Yates 1996; Sadr 1997, 1998, 2004, 2008; Sadr & Sampson 2006). The diffusion hypothesis argues that the advent of sheep and pottery was a local phenomenon, either caused by the acculturation of the local

hunter-gatherer populations or by the creation of a genetically mixed population between hunter-gatherers and pastoralists. The migration theory argues that distinct herding communicates moved into the area and brought with them domesticates and pottery.

A new phase of genetic studies has provided information that supports the migration hypothesis (see Henn *et al*. 2008; Schlebusch *et al*. 2012, 2013; Pickrell *et al*. 2014). Alan Morris (2014) summarised these genetic studies and contextualised them against the migratory theory of the Kalahari debate. He showed how the first study (Henn *et al*. 2008) was concerned with a unique Y-chromosome found in a Khoe-Kwadi and that the chromosome supplied evidence for the movement of a small group of men "from a Nilotic-speaking group into the San around 2000 years ago" (Morris 2014: 3). This suggestion supports the migratory hypothesis, as it is possible this group of people migrated into southern Africa and brought domesticates with them (Morris 2014: 3). Morris (2014: 4) also explained how the study conducted by Pickrell *et al*. (2004) used a new method to be able to discern the mixtures of genes between populations. Which allowed Pickrell *et al*. (2004) to conclude that there was an already admixed population from eastern Africa and that this genetic evidence may suggest that, a non-Bantu-speaking population moved into the Kalahari and continued on into southern Africa bringing with them pastoralism (Morris 2014: 4). The genetic evidence supports the migratory theory previously established in the Kalahari debate (although not in its exact form). This has been able to show that there was a migratory event during 3000-2500 BP that first entered East Africa and then moved down to southern Africa.
Continual research drawing on archaeological, linguistic and genetic evidence is still being conducted and will hopefully shed more light on the Kalahari debate in the future.

In review there have been significant shifts in each industry, each characterised by different assemblages, food exploitation and most importantly the advent of regionalisation and the use of stylistic markers in the later stone tool traditions (Table 2.1). This is something that will be kept in mind, as the burials are contextualised against the broader archaeology after they are temporally and spatially situated (see Chapters 7 and 8).

Table 2.1: Summary of the Stone tool industries, with the characteristics of the industry, and examples of sites in the Western and Eastern Region that those industrial complexes have been found at.

Industry	Characteristics of the industry	Presence of industry at sites in the Western Region	Presence of industry at Sites in the Eastern Region	Climate	Food exploitation	Sources
Oakhurst-Albany variation Approximately 12000-7000 BP	Characterised by an increase in tool size. Flake-based industry, scrapers and adzes present. Regional variants include the Albany, Lockshoek and Kuruman. Polished bone tools. Marked lack of microliths. Distinct population increase and repopulation for the interior during the Oakhurst. Increase use of OES beads and artefacts made from shell and bone.	• Elands Bay Cave • Byneskranskop 1 • Boomplaas	• Matjies River Rock Shelter • Oakhurst (as done according to Pearce 2008). • Nelson Bay Cave • Melkhoutboom • Wilton Large Rock Shelter	Warmer and wetter seasons in comparison to the Robberg.	Changing food exploitation. Some grazing species continue on at sites such as Elands Bay Cave and Nelson Bay Cave, but are absent from the interior.	Schrire (1962) H.J. Deacon (1976) Schweitzer & Wilson (1982) J.Deacon (1984) Wadley (1992,2001) Döckel (1998) Orton (2006) Sealy *et al*. (2006) Lombard *et al*. (2012: 134)

Wilton (Classic Wilton) Approximately 8000- 4000 BP	Microlithic tradition. Backed tools, segments and scrapers are common. OES and ochre usage is common. Use of bone, wood and shell for some artefacts. Abandonment of some rock-shelters (Elands Bay Cave and Tortoise Cave) reoccupation of the sites occur around 4300 BP.	• Boomplaas • Byneskranskop 1 • Elands Bay Cave • Kasteelberg G • Steenbokfontein • Blombosfontein 3-6	• Melkhoutboom • Nelson Bay Cave • Matjies River Rock Shelter • Oakhurst (as done according to Pearce 2008). • Wilton Large Rock Shelter • Kabeljous River Shelter	Hot and dry conditions	Organic material better preserved. Underground plants, rich in carbohydrates. Increase exploitation of small game, such as tortoises. Beginning to see more marine food usage.	J.Deacon (1982, 1984) Inskeep (1987) Jerardino & Yates (1996) Döckel (1998) Wadley (2001) Sadr (2004) Stynder (2006) Orton (2006) Binneman (2006/2007) Henshilwood (2008) Lombard *et al*. (2012: 132-133)
Final Later Stone Age(Post-	Variations in stone tool productions.	• Blombosfontein 7	• Kabeljous River Mouth 2B	Hot and dry conditions. With the	Megamidden period- wide exploitation of	Schweitzer & Wilson (1982)

Classic Wilton) Approximately 4000- 100 hundred years ago	Microlithic similar to the Smithfield, as presented by Sampson (1974) or similar to the Wilton. OES, worked bone and ochre usage is commonly found. Ceramics are absent. Intensified occupation along the coast. Preference for open air sites. Substantial evidence for regionalisation.	• Boomplaas • Byneskranskop • Elands Bay Cave • Faraoskop Rock Shelter • Kasteelberg G • Steenbokfontein • Voëlvlei	• Kabeljous River Shelter • Melkhoutboom Cave • Nelson Bay Cave • Wilton Large Rock Shelter	possibility of people moving to areas that had experienced better rainfall (Wadley 2001: 347)	marine foods.	J.Deacon (1982,1984) Parkington *et al*. (1987) Inskeep (1987) Smith et al. (1991) Sealy *et al*. (1992) Manhire (1993) Jerardino & Yates (1996) Wadley (2001) Binneman (2004/ 2005) Henshilwood (2008) Lombard *et al*. (2012: 131-132)

Ceramic Final Later Stone Age Approximately <2000 years ago	Microlithic stone assemblages. Grindstones are common. Ceramics are present.Ochre, OES, metal objects, glass beads and artefacts are found. Characterised by the Kalahari debate.	• Blombos Cave • Blombosfontein 9 • Byneskranskop 1 • Boomplaas • Kasteelberg A, B, D, E,G, M, N • Melkbosstrand • Voëlvlei • Witklip	• Kablejous River Mouth 1A • Nelson Bay Cave • Scott's Cave	Hot and dry climatic conditions	Addition of domestic animals after 2000 BP.	Deacon & Deacon (1963) H.J. Deacon (1967) Smith (1987) Smith *et al*. (1991) Sadr *et al*. (2003) Sealy *et al*. (2004) Lombard *et al*. (2012: 128-130)

3.6. Burial studies

3.6.1. *The broad literature on the burials and the Region*

A substantial amount of research has been conducted on burials in the Western and Eastern Region. One of the first cultural studies on burials was conducted by Ray Inkseep (1986). Inkseep compiled a database of burials and identified four groups of burials ranging across the Cape. He went on to describe the burials in each region, providing a detailed account on the characteristics of the burials, including body positioning, the types of grave goods found, if there was ochre usage on the skeletons. He concluded that there seemed to be a general pattern in the burials (Inskeep 1986). The paper also states that a feature of the Western Region (or in geographical terms Western Cape) burials was that they contained fewer grave goods as opposed to the other regions (Inskeep 1986: 229). This important pioneering study was, however, limited by the relatively small number of burials available to Inskeep and the paucity of direct dates on burials.

Wadley (1997) provided an additional general study of LSA burials. Wadley (1997) was concerned with gender identification within burials. Specifically her aim was to dispel the apparently common belief that gender roles were applied to burials in the same way they are applied to the living (Wadley 1997). To do this she analysed extensively the grave goods found within burials. She was able to demonstrate that during the LSA gender roles did not transfer onto the dead (Wadley 1997). In demonstrating this, it became evident that grave goods were not included with regards to gender roles but rather in terms of other, unknown, factors (Wadley 1997). It should be noted that Wadley's (1997) study examined all LSA burials and did not take into account regional variations.

In terms of the burials it seems important for regional studies to take place. This is because the available literature already indicates differences in the burials between regions. In the Eastern Region burials tend to be found in rock shelters (although that is not say that there are no burials found in open contexts such as shell middens). They are richly adorned with grave goods and the context surrounding the burial is generally well preserved. A substantial amount of cultural studies have been conducted on these burials. For example Hall and Johan Binneman (1987) hypothesised that the ornately

adorned burials for children were because of practices similar to the Ju/'hoansi tradition of *hxaro* whereby grandparents pass on the goods to the children who would not be able to exchange them. Hall and Binneman's hypothesis was valuable as it was one of the first studies to tackle the elaborate burials, and draw on social factors in an attempt to explain and understand these burials.

Hall (1990, 2000) has also conducted studies suggesting that burials within rock shelters in the southern and eastern regions was a means by which groups could associate themselves with a specific territory or boundary. Hall's (2000: 140-143) paper implemented a social approach while attempting, to place the burials into a broader regional and temporal scheme. He argued that the varying use of the sites (specifically at Edgehill and Welgeluk) related to the San cosmos. He ultimately concluded that the Welgeluk shelter eventually became a site of reoccupation and that the burials were slowly covered by occupational deposits. Hall (2000) ultimately suggested, that the relationship between the dead and living evolved and that the dead were used as connection to the site or landscape.

Hall's (2000) argument could be supported by isotopic studies conducted on the skeletons within the Eastern Region (Muller 2001; Sealy &Pfeiffer 2000; Sealy 2006). This research has shown markedly different dietary signatures between groups in the Robberg area and the Matjies River Rock Shelter. What is strange about this is that these sites are in close proximity to each other and are found along the coast. The location of the sites would imply that populations should have similar isotopic signatures, yet, they do not. This led Sealy (2006: 581) to conclude that by "c.a. 4500 BP, the coastal areas of the southern Cape were portioned into territories occupied by separate hunter-gatherer groups" which provides support for Hall's argument as by virtue of these isotopic studies the inference could be drawn that these economic disparities also translates into social differences between the two groups of people. An additional study was conducted by Ben Ludwig (2005: 2) who attempted to correlate the archaeological material between the Matjies River Rock Shelter and Nelson Bay Cave, in attempt to see if there was a difference in the material culture between the two sites that could in the same way translate to a difference in the social setting as the isotopic studies had shown. Ludwig (2005: 95-100) showed differences in the material culture in the stone tool assemblages and through bone and shell artefacts present at the sites. The dissimilarities were shown

through time, in frequency and through the type of material used. Ludwig's (2005: 100) research concluded that the differences present in the material culture could speak to social differences between the people living at each site and that the material culture may have been created with the intention of being stylistic markers of group identities.

A study conducted by Pearce (2008) compiled a database of the burials within the Eastern Region. Pearce (2008) identified the general patterning of the burials within this region and conducted a study on the presence of the painted slabs which are associated with burials in this area. Pearce (2008: 239-240) managed to identify time classes of burials whereby certain characteristics of burials would more commonly be found in a time period. He also argued that the stones which commonly covered the burials in the Eastern Region (some of which were painted or covered in ochre) were access points to the spirit world that would most likely be controlled by religious specialists (Pearce 2008: 284). He managed to present an argument which ultimately showed that burial practices had possible social and religious implications to them in the Eastern Region This dissertation draws extensively from Pearce's work as the same categories were used when compiling a database for the Western Region burials. This allows differences and similarities between the regions to be examined. Although the core focus of this dissertation is to analyse and understand the burials within the Western Region, where deemed appropriate the burials within the Eastern Region will be discussed in conjunction with the Western Region graves.

3.6.2. *The literature on the burials within the Western Region*

In terms of the Western Region the burials studies have been primarily conducted in two differing ways. On the one hand research has been concerned with an isotopic analysis of the skeletons on the other side anatomical contexts have been analysed. This research is highly valuable but concentrates more on the skeletons as opposed to the burials as cultural constructs. There are of course studies that are an exception to this. The prime focus of the Western Region burials has been on the skeletal remains and their anatomical and isotopic backgrounds.

Such research has been able to identify dietary contexts, skeletal characteristics (relating to factors such as posture or possible illnesses) and the cause of death of individuals (e.g. Morris& Parkington 1982; Sealy *et al*. 2000; Dewar & Pfeiffer 2004; Pfeiffer & Sealy

2006; Morris 2012). Dietary changes from approximately 3500 BP have been demonstrated from isotope analysis, the types of food eaten and by the reconstruction of anatomical features, such as mean height and cranial morphology (Sealy & Pfeiffer 2000; Sealy 2006; Stynder *et al*. 2007a, b; Pfeiffer & Harrington 2011; Pfeiffer 2013). This research has situated the stresses possibly being dealt with by LSA populations and provides valuable insight into past LSA societies. The environment, what people were eating, and how it was affecting them have all been reconstructed through this research.

Specific mention of Susan Pfeiffer's work should be made. Pfeiffer's work has engaged with the burials in both anatomical and isotopic terms. In her various papers, she mentions characteristics of Western Region burials, and then specifically drew on the skeletal remains recovered from these burials to answer questions relating to topics such as diet, juvenile growth, population mean sizes and an individual's possible cause of death and so forth (Pfeiffer 2007, 2010, 2013; Pfeiffer & Harrington 2011). (Pfeiffer's work is further summarized throughout the dissertation, as deemed necessary.) Her work adds to the growing body of literature and consistently provides a framework from which to understand the LSA past society's dietary, anatomical and mortality factors. The one point worth noting is that while this research engages with the burials and will provide contextual and social information on them, the burials as cultural signifiers are not the aim of the study. The burials, as a group, as social constructs are not the primary concern. Understanding how the burials have been conceptualized and why has not fully been dealt with for the Western Region, with the exception of Inskeep's (1986) paper. While such a study faces many difficulties, both in how it is conducted and the inferences that can be drawn from the data, the burials do provide an opportunity to attempt to understand the past burial practices in terms of the social and cognitive.

Morris (1992; 1981; 2012) has considered the burials in both the social and anatomical sense. His research has dealt with cataloguing Holocene burials, and in specific regards to the Western Region, his papers have discussed individual's possible cause of death and the possible reasoning behind unusual interments found in the area (e.g. Morris 1981; Morris& Parkington 1982; Morris 2012). Additionally, some of Morris's unpublished forensic reports were used to gather information for the burials present in

the Western Region. While he has discussed social implications for some of the burials, the focus is not on the burial traditions as a whole for the Western Region and rather on individual burials or on the skeletal remains found in a grave.

A central study involving the Western Region skeletons came in response to a seasonal hypothesis proposed by John Parkington (see 1972, 1976, 1977, 1981, 1984a, b). He proposed that Later Stone Age people within the Western Cape moved seasonally between coastal and inland sites. He based this hypothesis on the fauna and flora remains excavated from sites, in conjunction with the seasonal availability of specific food. Factors such as the coast's moderate winters were also considered. This evidence seemed to suggest that hunter-gatherers lived inland in summer and at the coast in winter. Judith Sealy and Nikolaas van der Merwe (1985, 1986, 1987) undertook carbon isotope analysis on the skeletons, plants and animals across the areas which were the proposed regions for movement during the Holocene. Sealy and van der Merwe (1985, 1986, 1987) were able to show that coastal and inland skeletons had different isotopic signatures suggesting that there were two largely separate populations. This meant that seasonal transhumance was unlikely to occur.

Parkington (1986, 1987, 1991) did respond to this study, questioning the method of the isotopic analysis and he postulated that different diets could display the same isotopic signatures, throwing doubt on the isotopic study and results. However subsequent research by Sealy and van der Merwe has firmly established this technique. Their research has also extended beyond carbon isotopes and includes both nitrogen and strontium isotopes (Sealy *et al*. 1987, 1991).

Socially, this seasonal mobility and isotopic study on the Western Region skeletons has important implication in terms of understanding the past LSA societies. Each model has a different social inference. If Parkington's seasonal mobility model was accepted, it would mean that the environment was the driving factor behind people's choices for movement. However, because the isotopic analysis showed that people were not moving seasonally the choice of site selection does not seem to be environmentally determined. Settlement is then determined not by the surroundings but by other factors. This is significant in itself, as countless studies have run on the premise that environmental factors influence society's decisions and are possibly the cause for changes in societies. As this is demonstrably not the case with the coastal and inland LSA

populations, it allows us to extend the interpretation beyond merely environmental factors and look for possible social factors that may be influencing change and decision of where and where not to reside.

This premise may be applicable to the burials, if changes in the burials are present; the assumption that these variations may be related to environmental factors is questionable. It allows the research to be taken one step further and to rather consider social processes that may be at play.

Furthermore, the premise that there were two separate populations is socially significant. Differences between the populations and how boundaries may have been set up is a question that is constantly shadowing archaeological research. If the populations are largely separate, it may be possible that burials styles may be similar but can encompass slight modifications depending on the group conducting the burial. Although in this case, the difference is suggested between inland and coastal skeletons, isotopic work within the Western Region has shown different dietary signatures within the region. This was done, and is further discussed in Chapter 7 and 8, by Genevieve Dewar (2010) who showed that isotopic signatures varied between two burial sites in the Western Region.

It is worth establishing that for this thesis the majority of the radiocarbon dates came from these isotopic and anatomical studies. If not for this body of research conducting this study in terms of the social, and attempting to establish temporal boundaries, would have been limited. There is scope to study the Western Region burials as cultural constructs, and it is through this research, in conjunction with the substantial body of information already available, that both the social and technical sides of the LSA populations can be brought together and correlated.

Studying the burials with the intention of analysing them through time and space may also help to further understand the regionalisation that seems apparent between the Western and Eastern Regions. Temporal and spatial studies have constantly been involved in archaeology, and have framed and influenced our understanding of past societies' practices. It is the hope that this study will be able to contribute to the broader knowledge of LSA archaeology and that the temporal and spatial analysis will be able to historicize the burial traditions of the Western Region LSA people.

Chapter 3: Theory and Method

In order to undertake a well-rounded archaeological research project, two core components need to be considered: theory and methodology. The two are not mutually exclusive. Method deals directly with data and the processes to which you subject your information too. Theory needs data to be at all meaningful. It is in no way a simple relationship to understand as it has evolved as the discipline has developed. I begin with a discussion on theory.

Archaeology has undergone a number of paradigms shifts (Hodder & Cessford 2004). The discipline has moved from Old Archaeology to processual archaeology or New Archaeology to post-processual archaeology (Hodder & Cessford 2004). New Archaeology emerged in southern Africa during the 1960s and 1970s; it shifted the disciplines focus to using anthropological research methods and stressed hypothesis testing (Deacon 1990: 54). During this period scientific methods became an important feature within the discipline. After some time, two core problems with New Archaeology became apparent. The first was that research was said to have become too quantitative and the second was that the focus turned to the resources individuals and societies subsisted on and used rather than the reasons behind their choices (Deacon 1990: 54). Post-processualism emerged to address these problems, and to provide a way in which to incorporate the fundamentals of New Archaeology with a means to interpret social processes behind past societies and individual's behaviour. Consequently, during the post-processual period social theories became a significant feature in archaeological practice. A new understanding emerged, where in order to conduct well- rounded research one need not only have scientific data but a theoretical position that could help one understand the dataset in social terms (Dowson 2001).

The type of theoretical positions usually applied in archaeology fall into what is known as 'soft theory'. Wolfgang Iser (2006) distinguishes between what he termed as 'hard-core theory' and 'soft theory'. Hard-core theories are practiced in the physical sciences where theories are proposed, can be empirically tested and disproved (Iser 2006: 5-8). Hard-core theories aim at universal or predictive laws. These types of theories are data free, in the sense that the theory is not dependant on observed data (Iser 2006: 5). A

key feature of hard-core theories is that they can be rigorously tested and if they fail are discarded. Soft theories on the other hand cannot be subjected to rigorous testing. They rely on observed data and concepts within other disciplines which are drawn together. Soft-theories evolve and adapt when new ideas emerge (Iser 2006: 5-7). They allow for a constant changing of ideals between research and researcher. The result is an immense number of theories for the social sciences. Of course, some of them have fallen out of grace as perspectives have changed, and are thus not considered appropriate to apply. I bring up this distinction primarily, because understanding that we practice theories under the umbrella of 'soft theory' will affect interpretative archaeology research questions. By its nature, soft theory is there to evolve and be all encompassing. Theories are not to be discarded but rather used in tandem with one another to ensure the data is being accurately interpreted.

From this perspective, new critiques emerged, caution was stressed that archaeologists made their data fit to a theory they already had in mind (Willcox 1978; Hodder 1999; Dowson 2001; Whitley 2002). Arguably, this is the biggest problem when using theory. Instead of letting the data speak, researchers apply an interpretation under the premise of applying a theory (Whitley 2002). Where the process should be in the reverse, the data should illuminate the theory that should be used. It is however, a critique that is not so simple to overcome. Rather, it has been stated that researchers should be aware of the factors that influence their choice in theory (Whitley 2002). With these somewhat subjective standards in place, theory became cemented into archaeological research. It is seen as a necessary component. After all, if you merely have data and no theory you reverse back to Old Archaeology where classification becomes the point of the research.

Understanding the ideas behind soft theories and the thought process behind the emergence of theory in the social sciences, is something that I wanted to make apparent. This was done so that the theoretical approach used in this dissertation could be fully understood. As my research question is concerned with understanding past social and cognitive behaviours of LSA people, which may have been encoded in burials, materiality seems a well fitting theory. Materiality in the broadest sense is the "study not of objects or materials, but of the way, in which these things actually constitute and structure behaviour..." (Price 2012: 23). It should be noted that a distinction between materiality

and materialization needs to be drawn. Materialization refers to how ideologies manifest in physical objects, whereby materiality looks at how objects have meaning encoded in them (DeMarrais 2004: 20). When the term 'materialization' is used here it simply means to construct an object with information encoded into it.

Materiality proposes that burials or other structures are materialised or constructed in varying ways dependant on societal and idiosyncratic factors (Insoll 2001, 2004; DeMarrais 2004; Jones 2004; Fahlander & Oestigaard 2008). If one is able to decode the process and understand how a burial is materialised then one will be able to extrapolate the social and cognitive behaviours behind it (DeMarrais 2004; Fahlander & Oestigaard 2008). It is not the position of this dissertation, to study this under the idea of material culture, where the material culture itself can tell you something about the society (Pikirayi 2007). Neither does materiality explicitly use agency or intentionality, although somewhat implied under materiality (as an agent has constructed the burial) it is not the main component of theory (Hodder & Cessford 2004; Ingold 2007). The relationship that is created under agency and intentionality is unidirectional, focusing on what material culture is created by a particular actor (DeMarrais 2004; Fahlander & Oestigaard 2008: 4-6). In contrast, materiality takes the position that burials have multiple dimensions to them. Again, caution needs to be taken, as this may signify burials as having agency. I am not arguing that the burial itself expresses agency. Believing an object has agency, may mean studying the object as an isolated unit and seeing how the object exerts influence (Hodder & Cessford 2004; Ingold 2007). Although valuable in its own rights, this position is not necessary for my dissertation. I am working with the viewpoint that burials are structures which have meanings encoded in them. Although this distinction may seem minor it is actually quite significant. To understand the processes behind the data one needs to understand the broader factors at play, and ask what lead to the information being encoded into that particular object (Price 2012). This is what materiality allows you to do. This is, of course, not a farfetched question to consider because throughout history burials have been an important part of society as death is dealt with in varying ways under different ideals.

Although it may seem like a theory has been chosen to fit the data that is not the case. The underlying premise behind materiality is that it is the starting point needed in order to examine these burials in a meaningful way. The theory however is adaptable; it calls for an all encompassing approach. This is in line with the nature of soft theories and is a primary reason why this theoretical position was chosen.

As materiality does not see relationships as unidirectional, it allows one to consider the multitude of factors that may have been influential. "Approaching the material aspects of death has to be an inclusive and incorporative approach which aims to address the totality and complexity of relations of the dead and living" (Fahlander & Oestigaard 2008:4). What this means, is that an array of significant factors could have been integrated into the materialised artefact such as the importance of landscape, placement of the object, animals, bodies etc. This is what is essential about the study of materiality, although it has not expressly been stated, it recognizes that there are multiple aspects at play that dictate and are dictated by social and cognitive behaviour. It realises that limiting studies to one approach, which concentrates on one factor is detrimental to the study.

To understand this in different terms, it may be useful to consider materiality as a *chaîne opératoire.* Chaîne opératoire discuss the step by step processes that lead to a completed product (Wurz 1999; Audouze 2002; Shott 2003; Stout 2011). In archaeology it is primarily applied to Stone Age studies, in which the process of making a completed stone tool from start to finish is analyzed (e.g., Wurz 1999; Shott 2003). Each component is first studied and understood as an isolated unit, which is then later incorporated back into the larger finished product. The result is that it then becomes apparent as to how one step leads to another, and further what affects the features and construction of an object. Earlier studies also applied a *chaîne opératoire* technique to show how natural objects are essentially transformed into social objects, again looking at processes at stages at a time (Audouze 2002). When this is thought of in terms of the burials, it allows the information to be analysed a step at time to understand how the broader and complete picture of the burial came to be. In a practical example, if there are differences in burials where gender may be the reason; the first step would be to look at the factors which may have caused these disparities whether they are related to societal values, religious values or even evolutionary ideas. It may come to light, that the differences are

actually not related to gender but rather because of the individuals' cause of death. Materiality, in the same sense as the *chaîne opératoire,* allows you to analyse multiple levels at a time in an attempt to understand the influencing factors that lead to how a burial or other social objects was constructed.

What this means, is that at a larger scale, materiality is the over-arching theory but when looking at particular levels in the project, something may only be able to be understood by applying a different theoretical perspective. This project has three main components to it: the broader scale is concerned with temporal and spatial variations present in the burials and the broader archaeology. The next level deals with the societal processes identified through the burials (this is where materiality will be looked at) and the possible experiences the societies are dealing with are discussed. The last scale is the actual individual burials, where the processes within them (although highlighted through the spatial and temporal analysis) may need to be understood in terms of other factors, such as gender or age. This is in line with the nature of soft theories. They are there to evolve and adapt, a theory that is adequately applied will recognise this. It will allow for a process of give and take. This dissertation will benefit from this, aiming not to strictly apply materiality but rather use it as a starting point, and then further investigate what is required to understand the data.

3.1. Hard core theory

There is another dimension to this research, although a core component of it is influenced by soft theories another integral part (the step prior to the application of the soft theories) is concerned with hard core theory. Before the theoretical perspectives under soft theories can be applied certain processes need to be applied to the data (Jones 2004). Specifically the burial data needs to undergo a temporal and spatial analysis. In terms of the temporal analysis this will involve the calibration of the radiocarbon dates and an application of Bayesian statistics to these dates (Bronk Ramsey 1995, 1998, 2008, 2009).

This is done in order to ascertain accurate dates and highlight the likelihood of the date ranges as well as when certain patterns began and ended. This method deals directly with radiocarbon determinations applying them to set processes in order to determine the results (Bronk Ramsey 1995, 1998, 2008, 2009). In relation to the Bayesian statistics, the appropriate model has to be applied to the radiocarbon dates in order to ensure accurate results are determined.

Both the calibration and the Bayesian statistics follow set mathematical procedures. The calibrated dates rely on the use of accurate atmospheric curves. Additionally, accurate isotopic information will help account for marine offsets, which are applicable to dates that were taken from skeletons in coastal contexts (Dewar & Pfeiffer 2010). The Bayesian statistics calculates the likelihoods of date ranges and phases, which will in turn highlight the probability of a patterning being a feature of a particular time period. Details of how the calibration and Bayesian modeling are undertaken are described in Chapter 5. When one considers how the temporal analysis is conducted, it is clear that hard-core theory plays a role in this research (Iser 2006). The data here is tested and applied to certain models which will yield results which either needs to be discarded or can be kept and then subjected to an understanding in terms of soft theory.

The spatial analysis relies on two components the first being the temporal data and the second is the accurate mapping of the burials. This is done using ArcMap 10.2 which has specific tools allowing research data to be spatially examined in different contexts. In order to carry out an accurate spatial analysis, however, the temporal data will be of use as the data ranges in relation to the burials and locations can help illuminate any spatial patterning (Russell 2004). This analysis is further detailed in Chapter 6. The temporal and spatial analysis is subjected to hard-core theory testing in order to ensure its accuracy and believability. It is a fundamental part to the methodology of the research and will influence the outcomes of the discussion presented under materiality. Although method has been briefly touched upon, a fuller discussion of the entire method applied to this research will not be discussed.

3.2. Method

Method determines the steps taken to formulate and structure an argument and is an essential component required for this research. There is no set standard in archaeology as to which method researchers have to adhere to. I have broken up the method for this investigation into three parts, the database, the spatial/ temporal analysis and the structural analysis. These three frameworks deal with and handle the data in order to identify the significant features of the burials.

3.3. The database

The first necessary step in the research was the construction of a database. Pre-existing defined categories were taken from Pearce's (2008) PhD which dealt with LSA burials in the Eastern Region, in the same time frame set up for this dissertation, that is, only burials older than 2000 years BP. The reason for using these categories is that a comparison between the Western and Eastern LSA burials is made to highlight any similarities and differences between the regions. In order to conduct an accurate comparison the burials needed to be compared using the same categories. The database was constructed in the first instance from published sources. That data was then supplemented by unpublished reports held at Heritage of Western Cape (HWC). It should be noted that the South African Heritage Resources Agency (SAHRA) no longer houses such reports and refers all cases to HWC. Where possible, original documents and artefacts (in the collections of the University of Cape Town (UCT) Anatomy Department and the Iziko South African Museum) were studied.

The research resulted in a database of 95 burials of which 74 are radiocarbon dated. It was necessary that as much information as possible be collected for the database, as the more abundant the information recorded the better the Western Region could be understood. There is of course a limitation in organising information according to a database, as the categories may affect how the burials are analysed or understood (Muehlenhard 2000). It is imperative to remember that the categories we use, may not have been of relevance in past societies and that when the data is divided the significance behind it may be diluted. However, collecting the information in relation to specific categories provides an adequate way in which the burials can be systematically analysed and does ensure an accurate comparison between regions. This is an important consideration as the research presented needs to be testable and reproducible.

3.4. Spatial and temporal analysis

The spatial and temporal analysis is conducted in order to historicize the burials. The emergence of time and space variations helps to understand the broader context of the LSA within the Western Region. The technical aspects of conducting this part of the research are as follows:

- Calibration of the radiocarbon dates using the OxCal software (Bronk Ramsey 2001, 2009).

- Apply Bayesian statistical models to the radiocarbon dates, using OxCal software, to identify the likelihood of date ranges and the start and end points of phases of patterns (Bronk Ramsey 2001, 2008, 2009).

- Following the temporal analysis the location of the burials are mapped to identify spatial variations across the area of study. All temporal analysis is done using ArcGis software specifically ArcMap.

- Characteristics of the burials are also mapped to see if spatial patterns emerge in terms of burial attributes. For example, the burials placed in a flexed position are mapped in order to determine if there was a spatial trait associated with that specific feature.

- The temporal data is also mapped with the individual burials and with the burial attributes. This is done in order to determine if any temporal-spatial patterning exists.

The above procedure ensures that the data is handled in appropriate ways and the probability of the patterning is firmly established. The particular advantages and limitations are discussed in Chapters 5 and 6 which present the results of the temporal and spatial analysis. This process is a critical step in the method and without it the structural analysis would not be possible.

3.5. Structural analysis

3.5.1. Contextual background

An integral component of the structural analysis is investigating the contextual background of the broader LSA archaeology in the Western Region. The broader research of the Western Region LSA (as discussed in Chapter 2) is further integrated with the temporal and spatial results (Chapter 7). Here continuities between the burial patterning and the broader LSA are discussed in order to see what factors may have influenced past LSA societies decision processes. Additionally, another type of context for the burials is correspondingly provided. In this case, ethnography is used in order to show the differences in burial practices that exist between the San hunter-gatherers and the LSA societies researched here.

3.5.2. Ethnography

Ethnographic accounts are useful as sources in analogical arguments. In some instances it has been critiqued that the time lapse between the ethnographic accounts and the archaeological material being questioned is too long for it to be appropriately applied (Yellen 1977; Stahl 1994; Pearce 2012). This has been countered by many and the nature of analogy has been discussed and explained (see Lewis- Williams 1991; Humphrey 2004/2005; Mitchell 2005). When used cautiously ethnography can be extremely useful, as it provides a contextual background; a way to step into a mind frame that may be applicable to the predecessors being studied now. San ethnography is used in Chapter 8 as means to assess the past burial practices of San hunter-gatherers. The ethnographic accounts are then compared to the LSA burials documented in this research, in an attempt to see whether any similar lines of inferences can be established.

3.5.3. Theory

The last part of the structural analysis involves an interpretative discussion. In this section (presented in Chapter 8) materiality is used to conduct a social discussion surrounding the burial patterns. This discussion incorporates the ethnography and broader archaeology and then considers why the burials may be conceptualised in the ways that they are. The theoretical discussion ultimately draws all the lines of evidence together. The temporally and spatially situated burial patterns, with the broader archaeology and the ethnography are then all brought together. Following which, the burials practices, under the umbrella of materiality, are deconstructed and interpreted to understand past social and cognitive practices of the LSA people within the Western Region.

3.6. Concluding remarks

Without methods and the process the data goes through, an interpretative discussion would not be possible unless a purely theoretical discussion occurred. But that in itself is superfluous as theoretical positions are only significant if coupled with data. This leads me back to the starting point of this chapter, a research project in order to be properly conducted, needs a strong theoretical and methodological underpinning. The two, however, are not separate entities and rely on each other because the relevant data is extracted through the methodological processes and techniques applied to it.
Once the pertinent information is apparent, it turns to the theory and contextual backgrounds to move beyond the data and attempt a qualitative discussion. The next chapter will detail the database used to conduct this research and present the information relating to the Western Region LSA burials.

Chapter 4: The burials of the Western Region

Studies involving funerary contexts are undertaken in various ways. For this research a database was constructed using categories taken from Pearce (2008). This was done in order to ensure that the burial study of the Western Region could be related to the study conducted on the Eastern Region burials. The database for this research was compiled by consulting available published literature and unpublished forensic reports. (These reports are obtainable through the UCT Anatomy department and Heritage Western Cape.) Additionally, collections at UCT and the South African Museum were looked at.

Only burials that were older than 2000 BP were included in the database. This was done because non hunter -gatherer groups of people moved into southern Africa after 2000 BP. This study is of hunter -gatherer burials only. The 2000 BP cutoff was chosen to avoid including burials from or influenced by other groups. If a burial was not directly radiocarbon dated but could be reasonably assumed to be older than 2000 BP based on the burial context and material culture, then the burial was included in the database.

There are 105 individuals represented within this database that were uncovered from burials within the Western Region. However, some of the individuals were found in the same interment as others but were recorded separately to ensure an accurate burial context (e.g., SAM-AP 6054A, B and C and SAM-AP 6348A and B). To avoid confusion, I clarify the data set as containing 95 burials and 105 individuals.

A total of 21 burials within the data set were not directly radiocarbon dated. Seventy four of the burials have direct radiocarbon dates, of which two burials actually have two associated radiocarbon determinations, meaning the database actually has 76 dated individuals. See Appendix A for a list of the burials included in this database.

It is worth noting that the burials, in this study, are in most cases referred to by their accession numbers, i.e. where the collections are housed. The abbreviation UCT refers to University of Cape Town (Department of Human Biology) the abbreviation SAM-AP refers to the Iziko- South African Museum collection. If the burial was not accessioned to an institution it was referred to by the site name (Eland Cave 1&2, Burial 1, 3, 4 and 5 of

the Diaz Street Midden Burial). Burials that begin with WC/ refer to the Heritage Western Cape report number.

4.1. A brief note on the collections process

It is worth establishing a few points of the process of gathering information from the collections present at UCT and Iziko. The UCT collections have both a written catalogue and forensic reports that can be consulted to attain information on burials that have been accessioned at this department. On consultation of these collections, the forensic reports were available however some of the newer accessions (i.e. the actual boxes) were unavailable. For the older collections, the biggest challenge came in finding the associated grave goods specified to have been found with some of the burials. In some instances, the items were available and in others could not be found.

At the Iziko museum, documentary records are insufficient. The archaeology associated with the burials was available but a register containing information surrounding the burials was not present. I was given specific access to the grave goods that were both dated and undated (see Appendix B), as well as to the files that contained historical documentation for certain burials housed at the museum. Yet, the documentation detailing the processes of how a burial came to be accessioned at the museum, the context surrounding the burial and the associated archaeology was unavailable. This is, of course, in part due to the fact that many of the burials were not excavated under professional settings and that the museum has attained access to them in less than ideal conditions. This meant, however, that the materials documented at Iziko could not be infallibly classified as grave goods, unless there was some other published material available for the burial that documented whether the items were considered to be intentionally placed grave goods within a burial.

It is due to the above reasons that attaining information from collections can at times be challenging. As a result, it is suggested that burials be recorded *as burials* as opposed to simply skeletons found in the burials. Of course, it is understood that many of these burials were dug up many years prior in very crude ways and that the burial contexts was subsequently lost due to this- as the skeletons were of keen interest in the past. Nothing can be done about these older collections. In the future, however, there is opportunity to better handle the documentation and accession process of burials that are found. The chapter will now return to detailing the burials present in the database.

4.2. Individual burials

The majority of the burials are single, whereby one individual was interred in a single pit (n= 86). There are, however, several cases (n=9) where more than one person was buried in the same burial pit (Table 4.1). As the inclusion of extra bodies inevitably alters the structure of a grave, I separated these out and shall discuss them in a subsequent section of this research. It was found that there was a significantly valid preference to bury individuals in single burials that is not due to chance alone (χ^2 = 62.41; 0.05; 1 d.f).

Table 4.1: Number of burials containing one, two or more bodies.

Types of burials	Number	Percentage
Single burials	86	90.53
Multiple burials	9	9.47
Total	95	

The individual burials contain primarily adult males (n=33) and females (n=37) and in a few cases some unsexed juveniles (n=18) and infants (n=4). There were 13 burials (excluding juveniles) which could not be sexed (Table 4.2 and Table 4.3). There was no significant difference in the number of males and females found in the single burials (χ^2 = 3.16; 0.05; 1 d.f). Most of the burials were recovered from open contexts, such as in shell middens. However, there are a few exceptions where burials were found in rock shelters. The most notable of these are the Faraoskop (from UCT 385-UCT 398), Elands Bay Cave (UCT 373, UCT 374, UCT 375, UCT 377, UCT 378), Tortoise cave (UCT 433), Wyegang shelter (UCT 331), Eland Cave 1 & 2 burial, Klipfonteinrand (UCT 333) and the Steenbokfontein (SAM-AP 6314) rock shelter burials. In light of this, it is unclear as to whether there is a real preference for burials to be placed in open site locations, or if it is simply a product of sampling. Graves in open locations are more prone to erosion and accidental discovery.

Table 4.2: Number of male, female, juvenile and adult unsexed burials in the sample studied.

	Number	Percentage
Male	33	31.43
Female	37	35.24
Infant & Juvenile (unsexed)	22	20.95
Unsexed adults	13	12.38
Total	105	

Table 4.3: List of juvenile and infants recovered from the burials and their approximate ages.

Burial	Sex of individual	Approximate age
SAM-AP 6348A	Juvenile	13-16
UCT 331	Infant	Did not specify
UCT 433	Juvenile	Did not specify
SAM-AP 6052	Juvenile	3-4
SAM-AP 6054B	Juvenile	6-7
UCT 388	Juvenile	6-7
UCT 393	Juvenile	Did not specify
SAM-AP 6054C	Juvenile	2-3
SAM-AP 6053	Juvenile	8-9
SAM-AP 6060	Infant	0.3-0.4 months
SAM-AP 6314	Infant	Few weeks old
SAM-AP 6054A	Juvenile	12-13
UCT 616	Juvenile	2-5
UCT 248	Juvenile	2-3
UCT 317	Infant	2-3 months
UCT 363	Juvenile	7-8
UCT 588	Juvenile	14-16
UCT 589	Juvenile	5-6
Eland Cave 1	Juvenile	3
Eland Cave 2	Juvenile	6.5
UCT 396	Juvenile	Did not specify
SAM-AP 6088	Juvenile	Did not specify

The majority of bodies are positioned in flexed position (n= 33), lying on the right side (n= 15) (Table 4.4 and Table 4.5). There are only three exceptions to this (UCT 586, UCT 595 and Burial 3 from the Diaz Street Midden) where the body was placed in a flexed position and on the left side (Dewar 2010: 27-29). There are two burials where the bodies were extended within the burial (Jerardino *et al.* 2000; Morris 1992). The remainder of the burials, where the body position was available, were placed in a seated position (n=10) (Table 4.6). The seated or sitting position refers to an individual that was placed in a flexed posture but was positioned upright. In the literature this is sometimes referred to as the flexed-sitting position. In contrast, the bodies in a flexed position were laid down on the floor of the burial pit, in most cases resting on their right hand side. In this dissertation, the distinction will be kept as flexed or seated position. It is highlighted that the interpretation of the body positions has been taken from the published literature and the forensic reports. In summary, there is a clear preference for

the bodies to be buried in a flexed position (χ^2 =34.53; 0.05; 1 d.f) and for laying the bodies on the right side (χ^2=8.01; 0.55; 1.d.f).

Table 4.4: Burial positions recorded.

Body Position	Number	Percentage
Flexed right	15	33.33
Flexed left	3	6.67
Flexed unknown	15	33.33
Sitting	10	22.22
Extended	2	6.67
Total	45	

Table 4.5: Burials document in the flexed position

Burial	Sex	Body position	Uncalibrated radiocarbon date
UCT 395	Female	Flexed	N/A
UCT 398	N/A	Flexed	N/A
SAM-AP 4791	N/A	Flexed	N/A
SAM-AP 6053	Juvenile	Flexed	N/A
UCT 605	Female	Flexed	N/A
UCT 586	Female	Flexed	N/A
SAM-AP 4803	N/A	Flexed	N/A
SIM1	N/A	Flexed	N/A
SAM-AP 6060	Infant	Flexed	4820 ± 90 BP (To-9531)
UCT 248	Female and Juvenile	Flexed	4730 ± 95 BP (Gx-13185)
SAM-AP 4793	Male	Flexed	4110 ± 60 BP (PTA - 4694)
UCT 433	Juvenile	Flexed	4050 ± 100 BP (OxA - 477)
UCT 334	N/A	Flexed	3850 ± 80 BP (OxA 457)
UCT 373	Female	Flexed	3835 ± 50 BP (PTA-1754)
UCT 333	Male	Flexed	3540±60 BP (PTA - 1642)
SAM-AP 6051	Female	Flexed	3190 ± 50 BP (PTA-2969)
UCT 162	Male	Flexed	2880 ± 50 BP (PTA-929)
UCT588&589	Young female,	Flexed	2870 ± 50BP (PTA-

	Juvenile		9375)
SAM-AP 6348B	Female	Flexed	2460 ± 50 BP (Gx-23455)
SAM-AP 6052	Juvenile	Flexed	2780 ± 50 BP (PTA-2869)
SAM-AP 6054A	Female	Flexed	2780 ± 45 BP (PTA-4211)
SAM-AP 6348A	Juvenile	Flexed	2490 ± 50 BP (GX-23871)
Burial 3	Female	Flexed	2470 ± 49 BP (UGAMS2803)
Burial 4	Male	Flexed	2340 ± 30 BP (UGAMS2804)
Burial 1	Female	Flexed	2270 ± 40 BP (UGAMS2802)
UCT 595	Female	Flexed	2250 ± 40 BP (Beta-263613)
UCT 394	Male	Flexed	2150 ± 70 BP (PTA-4964)
Eland Cave 1&2	Juveniles	Flexed	2145±50 BP (OxA-6217)
SAM-AP 4813	Female	Flexed	2140 ± 45 BP (PTA-4204)
UCT 397	Female	Flexed	2130 ± 45 BP (PTA - 4967)
UCT 396	Juvenile	Flexed	2090 ± 60 BP (PTA-4965)

The individual burials recorded with the body in a sitting position comprise of male burials. The sitting position does not seem to extend to female or juvenile burials unless they are a part of a multiple burial (Table 4.6). The flexed position has primarily been recorded for individual female burials, but there are exceptions to this where males have been placed in flexed position (UCT 394, UCT 374, UC2 162) (Hausman 1980; Sealy 1984; Alder 1988).

Table 4.6: Burials recorded in the sitting position

Burial	Body Position	Sex	Type of Burial	Uncalibrated radiocarbon date
WC11/0055/11	Sitting position	Male	Single	N/A
WC18/383/10	Sitting position	Male	Single	N/A
SAM-AP 4970	Sitting position	Male	Single	N/A
SAM-AP 6054C	Seated with back to SAM-AP 6054B	Female and juvenile	Multiple	N/A
UCT 616	Sitting position	Female and	Multiple	N/A

		infant		
UCT 229	Sitting position	Male	Single	3220 ± 55 BP (PTA -928)
UCT 596	Sitting position	Male	Single	2690 ± 40 BP (Beta-263611)
UCT 587	Sitting position	Male	Single	2580 ± 40 BP (Beta-263610)
SAM-AP 6054B	Seated with back to SAM-AP 6054C	Female and juvenile	Multiple	2530 ± 60 BP (PTA-4151)
UCT 591	Sitting position	Male	Single	2460 ± 40 BP (Beta-263612)

In describing the positioning of the body, it is necessary to distinguish between its heading and facing. The term 'heading' is used to describe the direction in which the head end of the body points (Pearce 2008: 103). Facing, is used to describe the direction in which the face of the person points (Pearce 2008: 103). In regards to the Western Region burials there does not seem to be a general pattern relating to the heading and facing. Facings of North (n=5), North-East (n=2), South (n=3), South-East (n=1), South-West (n=1) and West (n=5) have all been documented. There was no significant difference (χ^2 = 7.48; 0.05; 4 d.f) in the direction bodies face. Bodies are found heading North (n=2), North-West (n=3), West (n=4). Again, there was no significant difference in the direction bodies were headed (χ^2 =0.33; 0.05; 2 d.f). No burial is recorded with an East heading or facing. It is noted that a minority of the burials examined had this information documented. It is possible that a pattern would emerge if more data were available. On the other hand, it is possible that burials were not aligned to cardinal directions, but rather, to other, unknown, criteria.

In summary the individual burials consist of primarily adult males and females. There is a preference to place the bodies in a flexed position. However, some burials have been recorded in a seated position. The sitting position has been documented in male burials and with female and juveniles when they are a part of a multiple burial. The next section will examine the construction of the multiple burials.

4.2. Multiple burials

Multiple burials refer to the intentional placement of more than one individual in a single burial pit. There are a total of nine multiple burials recorded in this database. The majority of the burials (n=8) were double burials where there was one grave which

contained two individuals (Table 4.7). Only one burial has been recovered with three individuals (SAM-AP 6054A, B, and C). These multiple burials comprise primarily of one single adult and a juvenile or an infant. The exceptions to this are SAM-AP 6054A, B, and C, the Eland cave 1&2, and UCT 588&589. SAM-AP 6054A, B, and C saw the inclusion of three juveniles. Eland cave 1&2 and UCT 588&589 saw the interment of two juveniles in the burials respectively. However, SAM-AP 6054A has been approximately aged to 12-13 years and SAM-AP 6348A has been aged to between 13-16 years old and UCT 588 has been determined to be 14-16 years of age. There is a possibility that culturally these individuals would have been regarded as an adult around those ages (Barnard 1992: 52, 71, 80). In considering cultural constructions of this sort, researchers need to beware of conflating Western analytic categories with emic ones. Consequently, they are rather referred to as young females as opposed to juveniles. Eland cave 1&2 is the only definite double burial of two juveniles (Sealy *et al.* 2000). Interestingly, no adult male has been documented as being a part of a multiple burial. It seems that multiple burials are limited to females and juveniles.

Table 4.7: Details of individuals making up multiple burials. AF= adult female, YF=young female J= juvenile and I= infant. Please note SAM-AP 6054 A, B and C and SAM-AP 6348 A and B are classified as one burial but are separated here as each individual in the burial had associated information.

Burial	Individuals in the grave	Body Position	Uncalibrated radiocarbon date
UCT 363	AF, J	Unknown	N/A
UCT 616	AF, J	Sitting	N/A
SAM-AP 6054C	YF,J,J,	Sitting	N/A
UCT 248	AF, J	Flexed	4730 ± 95 BP (Gx-13185)
UCT 588&589	YF, J	Flexed	2870 ± 50 BP (PTA-9375)
SAM-AP 6348B	YF, J	Flexed	2460 ± 50 BP (Gx-23455)
SAM-AP 6054A	YF, J, J	Flexed	2780 ± 45 BP (PTA-4211)
SAM-AP 6054B	YF,J,J	Sitting	2530 ± 60 BP (PTA -4151)
SAM-AP 6348A	YF,J	Flexed	2490 ± 50 BP (GX-23871)
UCT 317	AF, I	Unknown	2220 ± 40 BP (Beta241163)
Eland cave 1&2	J,J	Flexed	2145 ± 50 BP (OxA 6217)
UCT 331	AF, I	Unknown	2100 ± 70 BP (PTA-3869)

Some of these multiple burials have been documented in the flexed position (n=6). Additionally, it is only under the circumstance of multiple burials where females have been found in the sitting position (n=3) (Table 4.7). This is in contrast to the individual burials in which only males were buried in the seated position.

4.3. Multiple single interments at one site

In the Western Region there are sites where more than one single interment has been found in the same location. As seen at Faraoskop, Diaz Street Midden, Byneskranskop site and at Elands Bay Cave (Table 4.8).

Table 4.8: Sites which have more than one individual interment. Burial 2 of the Diaz street midden burial was not included in this study as there was no contextual information available for it.

Site	Burial	Uncalibrated radiocarbon date
	UCT 380	N/A
	UCT 390	N/A
	UCT 393	N/A
	UCT 396	N/A
	UCT 398	N/A
	UCT 394	2150 ± 70 BP (PTA 4964)
Faraoskop	UCT 385	2130 ± 60 BP (PTA-5281)
	UCT 397	2130 ± 45 BP (PTA-4967)
	UCT 391	2110 ± 70 BP (PTA-5284)
	UCT 396	2090 ± 60 BP (PTA-4965)
	UCT 387	2055 ± 40 BP (Gra-23218)
	UCT 386	2000 ± 50 BP (PTA-5283)
Elands Bay Cave		
	UCT 374	9750 ± 100 BP (PTA-3086)
	UCT 375	8000 ± 95 BP (PTA -1829)
	UCT 373	3835 ± 50 BP (PTA-1754)
	UCT 378	10 860 ± 180 BP (OxA-478)
Diaz Street Midden		
	Burial 1	2270 ± 40 BP (UGAMS2802)
	Burial 3	2470 ± 49 BP (UGAMS2803)
	Burial 4	2340 ± 30 BP (UGAMS2804)
	Burial 5	2420 ± 25 BP (UGAMS3062)
Byneskranskop		
Byneskranskop 1	SAM-AP 6053	N/A
Byneskranskop 3	SAM-AP 6060	4820 ± 90 BP (To-9531)
	SAM-AP 6051	3190 ± 50 BP (PTA-2969)
	SAM-AP 6052	2780 ± 50 BP (PTA-2869)

4.4 Grave goods and the associated archaeology found in the burials

Inskeep (1986: 229) has already stated how the inclusion of grave goods in the Western Region was "virtually unheard of". The data collected in this research confirms this finding as noted by Inskeep (1986). The majority of the burials (*n*=78) did not have any documented grave goods (Table 4.9). There is a significant pattern ($\chi^2 = 21.18$; 0.05; 1

d.f) categorizing graves in the Western Region. The grave goods which have been uncovered primarily extend to OES bead, worked bone, shell and a few flakes (Table 4.10). In one instance a rock painting was discovered with the burial, which was said to be depicting a woman giving birth, however, no further details could be found to confirm this (Morris 1992: 20).

Table 4.9: Burials with and without grave goods.

Burials	Numbers	Percentage
With grave goods	15	16.13
Without grave goods	78	83.87
	93	

Table 4.10: Burials that had documented grave goods.

Burial	Grave good	Reference
UCT 434	OES beads	Morris (1992)
UCT 331	Rock painting said to be as associated grave good with the burial.	Morris (1992)
SAM-AP 1449	Shell beads and small scraper	Morris (1992)
UCT 333	Under three large ochre stained grindstones	Parkington & Poggenpoel (1971) Morris (1992)
SAM-AP 4970	Bone needles	Morris (1992)
UCT 248	Stone pestles and pottery	Morris (1981, 1992)
SIM 1	Shell pendant	Morris (1992; 1983)
UCT 158 & UCT 159	Non-human remains	Rudner & Rudner (1954)
SAM-AP 6088	Bead and shell	Morris (1992)
UCT 363	Bone pendant associated with the child	Morris (1992)
UCT 375	Stone tools and flake is mastic	Morris (1992)
UCT 616	Fragments of OES/animal bone	WC16/0178/09 (HWC report)
UCT 586	Stone flake by right foot	Forensic report
SAM-AP 6314[1]	Clump of grass on top of infant	Jerardino *et al.* (2000)
Eland cave 1 & 2	Laid to rest on leather	Sealy *et al*. (2012)

A further distinction needs to be drawn with items that were found in the burials and have an assumed archaeological association (Table 4.11). In such instances either these

[1] Although this is not directly classified as a grave good it is in direct association with the burial and is thus worth noting.

items were not directly related to the burial or it was uncertain whether or not the objects were intentionally placed in the grave. Some of the grave goods that were documented at the Iziko-South African Museum have been placed in this category due to the fact that there was no further context available that supported the supposition that these items were purposefully placed in the burials as grave goods.

Table 4.11: Burials that have associated archaeology.

Burial	Associated Archaeology	Reference
Faraoskop burials (UCT 385 to UCT 398)	Leather, String of OES beads, mastic attaching stone arrow tips to arrow shafts.	Alder (1988) Morris (1992) Manhire (1993)
UCT 435	Shell and bone	Forensic report & UCT collections
SIM 1	Pottery	Morris (1992)
SAM-AP 4202	Animal bones said to be associated with the skeletal remains	Morris (1992)
UCT 605	Tortoise bones, marine shell fragments	WC/04/0125/2010 (HWC report)
UCT 587	Broken shell fragments	Forensic report
Eland cave 1 &2	Twine, stone artefacts, OESbead, and wood shavings	Sealy *et al.* (2012)
SAM-AP 4720	3 stones	Iziko collections
SAM-AP 4899	Grass, 3 bangles, string	Iziko collections
SAM-AP 5075	String	Iziko collections
SAM-AP 6031	Sting and sediments	Iziko collections
SAM-AP 1449[2]	Plant and woody material, plant fibre/animal skin, some potsherds and twine	Iziko collections
SAM-AP 6260A	Shell fragment, non-human bone	Iziko collections
SAM-AP 6272	Non-human teeth, 1x stone flake	Iziko collections
SAM-AP 6314	Twine	Iziko collections
SAM-AP 1157	Piece of wood and bone fragment	Iziko collections

4.4.1. Ochre

Some of the burials have evidence of ochre usage. UCT 333 was buried under three large ochre stained grindstones (Parkington & Poggenpoel 1971; Inskeep 1986). Further evidence of ochre usage has been documented on the grave floor of Burial 3 in the Diaz Street Midden burial (Dewar 2010). The remainder of the burials have evidence of ochre

[2] SAM-AP 1449 was included in both the grave goods and associated archaeology table, as it is unclear if the other items documented through the collections were purposefully placed in the burial as grave goods.

staining on the skeletal remains, such as on the cranium and calvarium (UCT 222, UCT 334, DR 343/9, SAM-AP 6348 A and B and Burial 4).

4.4.2. Twine

In some instances twine was documented in the collections from Iziko (Table 4.11). Although this has not been directly classified as a grave good, the advent of twine in burials should not be overlooked. There is a possibility that the twine was actually directly related to the burial, this is further discussed in Chapter 8.

4.4.3. Bone points

In three of the burials, bone points were recovered (Burial 1, UCT 591 and UCT 317). Pfeiffer (2013: 145) suggested that these bone points are not grave goods due to the fact that the bone points are found lodged in individual's throats or vertebrae. Instead she suggests that these bone points are what caused the individuals' deaths. As such, bone points have not been included as grave goods and are subsequently discussed under section 4.5.

It seems that the general patterning for the Western Region is that grave goods are not included in the burials of the deceased. Yet, caution should be observed as limited recovery of these items may be due to the context in which the burials have been placed and how they have been recovered. Inskeep (1986: 229) already implied as much "it is, of course, quite possible that possessions were placed *on* graves and have become dispersed to such an extent that the association is no longer recognizable." On the other hand we need to keep in mind the possibility that items classified as grave goods may represent personal adornments and have been buried with the body rather than included as separate items. See Appendix C for the pictures taken of both the grave goods and associated archaeology documented through the Iziko collections process.

4.5. Burials that display trauma or violence

There are six burials in the database that have evidence of some form of trauma or violence related to cause of the death. Two of these six burials are multiple burials and consequently contain nine individuals that display some form of trauma or violence (Table 4.12). As previously mentioned, a number of these individuals were recovered with bone points which could be related to the cause of death of the individuals (Dewar 2010; Pfeiffer 2013). In the burials, where bone points were not recovered, cause of

death has been determined by a forensic analysis of the skeletons. What is interesting to note is the cause of death, in these cases, seems to be blunt force trauma to the cranium (Pfeiffer *et al*.1999; Pfeiffer & van der Merwe 2004; Pfeiffer 2013). This is evident in the burials (SAM-AP 6348A and B and SAM-AP 6054A, B and C).

Violent burials have seen skeletons recovered in the sitting position. This includes juvenile burials, multiple burials and individual male burials. Although this seems to indicate that body positioning may be an indicator of violent death, this pattern may have been a product of sampling. Additionally, it should in no way suggest that all burials placed in the sitting position have a violent or traumatic cause of death, this is only true for the burials listed in Table 4.12. Furthermore there are burials recorded, where violence is indicated, which have the skeletons in the flexed position. This pattern is further analysed in Chapter 8 after the violent burials have first been temporally and spatially analysed.

The forensic report for UCT 587 indicated that this individual had signs of trauma, yet it was not absolutely clear if the individual died from this trauma, because of this the violent burials will be temporally and spatially analysed both with and without UCT 587.

Table 4.12: Burials which had a violent or traumatic cause of death arranged chronologically. Please note SAM-AP 6348A and SAM-AP 6348B is one double burial and SAM-AP 6054A, B and C are a part of a multiple burial.

Burial	Sex	Uncalibrated C14 date	Body position
Burial 1	Female	2270±40 BP (UGAMS2802)	Flexed
SAM-AP 6348B	Female	2460± 50 BP (GX-23455)	Flexed
UCT 591	Male	2460±40 BP (Beta 263612)	Seated
SAM-AP 6348A	Juvenile	2490±50 BP (GX-23871)	Flexed
SAM-AP 6054B	Juvenile	2530 ± 60 BP (Pta -4151)	Seated
UCT 587	Male	2580±40 BP(Beta-263610)	Seated
SAM-AP 6054A	Juvenile	2780 ± 45 BP (Pta-4211)	Seated
SAM-AP 6054C	Juvenile	No date	Seated
UCT 317	Female and infant	No date	Unknown

4.6. General pattern of Western Region burials

The burials within the Western Region seem to be primarily found in open locations, in which the bodies are placed in a flexed position on the right side. Grave goods are not found in great numbers in these burials. The sitting position seems to only extend to

male burials, except in the instance of multiple burials where only the females and juveniles are placed in a seated position. No males have been found in the multiple burials. There is evidence of individuals who died from some form of violence or trauma, in these instances the presence of bone points may indicate how the individuals died. Both the sitting and flexed position have been recorded in these burials and interestingly the juveniles and females who have died from violence have been interred in multiple burials.

Before the significance of any of these burial patterns can be determined, the information presented here shall initially be temporally and spatially mapped. This involves the calibration and statistical analysis of the radiocarbon dates, followed by the regional analysis of the location of the sites. Once the burials have been situated both in time and space (Chapters 5 and 6) the burials and the possible reasons as to why this patterning is present within the Western Region is discussed (Chapters 7 and 8).

4.7. The Eastern Region burials

The purpose of this section is to summarise the information that is available for the Eastern Region through the research which was conducted by Pearce (2008). This information is presented to facilitate a comparison between the two regions and to help highlight how they do and do not differ and ultimately to situate the areas regionally against each other.

Pearce's (2008) study used a database of 95 burials from the Eastern Region. A general picture of the burials emerged from this study. The burials were primarily found in rock shelters, with evidence of continual use of these shelters post-burial. The majority of the burials were interred in a flexed position with no clear preference for either the right or left side. There was a significant preference for the heading of individuals to be orientated either north or south and for the facing to be either east or west. There was only one documented multiple burial in the Eastern Region (UCT 196 [OH13] & UCT 197 [0H12]) burial comprising of two juveniles (Pearce 2008). Both juveniles were flexed, lying on the right side, with a south heading and an east facing. The left arm of OH13 was said to be lying across the shoulders of OH12, as though in an embrace (Goodwin

1938; Pearce 2008). In terms of the multiple single interments at one site there were a total of 13 sites that contained more than one single burial (Pearce 2008: 107).

The primary differentiation between the data available for the burials of the Western and Eastern Region relates to the inclusion of grave goods. In the Eastern Region the inclusion of grave goods in an interment is high. Further, there are more classes of items found within these burials as well. Pearce (2008) developed a sequence of temporal patterning and to a partial degree spatial patterning in relation to the inclusion and exclusion of certain grave goods from the burials. Ultimately Pearce (2008: 239-240) developed a three phased sequence to categorise the burials of the Eastern Region. The three phases are presented below (Pearce 2008: 239-240).

Phase 1 (Pearce 2008:239):

- Believed that an earlier burial phase existed outside of the time frame set up in his study.
- Pearce (2008: 239) stated that it would "pre-dated approximately 10 000 BP".
- Hypothesised that deceased individuals were unlikely to be buried in rock shelters.

Phase 2 (Pearce 2008:239):

- Phase 2 burials started from approximately 10 000 BP and continued to between 7000 and 6500 BP.
- Burials are found both in rock shelters and open sites.
- Few classes of grave goods found in the burials, normally less than two classes.
- Stones are regularly included in burials.
- There is a small diversity of grave good classes and low number of items is included in the burials.

Phase 3 (Pearce 2008: 240):

- Continues on from 7000 to 6500 BP to 2000 BP. This phase seemingly carries on past 2000 BP.
- There are both burials in rock shelters and open sites.

- “Larger number of classes of grave goods per grave. Usually more than three classes of grave goods per grave, although some graves may have had fewer or n o grave goods” (Pearce 2008: 240).
- Pearce (2008) documented that there was a large variety of grave good classes, he recorded a total of 28.
- Additionally there were a larger number of individual items included in the burials.

Keeping this in mind, where necessary, comparisons between the Western and Eastern Regions are discussed. Although the point of the dissertation now turns to the temporal and spatial analysis of the Western Region burials, the Eastern Regions burials are returned to and included in the discussion presented for the Western Region burials in Chapter 8.

Chapter 5: Temporal Analysis

An important step in understanding the patterning present in the burials within the Western Region is identifying their temporal relationships. This will historicize the burials and identify which time periods should be considered in greater detail. The temporal data plays a significant role in this research; it allows for otherwise unitary patterns to be split, thus allowing for a finer resolution analysis. As such, a comprehensive study was conducted on the burials that were directly radiocarbon dated.

5.1. Isotopes

There are three isotopes in carbon, ^{14}C, ^{13}C and ^{12}C. In terms of chemical properties these isotopes are the same, however, they differ in weight, with ^{14}C being the heaviest (Russell 2004: 12-13; Bronk Ramsey 2008). ^{12}C and ^{13}C are stable isotopes, whereas ^{14}C is a radio-isotope, and therefore decays over time (Sealy & van der Merwe 1986, 1988; Bronk Ramsey 2009). ^{12}C and ^{13}C as well as ^{15}N and ^{14}N can be used to determine dietary differences.

> "Phytoplankton and marine plants that form the base of marine food chains synthesise carbon from seawater, which is enriched in the ^{13}C isotope of carbon compared to the atmospheric carbon synthesised by terrestrial plants. The heavier isotope of nitrogen, ^{15}N, is enriched at each step in the food chain, such that herbivores are more enriched than plants, carnivores than herbivores and so on" (Bailey *et al*. 2002: 9)

^{14}C once combined with oxygen as CO_2 in the atmosphere (and subsequently dissolved in oceans) is incorporated into living organisms. At the death of an organism the proportion of ^{14}C relative to ^{12}C and ^{13}C starts decreasing. The half life or rate of decay of radiocarbon is 5730 years and the way that a radiocarbon age of a sample is determined is by measuring how much ^{14}C decay has occurred (Russell 2004; Bronk Ramsey 2008). The more the ^{14}C isotope has decayed in comparison to the ^{13}C and ^{12}C the older a specimen is. There are two methods to identify the rate of the decay. Accelerator mass spectrometry (AMS) where the proportions of the isotope in relation to each other are

measured directly and decay counting where the amount of beta decay is measured (Bowman 1995; Russell 2004: 13; Bronk Ramsey 2008).

However, this process provides only a determination, a probability distribution (Russell 2004:12), and in order to attain a calendar age the carbon reservoirs affects need to taken into consideration. These reservoirs pass carbon through what is known as the "carbon cycle" (Aitken 1990; Russell 2004:12). This cycle effects radiocarbon dating, and the pace at which the carbon is transferred during this cycle needs to be adjusted for. This highlights the need, once more, for radiocarbon dates to be calibrated. The carbon reservoirs effect has been a factor of great importance while dealing with this temporal data and during the process of calibrating.

5.2. Calibration

In order to determine a calendar age, a radiocarbon date is calibrated against a calibration curve. This process is necessary because in order to interpret radiocarbon measurements as dates "some form of statistical analysis using a calibration curve" is needed (Bronk Ramsey 2009: 337). A calibration curve documents the cycles and fluctuations of ^{14}C in the atmosphere in relation to calendar ages. For example, one of the first calibration curves used tree rings as a means to construct the curve (Russell 2004:16). The tree ring growth yields calendar ages, while the radiocarbon measurements of each tree ring relates to known calendar ages (Stuiver & Suess 1966; Russell 2004: 16). This information is plotted together to form a calibration curve. When calibrating a date the calendar age is considered the point at which the radiocarbon age intercepts with the curve (Russell 2004: 19). It should be kept in mind that just as a radiocarbon determination has an associated error, so too do calibration curves. The fluctuations in the curve will influence the resultant calibrated date. This is not a simple relationship and means that it is no way certain that a radiocarbon age will yield a similar calendar age.

5.3. Calibrating the burial dates

In this research, the radiocarbon dates were calibrated using the OxCal programme version 4.2 (Bronk Ramsey 2009). Two calibrations curves were used, the ShCal13 curve (Hogg *et al.* 2013) and Marine13 curve (Reimer *et al.* 2013). The reason both curves are needed is that most of the burials come from coastal contexts and represent individuals with a mixed terrestrial and marine diet. It is therefore necessary to account for marine reservoir effects. The ^{14}C within the atmosphere and the oceans are not of the same levels. This is because carbon cycles very slowly through the massive reservoir of oceanic waters. The percentage of marine food in an individual's diet needs to be calculated in order to ensure an accurate calibration. What happens then is the offset of years in relation to Marine13 curve is taken into consideration while the date is calibrated. However, Marine13 has a modelled ocean average and in order for an accurate calibration a local delta R (ΔR) offset is also needed (Reimer *et al*. 2013:1871). The ΔR accounts for the local mixing of currents and can therefore add or subtract years from the international marine reservoir (Dewar & Pfeiffer 2010: 1611). For sites along the West coast of southern Africa the ΔR of 146±85 years is used, this value was established by Dewar *et al*. (2012: 1488) where measurements were taken from both marine shell and marine and terrestrial organisms in order to determine a weighted ΔR for the Holocene.

The percentage of marine diet is calculated using the same method suggested by Dewar & Pfeiffer (2010). They evaluate two ways of calculating percentage marine in the diet: a method using expected endpoints and one using observed endpoints. They conclude that the method using observed endpoints provides more accurate results (Dewar & Pfeiffer 2010: 1619-1620). When calculating percentage marine in diets you need to have a comparison point of the range of isotopic values of local food (Dewar & Pfeiffer 2010: 1618). The observed end points are in this case -19‰ (terrestrial) to -10.6‰ (marine) derived from the published values of skeletons in the Western Cape (Dewar& Pfeiffer 2010; see also Sealy & van der Merwe 1986; Pfeiffer & Sealy 2006).

The following formula is used to calculate the percentage marine:

$$\% \text{ Marine} = (\delta_t - \delta_{CO}) \div (\delta_m - \delta_t) \times 100$$

where "δ_t is the most depleted $\delta^{13}C$ value from the local sample, which is assumed to represent a 100% terrestrial diet; δ_{CO} is the $\delta^{13}C$ value of the human collagen; and δ_m is the most enriched $\delta^{13}C$ value in the sample, which is assumed to represent a 100% marine-based diet" (Dewar& Pfeiffer 2010: 1615). Inserting the observed west coast values, the formula is as follows:

$$\%Marine= (-19- \delta_{CO})/(-10.6+19)x-100$$

Here the -19 observed endpoint is substituted in the place of δ_t in both brackets. In the second bracket the -19 becomes a +19 as simply two subtraction signs in mathematics equate to a positive sign. You would input the $\delta^{13}C$ for the sample you wish to calibrate. The -10.6 endpoint is used for the δ_m value. The answer is then x-100 as you want a positive % marine value. Table 5.1 shows the percent marine diet and $\delta^{13}C$ for all of the samples that have a radiocarbon date.

Table 5.1: Burials which have uncalibrated radiocarbon dates and $\delta^{13}C$ values available. These data allow for the percentage marine in the diets to be calculated. The dates are ordered in chronological order from oldest to youngest.

Accession Number	Uncalibrated BP date	$\delta^{13}C$	% Marine
UCT 378	10 860 ± 180 BP (OxA-478)	-12.5	77
UCT 374	9750 ± 100 BP (PTA-3086)	-12.3	80
UCT 375	8000 ± 95 BP (PTA-1829)	-13.5	65
SAM-AP 4692	6891 ± 37 BP (OxA-17376)	-11.2	93
SAM-AP 37	6120 ± 70 BP (PTA-4353)	-14.9	49
SAM-AP 5068	5680 ± 70 BP (Pta-4370)	-14.6	52
SAM-AP 6060	4820 ± 90 (To-9531)	-16.6	29
UCT 248	4730 ± 95 BP (Gx-13185)	-14.2	57
UCT 112	4445 ± 50 BP (PTA-2003)	-11.2	93
SAM-AP 4793	4110 ± 60 BP (PTA-4694)	-12.9	73
UCT 433	4050 ± 100 BP (OxA-477)	-15.9	37
SAM-AP 1149	3970 ± 50 BP (PTA-4690)	-12.3	80
SAM-AP 4637	3880 ± 50 BP (PTA-4803)	-17.2	21
UCT 334	3850 ± 80 BP (OxA-457)	-19	0
UCT 373	3835 ± 50 BP (PTA-1754)	-14	60
SAM-AP 5040	3570 ± 60 BP (PTA-4225)	-17.6	17
UCT 333	3540 ± 60 BP (PTA-1642)	-19	0
UCT 229	3220 ± 55 BP (PTA-928)	-12	83
UCT 158	3190 ± 60 BP (PTA-5686)	-13.5	65
SAM-AP 6051	3190 ± 50 BP (PTA-2969)	-11.9	85
UCT 162	2880 ± 50 BP (PTA-929)	-11.5	89

UCT 588&589	2870 ± 50 (PTA-9375)	-10.2	105
UCT 222	2830 ± 85 BP(GX-13184)	-12.6	76
SAM-AP 6054A	2780 ± 45 BP (PTA-4211)	-11.7	87
SAM-AP 4203B	2760 ± 50 BP (PTA-4798)	-11.2	93
UCT 596	2690 ± 40 BP (Beta263611)	-16.5	30
UCT 427	2670 ± 80 BP (Gx-14816)	-11.8	86
SAM-AP 5095	2660 ± 70 BP (PTA-4674)	-13.2	69
SAM-AP 4203A	2590 ± 50 BP (PTA-4412)	-10.6	100
UCT 587	2580 ± 40 BP(Beta-263610)	-14.7	51
SAM-AP 6031	2560 ± 50 BP (PTA-4814)	-11.6	88
SAM-AP 5075	2530 ± 60 BP (PTA-4669)	-10.6	100
SAM-AP 6054b	2530 ± 60 BP (PTA-4151)	-14.8	50
SAM-AP 6017	2490 ± 50 BP (PTA-4293)	-13.3	68
SAM-AP 6348A	2490 ± 50 BP (GX-23871)	-12.7	75
Burial 3	2470 ± 49 BP(UGAMS2803)	-12.4	79
SAM-AP 6348B	2460 ± 50 BP (GX-23455)	-14.2	57
UCT 591	2460 ± 40 BP (Beta263612)	-14.3	56
SAM-AP 6314	2445 ± 50 BP (OxA-6219)	-12.8	74
SAM-AP 4899	2440 ± 60 BP (PTA-4149)	-14.2	57
SAM-AP 1157	2420 ± 60 BP (PTA-4217)	-13.8	62
Burial 5	2420 ± 25 BP(UGAMS3062)	-11.9	85
UCT 224	2400 ± 100 BP (OxA-455)	-13.9	61
SAM-AP 6023	2355 ± 85 BP (Gx-13180)	-12.2	81
Burial 4	2340 ± 30 BP(UGAMS2804)	-12.6	76
UCT 169	2320 ± 50 BP (PTA-5694)	-13.2	69
Burial 1	2270 ± 40 BP(UGAMS2802)	-13	71
UCT 595	2250 ± 40 BP(Beta-263613)	-15.8	38
SAM-AP 1449	2230 ± 100 BP (OxA-453)	-17.3	20
SAM-AP 4304A	2220 ± 50 BP (PTA-4656)	-12.3	80
SAM-AP 4942	2220 ± 45 BP (PTA-4829)	-12.6	76
UCT 317	2220 ± 40(Beta-241163)	-11.9	85
SAM-AP 4306	2210 ± 50 BP (PTA-4350)	-13.3	68
UCT 134	2210 ± 40 (GrA-23226)	-12.1	82
SAM-AP 4720	2195 ± 80 BP (Gx-13179)	-12.1	82
SAM-AP 4308	2170 ± 60 BP (PTA-4404)	-11.8	86
UCT 394	2150 ±70 BP (PTA-4964)	-17.5	18
Eland cave 1&2	2145 ± 50 BP (OxA-6217)	-18.8	2
SAM-AP 4813	2140 ± 45 BP (PTA-4204)	-14.9	49
UCT 385	2130 ± 60 (PTA-5281)	-16.9	25
UCT 397	2130 ± 45(PTA-4967)	-16.5	30
SAM-AP 4636	2130 ± 45 BP (PTA-4379)	-13.5	65
UCT 391	2110 ± 70 BP (PTA-5284)	-18.4	7
UCT 331	2100 ± 70 BP (PTA-3869)	-18.4	7

SAM-AP 4305	2100 ± 45 BP (PTA-4660)	-12.5	77
UCT 396	2090 ± 60 BP (PTA-4965)	-17.7	15
UCT 387	2055 ± 40 BP (PTA-8814)	-18.2	10
SAM-AP 5041	2010 ± 50 BP (PTA-4376)	-17.9	13
SAM-AP 6041B	2010 ± 45 BP (PTA-4768)	-15.7	39
UCT386	2000 ± 50 BP (PTA-5283)	-16.8	26

A total of 70 burials have radiocarbon dates and $\delta^{13}C$ values available. Six of the burials had radiocarbon dates but do not have $\delta^{13}C$ values available (SAM-AP 6272, SAM-AP 6052, UCT 435, SAM-AP 4202, SAM-AP 5070, SAM-AP 6260A). Once the percentage of marine diet had been calculated for these dates they were calibrated using OxCal v 4.2 taking into account the ΔR of 224±51 years and the percentage marine of each skeleton. The information was then calibrated using the mix-curves option using both the ShCal13 and Marine13 curves. Figures 5.1 provides an example of the coding entered into OxCal and Table 5. 2 gives the calibrated date ranges of the 70 radiocarbon dates.

```
Plot()
 {
  Curve("ShCal13","ShCal13.14c");
  Curve("Marine13","Marine13.14c");
  Delta_R("LocalMarine",146,85);
  Mix_Curves("Mix-1", "ShCal13", "LocalMarine", 77, 10);
  ("UCT378", 10860, 180);
  Mix_Curves("Mix-2", "ShCal13", "LocalMarine", 80, 10);
  ("UCT374", 9750, 100);
 };
```

Figure 5.1: Example of the source code used for all single models. Note the use of the ShCal13 and Marine13 curve as well as the Local Marine offset. In addition to these, each skeleton's percentage marine information was entered with a 10% margin for error.

Following standards for reporting calibrated radiocarbon dates (Millard 2014), full source code is given in Appendix D.

Table 5.2: Calibrated date ranges for Western Region burials. Both the 68% and 95% confidence range have been given. The dates are ordered chronologically from oldest to youngest.

Accession Number	68% Calibrated BP date (Modelled results)	95% Calibrated BP date (Modelled results)
UCT 378	12572-12015	12713-11615
UCT 374	10727-10432	10907-10259
UCT 375	8573-8374	8756-8227
SAM-AP 4692	7380-7270	7426-7231
SAM-AP 37	6769-6552	6880-6461

SAM-AP 5068	6284-6037	6341-5949
SAM-AP 6060	5576-5274	5587-5050
UCT 248	5243-4878	5321-4817
UCT 112	4565-4403	4695-4301
SAM-AP 4793	4332-4001	4358-3913
UCT 433	4416-4099	4549-3931
SAM-AP 1149	4136-3970	4221-3887
SAM-AP 4637	4424-3987	4350-3900
UCT 334	4290-3989	4414-3924
UCT 373	3904-3719	3994-3633
SAM-AP 5040	3827-3639	3906-3512
UCT 333	3831-3643	3902-3567
UCT 229	3035-2843	3133-2773
UCT 158	3103-2887	3205-2810
SAM-AP 6051	2965-2795	3061-2751
UCT 162	2664-2451	2702-2355
UCT 588&589	2555-2352	2668-2335
UCT 222	2678-2398	2740-2320
SAM-AP 6054A	2482-2320	2662-2290
SAM-AP 4203B	2455-2292	2604-2163
UCT 596	2727-2496	2751-2418
UCT 427	2359-2139	2535-2011
SAM-AP 5095	2470-2200	2669-2137
SAM-AP 4203A	2250-2043	2298-1989
UCT 587	2454-2211	2654-2150
SAM-AP 6031	2257-2040	2305-1979
SAM-AP 5075	2140-1962	2268-1895
SAM-AP 6054B	2350-2163	2489-2081
SAM-AP 6017	2282-2062	2320-1987
SAM-AP 6348A	2197-2000	2300-1945
Burial 3	2148-1973	2279-1899
SAM-AP 6348B	2289-2101	2325-2008
UCT 591	2290-2113	2321-2024
SAM-AP 6314	2145-1970	2284-1889
SAM-AP 4899	2291-2056	2330-1972
SAM-AP 1157	2277-1985	2303-1919
Burial 5	2024-1897	2100-1857
UCT 224	2272-1932	2332-1834
SAM-AP 6023	2036-1803	2155-1682
Burial 4	1988-1859	2055-1788
UCT 169	2010-1850	2103-1755
Burial 1	1934-1784	2002-1715
UCT 595	2085-1931	2157-1859

SAM-AP 1449	1839-2297	2338-1841
SAM-AP 4304A	1851-1686	1916-1591
SAM-AP 4942	1856-1705	1921-1611
UCT 317	1820-1671	1875-1590
SAM-AP 4306	1882-1723	1974-1625
UCT 134	1824-1669	1876-1590
SAM-AP 4720	1822-1611	1931-1515
SAM-AP 4308	1776-1569	1857-1517
UCT 394	2094-1893	2301-1758
Eland cave 1&2	2145-1935	2298-1892
SAM-AP 4813	1893-1741	1995-1685
UCT 385	2015-1833	2145-1740
UCT 397	1993-1838	2052-1745
SAM-AP 4636	1820-1629	1878-1570
UCT 391	2084-1889	2297-1752
UCT 331	2082-1880	2292-1749
SAM-AP 4305	1703-1554	1807-1498
UCT 396	2009-1839	2141-1746
UCT 387	1995-1884	2006-1835
SAM-AP 5041	1923-1750	1997-1714
SAM-AP 6041B	1816-1622	1874-1569
UCT386	1868-1707	1927-1607

The dates presented in Table 5.2 are the results of the modelled data or the posterior probability. What this means is that these are the date ranges after the software has taken into consideration the additional information entered into the model, in this case the dietary information. The date ranges are also given at 68% and 95% probability, with the 95% range presenting a more accurate date range. Certain burials were originally included in the database but after they had been calibrated they no longer fit the appropriate time range for this research. That is the burials needed to fall into a time range that was not younger than 2000 cal BP. Table 5.3 lists the excluded burials and their time ranges after calibration.

Table 5.3: Burials that were originally included in this study but were removed once they were calibrated and their date ranges no longer fell within an appropriate time scale for this research.

Accession Number	Uncalibrated BP date	68% Calibrated BP date	95% Calibrated BP date
SAM-AP 4309	2120 ± 45 BP (PTA-4385)	1683-1540	1783-1472

UCT220	2100 ± 21BP (PTA-5678)	1630-1519	1702-1484
SAM-AP 4304b	2070 ± 50 BP (PTA-4391)	1649-1470	1705-1390
SAM-AP 1443	2050 ± 50 BP (PTA-2309)	1605-1434	1695-1376
SAM-AP 6083	2000 ± 50 BP (PTA-4358)	1680-1497	1724-1400
UCT 584	2080 ± 30 BP (PTA9376)	1604-1482	1671-1411

The exclusion of these burials from the database has broader implications for research in general. Caution should be taken when relying on uncalibrated dates, as the date range may change significantly once a date is calibrated. This is due to the fact that calibration curves can fluctuate at any point, and are unpredictable. However, this may not be a problem for all research where the temporal information is abundant. In this case, the majority of the burials fell within an acceptable time frame therefore it did not alter the research significantly. It is still not common practice to calibrate dates in southern Africa, because, firstly, the technique is not as refined as could be for southern Africa and secondly because it is easier to run statistical tests on uncalibrated dates (Russell 2004). However, this should not deter researchers from calibrating as techniques will become more refined the more common place it becomes. Research and time boundaries could be better understood if calibrated date ranges were also incorporated. What is more, it will further cement the likelihood of assumptions relating to site use, abandonment and arrival of new groups of people and so on.

Calibration of the dates is only the first step in what can be done; it is then possible to model dates to obtain the further likelihoods or probabilities of dates, and analyse start and end boundaries of patterns. This is done by Bayesian modelling.

5.4. Bayesian analysis

> "The use of the Bayesian approach for the interpretation of archaeological chronologies based on the premise that, although the calibrated dates of radiocarbon measurements accurately estimate the calendar ages of the samples themselves, it is the dates of the archaeological events associated with those samples that are of importance" (Bayliss *et al.* 2007: 5).

Bayesians statistics is based on Baye's Theorem which is stated as follows (Jackman 2009):

$$P(A|B) = \frac{P(B|A)\,P(A)}{P(B)}$$

P(A)= prior probability of A

P(B)= prior probability of B

P(A|B)= posterior probability of A given B

P(B|A)= posterior probability of B given A

What Bayesian statistics allows for is the analysis of data to result in posterior beliefs based on some form of informed data. To put it another way "Bayes's Theorem, which tells us how to update prior beliefs about parameters and hypotheses in light of data, to yield posterior beliefs" (Jackman 2009: XXVII). Which equates to: prior beliefs→ data → posterior beliefs (Jackman 2009: XXVII). Barring the formula, essentially Bayesian modelling allows for one to ascertain new beliefs in the light of information about the likelihood of "A" (Schulting 2008a, b; Jackman 2009).

Bayesian statistics has a lot of advantages for its application in the social sciences. Its prime advantage is that it allows for data that may not necessarily be absolute or obtained in ideal circumstances to be analysed even though some subjective judgements are then made about the model being applied. "The Bayesian approach rests on a subjective notion of probability, but demands that subjective beliefs conform

to the laws of probability" (Jackman 2009: XXXIV). This statement highlights the fact that there are two ways to apply Bayesian statistics in archaeology. The first model has stratigraphic information available, which means there is strong evidence for ordering a set of events in a particular way. This is known as an informative prior belief (Bayliss *et al*. 2007: 5). In the second instance, there is no stratigraphic information available but assumptions come from the data set itself in a single phase of activity (Schulting 2008a; Bayliss *et al*. 2007: 5). The second instance is the method which will be applied to the dates for the Western Region. Because the dates range from multiple sites and have various time ranges the assumptions will be made from the chronology itself. In order to do this a model needs to be set up in OxCal.

As there are 70 dates that have dietary information, a single phase model was first set up within a sequence. A phase in OxCal is not a group in terms of the archaeological sense of the word but merely poses no internal constraints on the data, a sequence in OxCal constrains the data to be in chronological order (Bronk Ramsey 1995, 1998: 463). Figure 5.2 gives an example of the coding of this model. Once the model is defined within OxCal, the program "calculates the probability distribution of the individual calibrated radiocarbon results and then attempts to reconcile these distributions with the prior information by repeatedly sampling each distribution to build up a set of solutions consistent with the model structure." (Bayliss *et al*. 2007: 6). The model set up in this instance will identify a possible start and end boundary for the event, in this case the event is the practice of burying the dead. Table 5.4 and Figure 5.3 provide the results of this model.

```
Plot()
 {
  Curve("ShCal13","ShCal13.14c");
  Curve("Marine13","Marine13.14c");
  Delta_R("LocalMarine",224,51);
  Sequence()
  {
   Boundary("Start 1");
   Phase("1")
   {
    Mix_Curves("Mix-1", "ShCal13", "LocalMarine", 77, 10);
    ("UCT378", 10860, 180);
    Mix_Curves("Mix-2", "ShCal13", "LocalMarine", 80, 10);
    ("UCT374", 9750, 100);
    Mix_Curves("Mix-3", "ShCal13", "LocalMarine", 65, 10);
```

```
  ("UCT375", 8000, 95);
  Mix_Curves("Mix-4", "ShCal13", "LocalMarine", 93, 10);
  ("SAM4692", 6891, 37);
  Mix_Curves("Mix-5", "ShCal13", "LocalMarine", 49, 10);
  ("SAM37", 6120, 70);
  Mix_Curves("Mix-6", "ShCal13", "LocalMarine", 52, 10);
  ("SAM5068", 5680, 70);
  Mix_Curves("Mix-7", "ShCal13", "LocalMarine", 57, 10);
  ("UCT248", 4730, 95);
 };
 Boundary("End 1");
 };
};
```

Figure 5.2: Example of the code used to set up the model. The Boundary function informs the model that a start and end date for the event should be generated. Note that the dates in this phase are once more calibrated with the use of the dietary information and the mixed curves option.

Figure 5.2 is an example of how the model is set up. All 70 dates were set up in this way in this one model. Once again the dates are calibrated accounting for the ΔR in the Western Region and the dietary information. This means that while the previous calibrated resulted were also modelled with this information, the Bayesian model will recalibrate these dates producing tighter posterior probabilities (Bruins *et al*. 2005).

Table 5.4: Calibrated date ranges of the burials once they have been run with the single phase model set up in OxCal v 4.2. This table also provides the start and end dates for this event.

Name	68% Posterior Probability cal BP	95% Posterior Probability cal BP
Boundary Start	11 656-11266	12 053-11 136
UCT 378	11 561-11 223	12077-11 149
UCT 374	10 728-10 437	10 902-10 259
UCT 375	8579-8377	8756-8245
SAM-AP 4692	7379-7270	7426-7231
SAM-AP 5068	6285-6064	6338-5949
SAM-AP 6060	5594-5224	5597-5030
UCT 248	5231-4908	5320-4820
UCT 112	4565-4405	4695-4304
SAM-AP 4793	4232-4101	4378-3901
UCT 433	4415-4099	4563-3928
SAM-AP 1149	4135-3968	4223-3887
SAM-AP 4637	4225-3988	4351-3902
UCT 334	4286-3989	4414-3925
UCT 373	3904-3720	3992-3635
SAM-AP 5040	3826-3638	3905-3510

UCT 333	3830-3643	3903-3566
UCT 229	3035-2845	3132-2774
UCT 158	3104-2887	3205-2805
SAM-AP 6051	2965-2799	3060-2750
UCT 162	2661-2540	2701-2355
UCT 588&589	2570-2342	2648-2329
UCT 222	2680-2420	2741-2323
SAM-AP 6054A	2482-2321	2660-2288
SAM-AP 4203B	2452-2291	2605-2168
UCT 596	2725-2499	2751-2413
UCT 427	2359-2136	2526-2013
SAM-AP 5095	2469-2204	2670-2136
SAM-AP 4203A	2247-2048	2298-1989
UCT 587	2446-2212	2655-2150
SAM-AP 6031	2255-2041	2306-1980
SAM-AP 5075	2141-1964	2267-1895
SAM-AP 6054B	2350-2163	2489-2081
SAM-AP 6017	2281-2065	2320-1987
SAM-AP 6348A	2195-1998	2300-1944
Burial 3	2146-1973	2281-1899
SAM-AP 6348B	2289-2104	2327-2010
UCT 591	2288-2113	2323-2025
SAM-AP 6314	2145-1966	2285-1888
SAM-AP 4899	2287-2058	2330-1970
SAM-AP 1157	2278-1986	2305-1920
Burial 5	2025-1899	2099-1855
UCT 224	2282-1928	2330-1830
SAM-AP 6023	2037-1801	2155-1681
Burial 4	1987-1859	2056-1790
UCT 169	2007-1847	2100-1759
Burial 1	1936-1788	2000-1712
UCT 595	2083-1931	2157-1845
SAM-AP 1449	2296-1935	2337-1840
SAM-AP 4304A	1849-1688	1912-1595
SAM-AP 4942	1856-1705	1922-1614
UCT 317	1820-1670	1873-1594
SAM-AP 4306	1882-1724	1974-1631
UCT 134	1828-1659	1886-1570
SAM-AP 4720	1820-1615	1925-1535
SAM-AP 4308	1766-1592	1845-1530
UCT 394	2093-1891	2300-1754
Eland cave 1&2	2145-1935	2298-1889
SAM-AP 4813	1893-1742	1995-1690

UCT 385	2016-1833	2145-1740
UCT 397	1991-1840	2055-1745
SAM-AP 4636	1818-1633	1878-1580
UCT 391	2085-1891	2298-1753
UCT 331	2081-1882	2293-1749
SAM-AP 4305	1709-1570	1800-1520
UCT 396	2009-1839	2101-1744
UCT 387	1934-1845	1998-1823
SAM-AP 5041	1921-1750	1997-1712
SAM-AP 6041B	1816-1625	1875-1580
UCT386	1867-1707	1925-1610
Boundary End	1556-1354	1604-1156

The results in Table 5.4 show the calibrated dated ranges of the burials once more, after they have been run in a model with the application of Bayesian statistics. The date ranges do not vary substantially from the previous results in Table 5.2. This is not unexpected as the first set of calibrated dates were also modelled to include dietary information and to correct for the marine reservoir effect. What is different is that in this model the posterior estimate is better defined for each date, narrowing down the width of a calibrated date (Bruins *et al*. 2005; Figs 5.3, 5.4). The start and end boundaries are also shown. The estimated start boundary at the 95% range is 12 053-11 136 cal BP and the estimated end boundary is 1604-1156cal BP. This estimates when the event would have began and when it would have been likely to have ended based on the information entered into the model. It is, of course, possible that these start and end boundaries can change if more information becomes available. It should also be noted that UCT 378 had a poor agreement index of 26. 4% (it is recommended that each burial have a 60% agreement index) when it was calibrated within the phase (Bronk Ramsey 2008: 263-265). This means that the date failed a chi-squared test and does not seem to fit well into the model. This begs the question of if there is a problem with the actual radiocarbon determination or if this date is an outlier and should be excluded. Which will once again affect the start boundary. For the larger research question it throws into doubt whether burial practice really did begin around that time. And if it did why are there not more burials with such older dates, is this due to lack of preservation? Or is this burial simply a once off event for that time period? However, because UCT 378 agreement index is not below 10% (Bronk Ramsey 2008:263-265) and the overall agreement index of the model (114.6 %) is well above 60% it is not necessary to re-run

the model with UCT 378 programmed as an outlier, it is just essential to note the poor agreement of the burial.

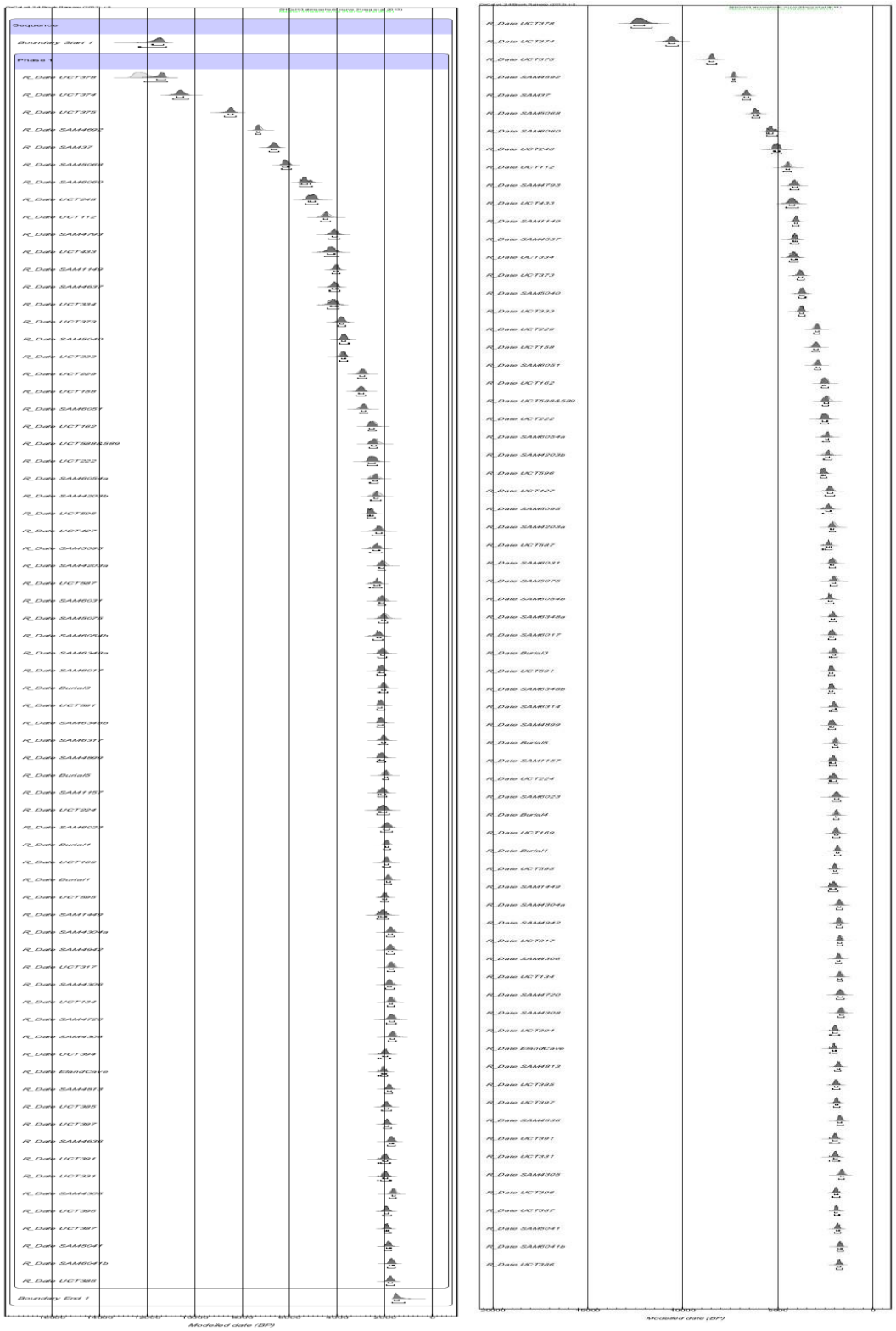


Figure 5.3: These graphs, with the Bayesian modelled dates being on the left and the calibrated dates without a model on the right, show how the posterior estimate is better defined within the Bayesian model. The grey area is the prior probability and the black area is posterior

probability (Bruins *et al*. 2005). The graphs on the left have the end and start boundary plotted as well.

Please note the SAM-AP burials in all the figures presented in this chapter have been labelled without the –AP, as in certain instances the inclusion of-AP created a warning error of duplicate names in Oxcal. Therefore the –AP was removed to avoid confusion.

The difference between the Bayesian modelled dates and the calibrated dates can be better seen in single plots (Fig. 5.4).

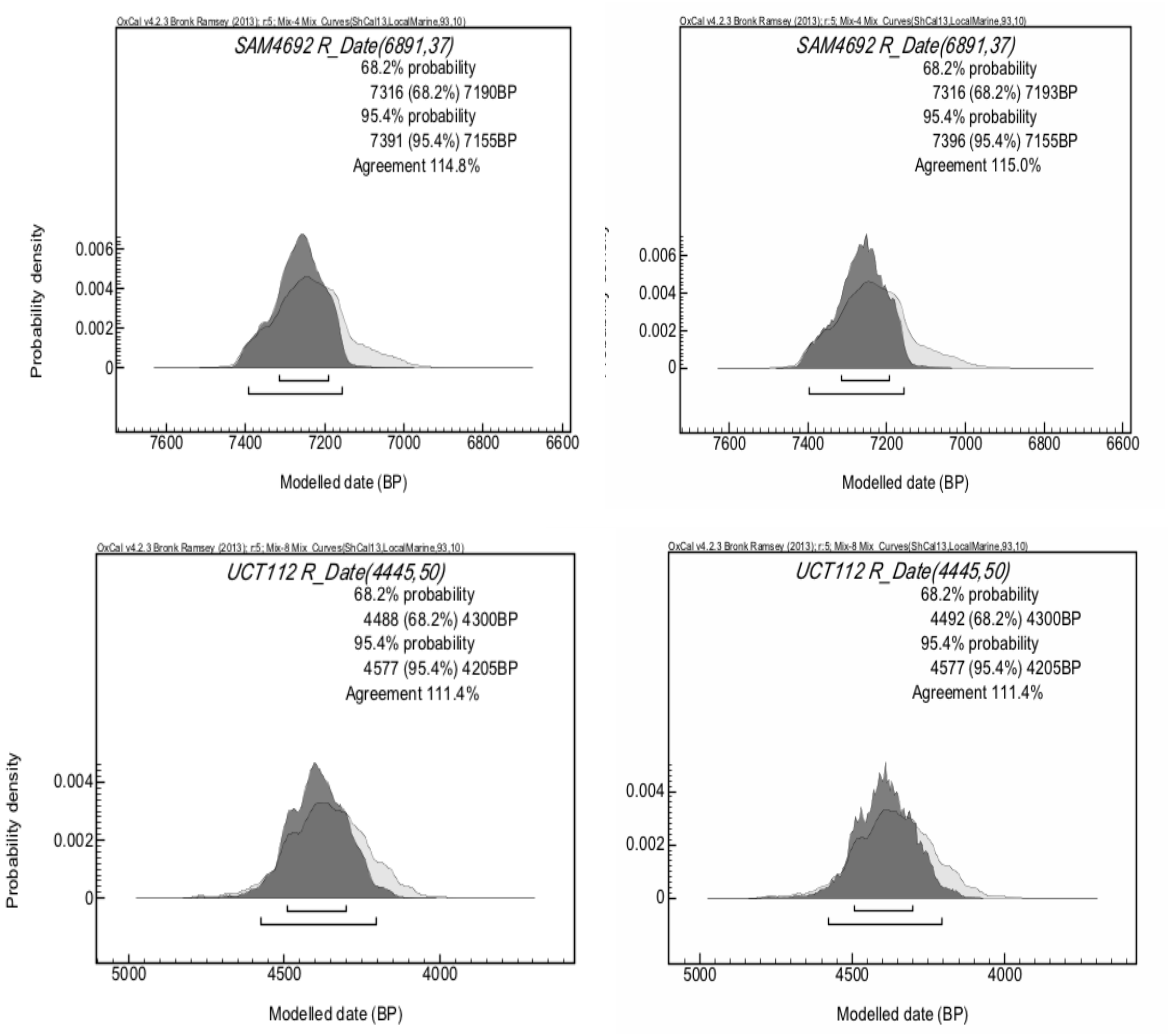


Figure 5.4: Single plots of specific burials. Bayesian modelled single plots are on the left while the calibrated dates without a Bayesian model are on the right.

In each of these single plots you can see that the posterior probability is better defined. This just means that the modelled probability is constrained to a tighter degree to be able to work out the start and end boundaries.

While applying this model to the dates in the database in general to obtain a possible start and end point of the burial practices the model is better suited particularly for the patterning present in these burials, as identified in the previous chapter. A single phase sequential model that would identify the start and end boundaries for each of the observed patterns was set up. The following multiple plot graphs will now be presented:

- For the burials that were part of multiple burials
- The burials that documented some form of trauma or violence as the cause of death
- For the burials within the seated position
- For the burials that were in the flexed position
- For burials that had some form of ochre use
- For sites that show repeated burial usage

5.5. Multiple burials

The multiple burials in which there was more than one individual in the same burial pit, were plotted in a single phase model (Fig. 5.5). As only nine of the skeletons had associated dates, the start and end boundary is not as refined as it could be if there were more burials with dates within this phase.

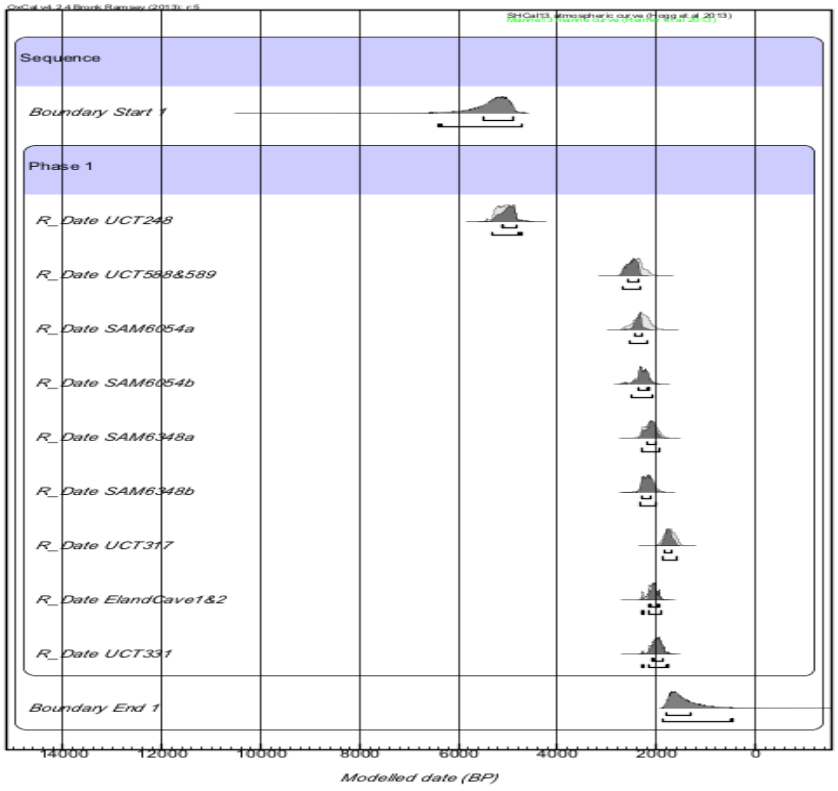


Figure 5.5: Multiple plot of the individual skeletons that were found in multiple burials. This graph displays the start and end boundary for this patterning.

In terms of the multiple burials the start boundary within the 95% range was 6616-4753 cal BP and end the boundary was from 1878-219 cal BP (Table 5.5). As there are only nine dates within the model, it is not surprising that the end boundary continues on into 219 cal BP. If more dates were available the boundaries would be better defined and a more accurate start and end date of this pattern could be produced. Please note, that all of the burials within this model still fall into a post-2000 BP time frame, the start and end boundaries do not affect the actual date ranges of the individual burials.

In light of the above, the 68% percent end boundary may actually be more useful with its given range of 1799-1238 cal BP (Table 5.5). Additionally, the start and end boundaries may change and be more concise if UCT 248 is removed from the model. This burial had a date range at 95% of 5312-4726, whereas the other burials fell between an approximate date range of 2600-1700 BP.

Two of the multiple burials had dates from both individuals within each interment. When those dates are calibrated and plotted together they should show some form of overlap to suggest single interment (Dewar & Pfeiffer 2010: 1619). The two burials are SAM-AP 6348 A and B and SAM-AP 6054 A and B. Figure 5.6 shows that once calibrated these dates do overlap, which does suggest single interment for these individuals.

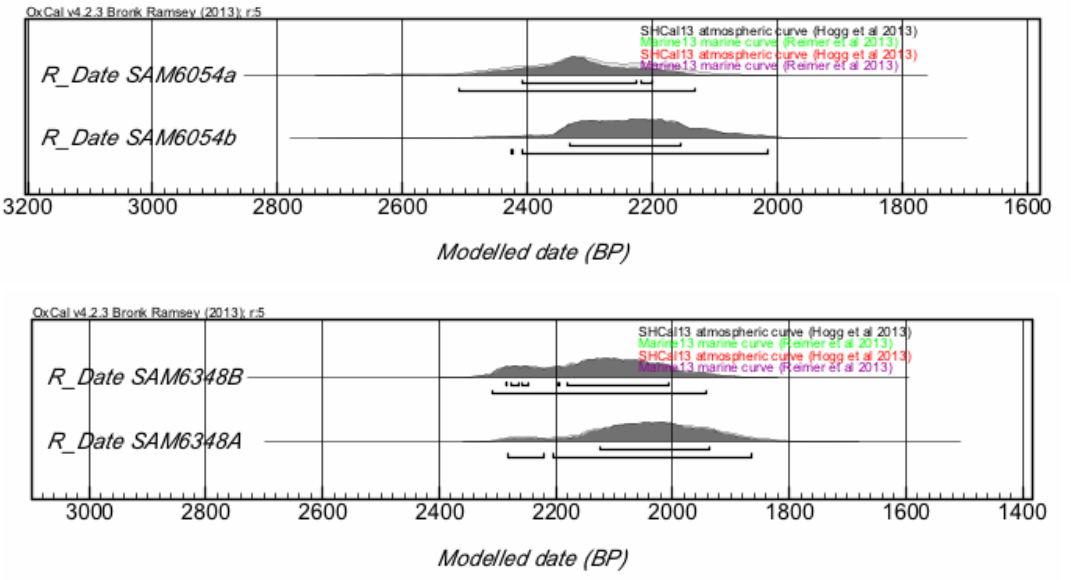


Figure 5.6: Two dated skeletons each from two graves, once calibrated, show considerable overlap in date ranges suggesting that both skeletons in each grave were interred in a single event.

Besides simple overlap of date ranges, a chi-squared test can be run on these date ranges. If they pass the test a combined date for these individuals will be given and it

will suggest that while you can not necessarily state these burials are synchronous it can be said that there is no evidence to suggest they are not synchronous (Bronk Ramsey 1998: 464). Figure 5.7 gives the source code used to perform the chi-squared test and Figures 5.8 and 5.9 display the results of the tests.

```
Plot()
 {
  Curve("ShCal13","ShCal13.14c");
  Curve("Marine13","Marine13.14c");
  Delta_R("LocalMarine",146,85);
  Combine()
  {
   Mix_Curves("Test1", "ShCal13", "LocalMarine", 87, 10);
   R_Date("SAM6054a", 2780, 45);
   Mix_Curves("Test2", "ShCal13", "LocalMarine", 50, 10);
   R_Date("SAM6054b", 2530, 60);
  };
```

Figure 5.7: Source code used to run the chi-squared test and produce a combined date.

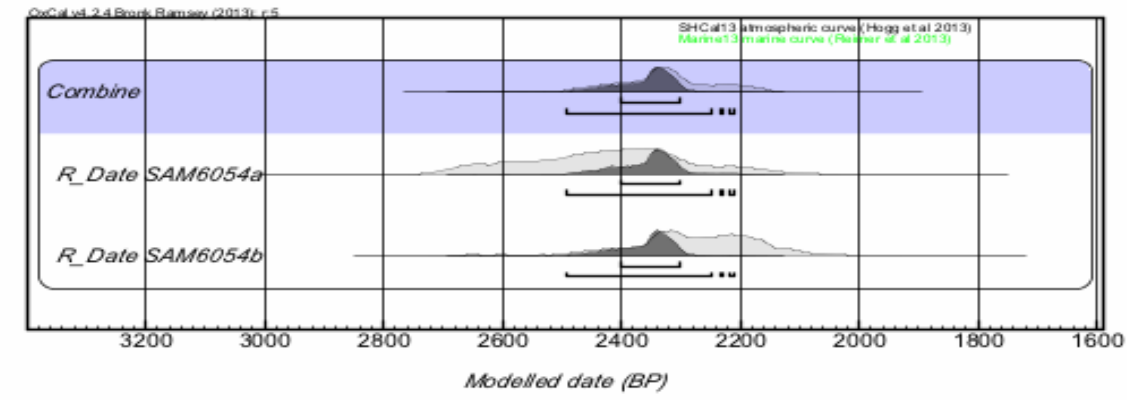


Figure 5.8: Result of chi-squared combined date for burial SAM-AP 6054A & B and the combined date.

These results show that SAM-AP 6054A and B do pass the chi-squared test (χ^2-Test: df=1 T=0.333[5% 3.841] as displayed in OxCal 4.2) suggesting that there is no reason to assume that they were not part of a single interment. What is more, it produces a combined date range for the burial, at 68% confidence, of 2401-2300 cal BP. At 95% confidence the date range is 2490-2212 cal BP. The same process was conducted for SAM-AP 6348A & B (X2-Test: df=1 T=0.010 [5% 3.841] as displayed in Oxcal 4.2) which produced a combined date range of 2285-2103 cal BP at 68% confidence and 2326-2011 cal BP at the 95% confidence level (Fig.5.9).

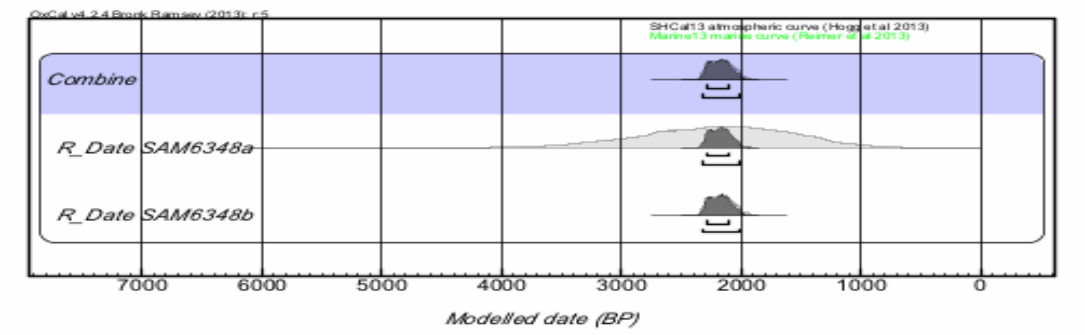


Figure 5.9: Displays the result for the chi-squared test on the burial SAM-AP 6348A and B, as well the combined date.

The above results show that SAM6348a&b do pass the chi-squared test and produces a combined date for the burial. At the 68% confidence level the date range for this burial is 2285-2102 cal BP. At the 95% degree the date range is 2326-2011 cal BP.

While the chi-squared test is useful to determine whether you can assume individuals were buried at the same time, the combined date is useful to obtain an accurate time frame for that specific burial. The combined dates should not be used within the model set up to work out a start and end boundary of an event. The individual dates contain more information about the event whereas the combined date merely produces a well dated occurrence.

5.6. Burials that show some form of trauma or violence

The results of the single phase model for the burials that indicate the cause of death due to some form of trauma or violence is presented in Figure 5.10. These burials that have died from some form of trauma or violence seem to fall into one time period. The burials have a start boundary at 95% confidence level of 2766-2295 cal BP and have an end boundary at the same confidence level of 1898-1396 cal BP. Table 5.5 documents the start and end boundaries for the 68% and 95% range. However, as was noted in Chapter 4 the model was run with and without UCT 587, as it was unclear if the individual in this burial died from the trauma or not. When the model is run without UCT 587 the burials have a start boundary at 95% confidence level of 2804-2234 cal BP and have an end boundary at the same confidence level of 1892-1360 cal BP (Table 5.5). The exclusion of UCT 587 does not dramatically alter the start and end date ranges of the model.

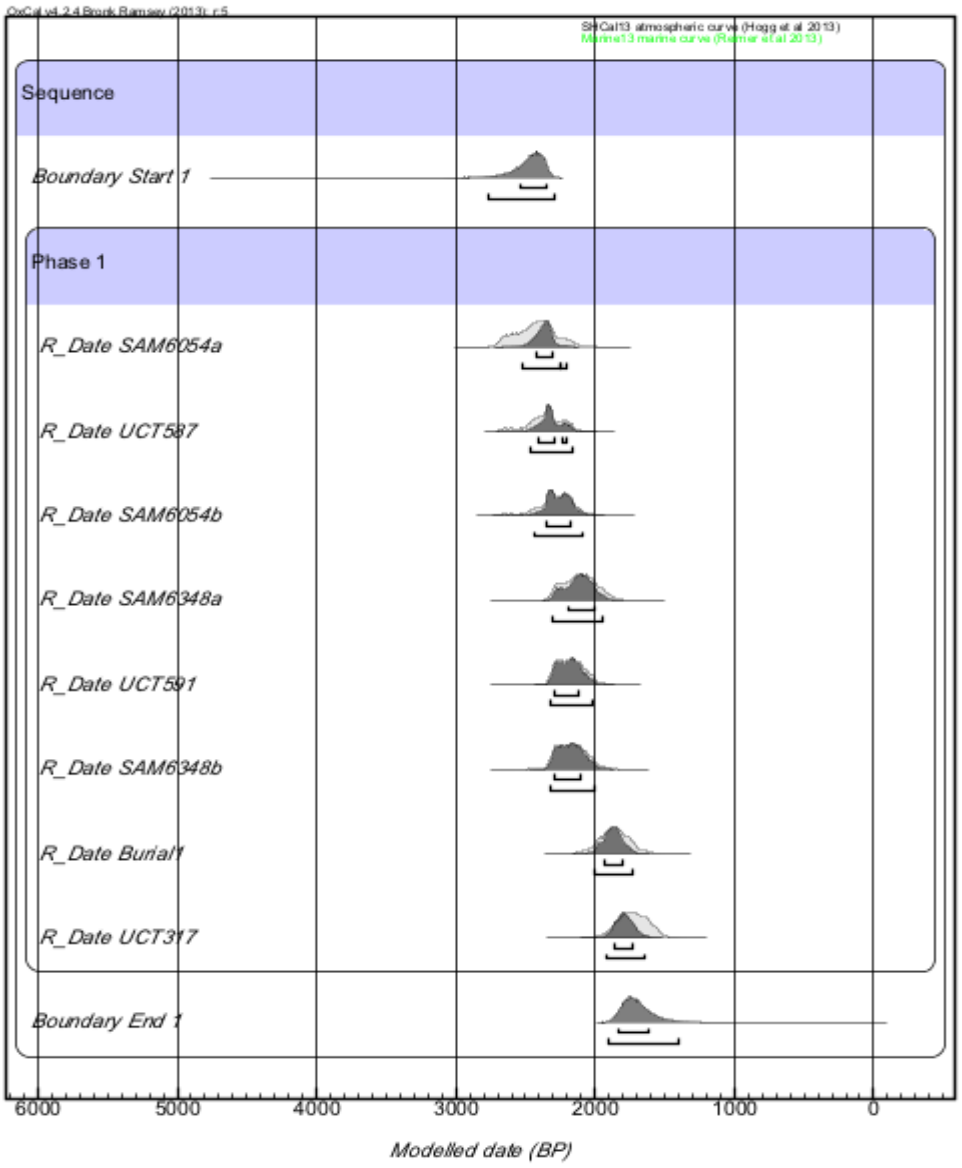


Figure 5.10: Burials that were documented to have some form or trauma or violence. The result of the single phase Bayesian model is displayed in the graph indicating start and end boundaries. UCT 587 is displayed in this model as its exclusion does not significantly alter the boundaries.

The next phase will look at the body positioning that the individuals within the burials had been buried in.

5.7. Burials that were placed in the seated and flexed position

A model was set up for the body positioning of the burials as the temporal data will signify if there is a difference between when individuals were placed in these positions. Figures 5.11 and 5.12 show these results. Not all the burials that were placed in a seated or flexed position had an associated radiocarbon date, the advent of more dates could easily change the models and their start and end boundaries.

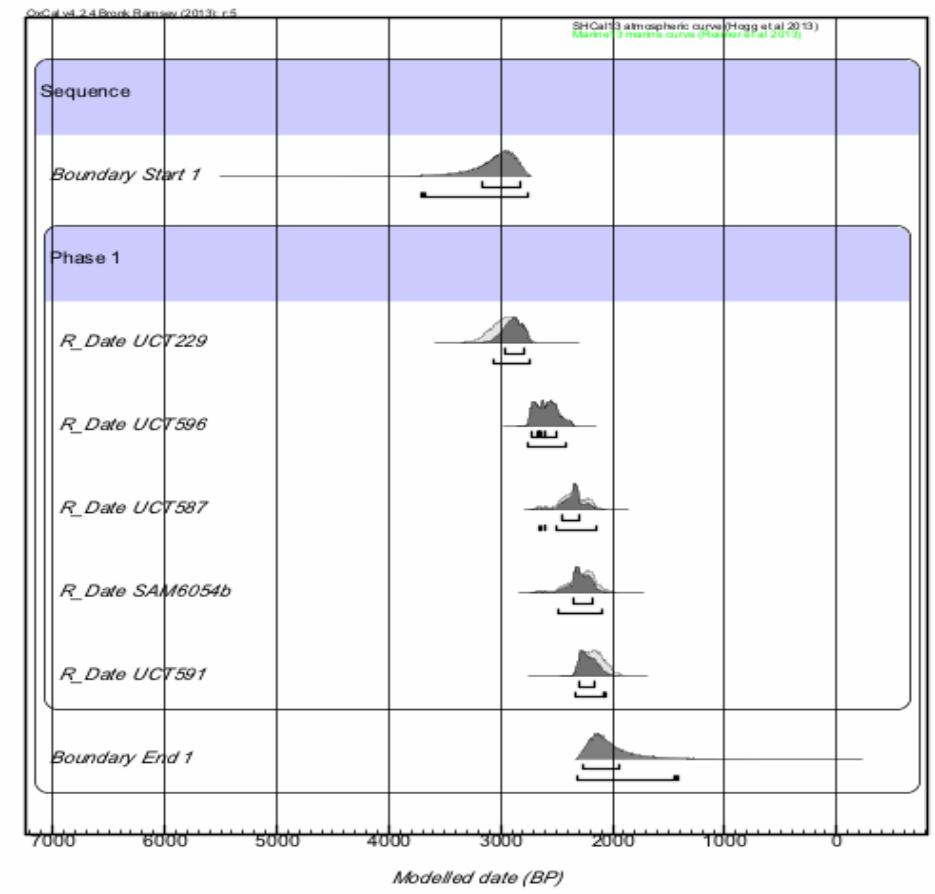


Figure 5.11: The graph shows the single phase modelled results for the burials that were placed in the sitting position.

The start and end boundary for the sitting position at the 95% confidence level was 3562-2752 cal BP and 2271-1449 cal BP respectively (Table 5.5). The flexed position patterning seems to be present from the beginning of the burial practices to almost the "end' in terms of where the time frame of this research has been set up (Table 5.5, Fig. 4.13). The start and end boundary for the flexed position and the 95% confidence level is 11 730- 10 267 cal BP and 1885-644 cal BP respectively.

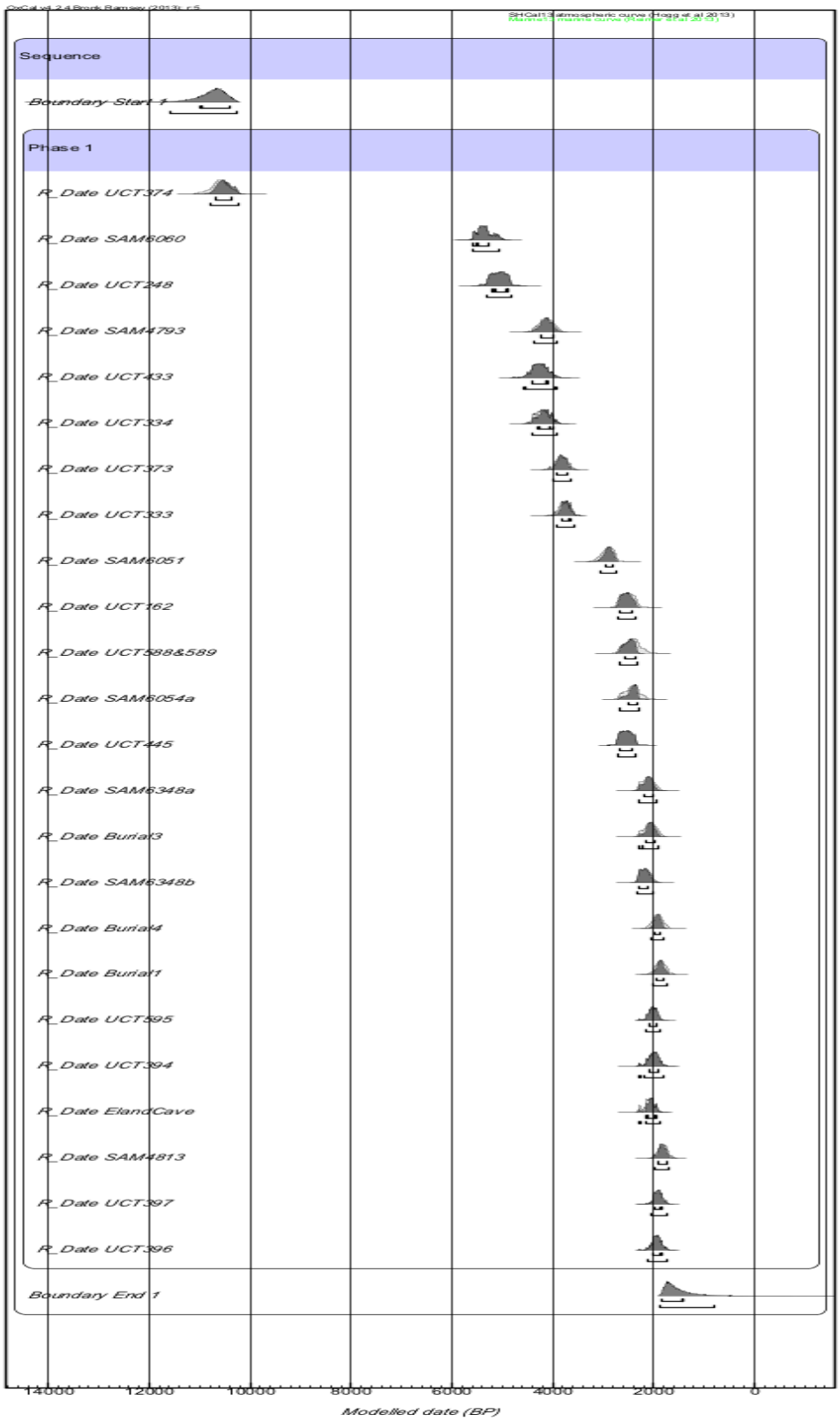


Figure 5.12: Modelled start and end boundaries for burials in the flexed position.

5.8. Burials that had evidence of ochre

As shown in the previous chapter, there were a few burials that showed ochre usage. A single phase sequential model was also set up for this burial feature. It should be noted that these are likely to change if more evidence for ochre usage becomes available; currently only a few burials comprise this model. From these results ochre usage began at 5373-3873 cal BP and had an end boundary of 2037-660 cal BP. These results are similar to the flexed burial model, as this pattern seems to continue on until the "end' in terms of where the time frame of this research has been set up (Fig. 5.13, Table 5.5). However, the results presented in Figure 5.13 show that most of the burials that have ochre present fall within a calibrated time range of about 1800-2300 BP.

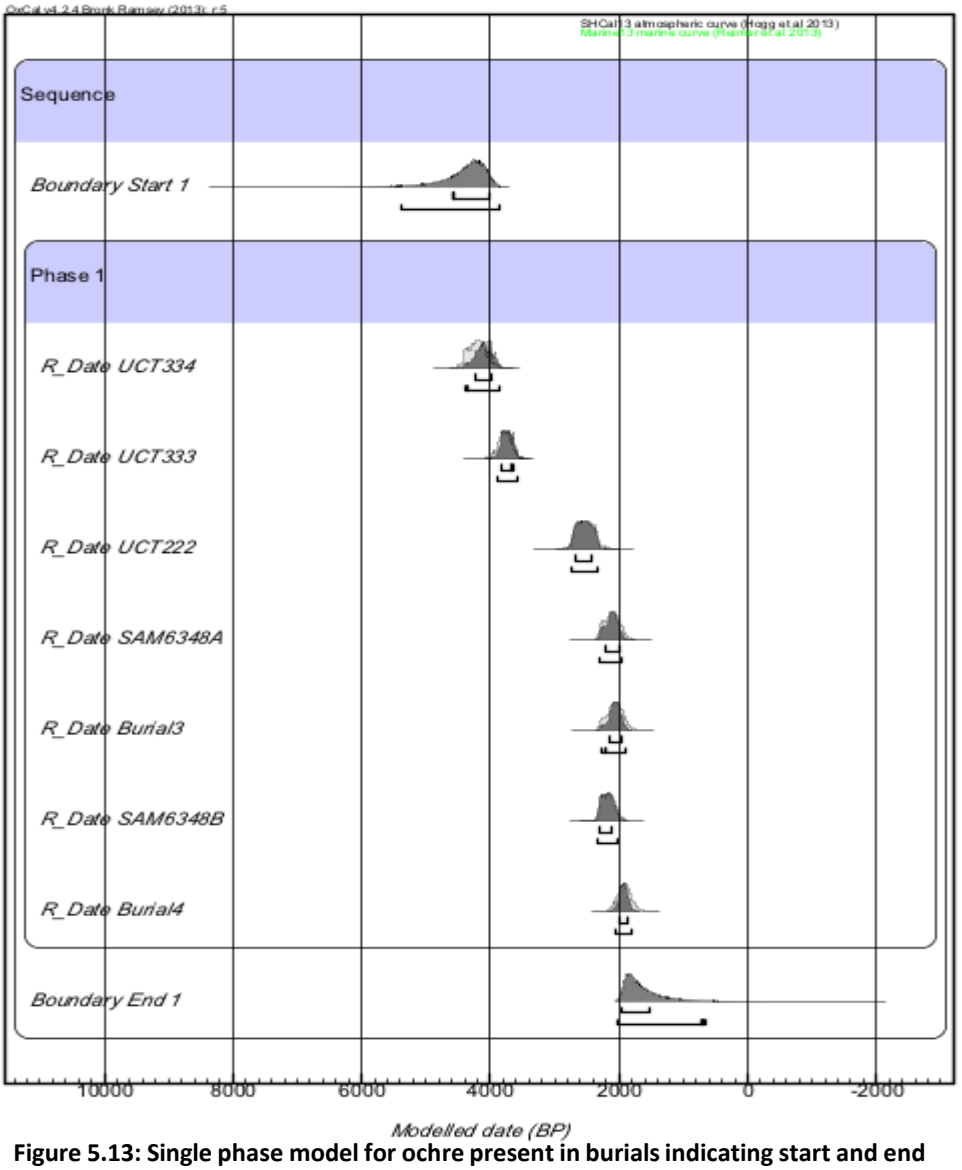


Figure 5.13: Single phase model for ochre present in burials indicating start and end boundaries.

Table 5.5: Start and end boundaries for the patterning relating to multiple burials, burials that displayed a form of violence or trauma and burials placed in the seated or flexed position.

Pattern	68% Start boundary	68% End boundary	95% Start boundary	95% End boundary
Multiple burials	5569-4907 cal BP	1799-1238 cal BP	6616-4753 cal BP	1878-219 cal BP
Violent or traumatic burials	2531-2345 cal BP	1827-1621 cal BP	2766-2295 cal BP	1899-1396 cal BP
Violent burials (without UCT 587)	2537-2234 cal BP	1828-1604 cal BP	2804-2234 cal BP	1892-1360 cal BP
Seated position	3129-2818	2172-1861 cal BP	3562-2752 cal BP	2271-1449 cal BP
Flexed position	11 016-10 428 cal BP	1836-1381 cal BP	11 730-10 267 cal BP	1885-644 cal BP
Ochre	4583-4007 cal BP	1968-1516 cal BP	5373-3873 cal BP	2037-660 cal BP

The broader implication of these results for research is that specific time periods can be identified and studied in greater detail to see what may be influencing the patterning apparent in Western Region LSA burials. For the multiple burials the period between 5000–2000 cal BP seems to be significant, if the individual calibrated ranges of the burials are considered. For the violent and seated burials these patterns seem to fall between approximately 3000-2000 cal BP. The broader archaeology is considered to see why such patterning occurs during those time ranges and not prior to that (Chapter 7). It is, of course possible that such time frames will change if more burials are discovered, dated and documented with contextual information available. The possible implication that burial patterning within this region is not static and change as time progresses will be further discussed in Chapter 7.

The next set of results that will be presented has to do with repeated site use for burials, both at specific sites and types of sites.

5.9. Faraoskop

Faraoskop is a rock shelter where approximately twelve individuals were buried (Manhire 1993). A single phase model was set up for this shelter. When these results are analysed, it is interesting to note that all of the calibrated date ranges seem to fall between a similar time span of 2000-1800 BP (Table 5.6). This narrow range raises the possibility that the individuals buried within this shelter died at the same time in the past, and that this shelter was used specifically to bury these individuals after their death. As the time ranges fall within similar boundaries, the Span function of OxCal was set up within this model. Span provides the time period, in years, between the first and last date in the model (Fig. 5.14)

Table 5.6: Calibrated date ranges and how the dates for the individuals at the Faraoskop rock shelter fall within a similar time period.

Accession number	Uncalibrated date	Calibrated date 68%	Calibrated date 95%
UCT 394	2150 ± 70 BP (PTA 4964)	1971-1880 cal BP	2029-1832 cal BP
UCT 385	2130 ± 60 BP(PTA 5281)	1966-1875 cal BP	2014-1826 cal BP
UCT 397	2130 ± 45 BP (PTA 4967)	1963-1871 cal BP	2002-1831 cal BP
UCT 391	2110 ± 70 BP (PTA 5284)	1970-1880 cal BP	2026-1831 cal BP
UCT 396	2090 ± 60 BP(PTA4965)	1969-1875 cal BP	2010-1829 cal BP
UCT 387	2055 ± 40 BP (PTA-8814)	1963-1874 cal BP	2000-1836 cal BP
UCT 386	2000 ± 50 BP (PTA-4358)	1977-1842 cal BP	1997-1791 cal BP

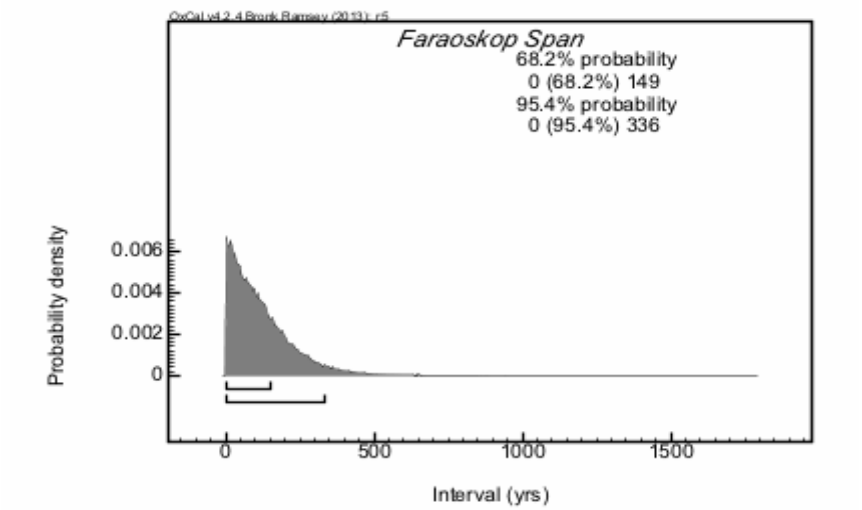


Figure 5.14: The time span between the first and last radiocarbon date of the Faraoskop rock shelter model, 149 years at 68% confidence and 336 years at 95% confidence.

The gap between the first and last date is minimal (at 68% the span is 149 years and at 95% it is 336 years) which, at the scale of radiocarbon error, provides further support

that these individuals may have died and been buried during one time period in the past. When the multiplot of the single phase is analysed, it is possible to see how the burials have all calibrated to a similar time period. Further, the start and end dates of this event are closely aligned, supporting the analysis for one event occurring at this rock shelter (Table 5.7, Fig. 5.15).

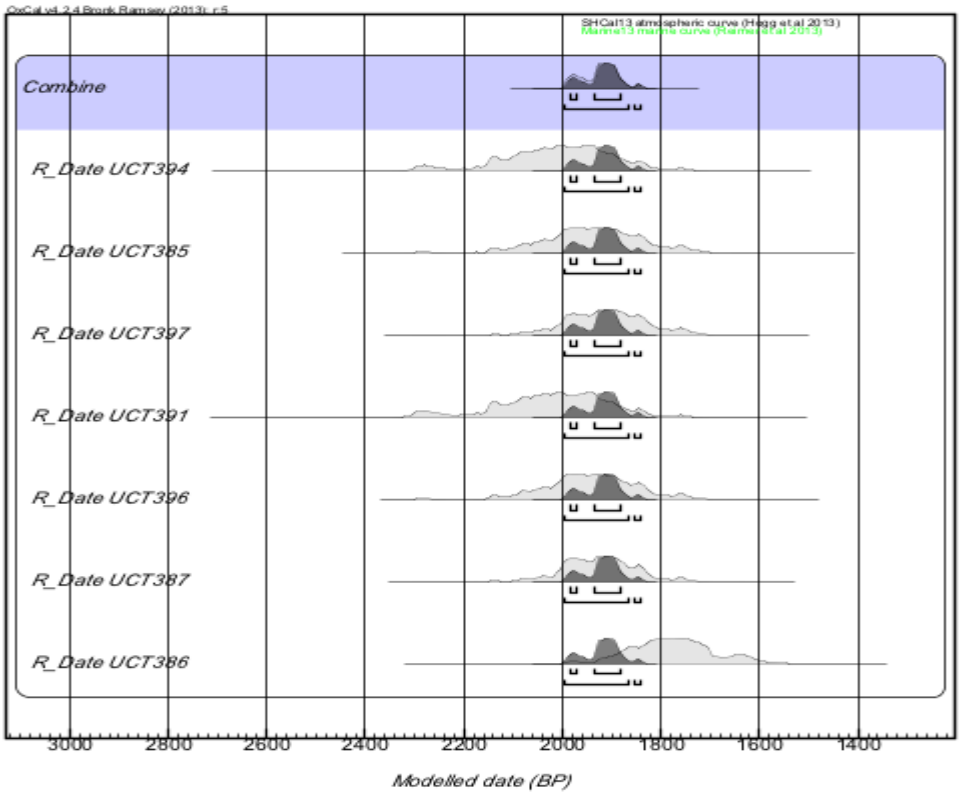


Figure 5.15: Faraoskop bayesian model detailing how the calibrated dates all fall within a similar time constraint

Table 5.7: Start and end boundaries for Faraoskop. The dates are very similar and suggest one single short burial event occurred at the site.

	68% Start boundary	68% End boundary	95% Start boundary	95% End boundary
Faraoskop	2014-1906 cal BP	1921-1815 cal BP	2118-1871 cal BP	1985-1724 cal BP

As these results suggest a possible single interment or burial event for this rock shelter, another model was set up running the Combine function of OxCal to determine whether these dates pass the chi-squared test and produced a combined date (Figs 5.16, 5.17).

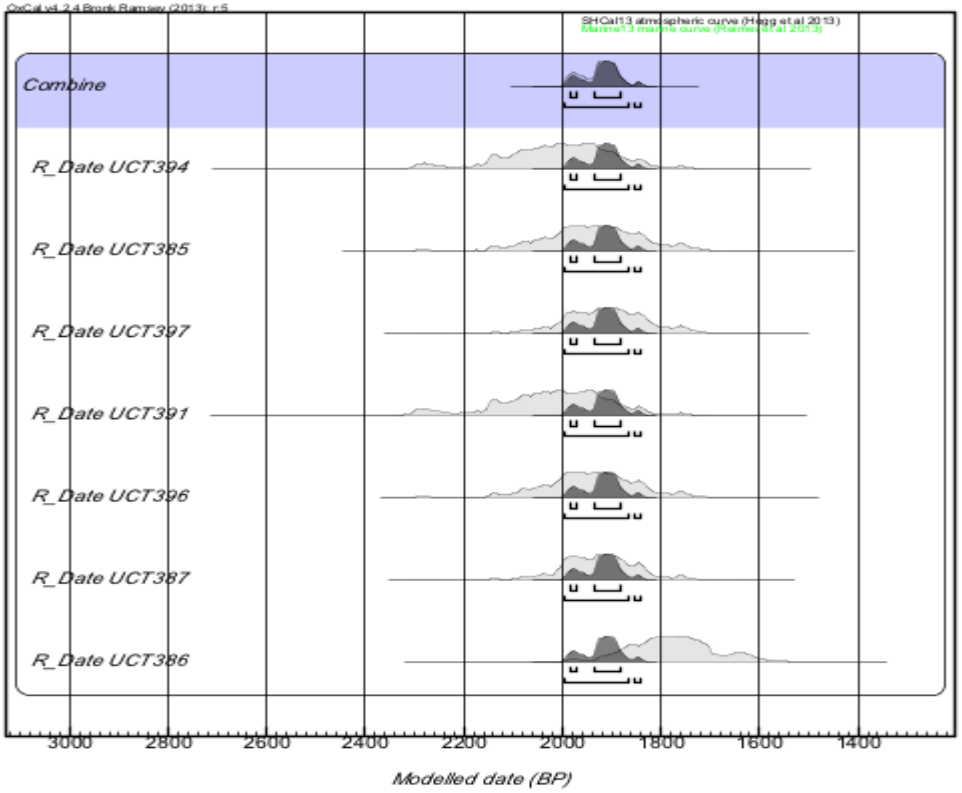


Figure 5.16: Model producing a combined date for the Faraoskop burials

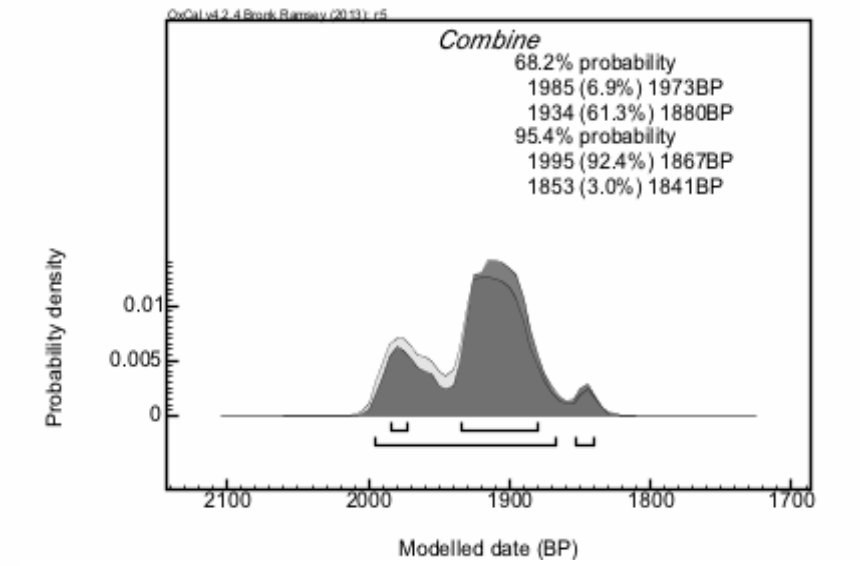


Figure 5.17: Combined date for the Faraoskop burials. The date is 1985-1880 cal BP and 1995-1841 cal BP at the 68% and 95% confidence level respectively.

As a combined date of 1985-1880 cal BP at the 68% range and 1995-1841 cal BP and the 95% confidence level was produced, it seems plausible to suggest that this was one single burial event, where the individuals within this shelter died and were buried at the same time. This will be discussed in detail in Chapter 8 however there is no substantial evidence available on the cause of death for these individuals and this may limit the discussion to some degree.

5.10. Diaz Street Midden

The Diaz Street Midden is a burial site where six individuals were discovered, of which four have associated radiocarbon dates and adequate burial contexts. A single phase model was set up with the available radiocarbon determination. The results are similar to those of the Faraoskop rock shelter. The calibrated dates are all of a similar time period of approximately 2000-1800 cal BP (Table 5.8, Fig. 5.18). These results allow for the possibility that this burial occurred in the same time period, with these individuals being selected to be buried together at this specific site.

Table 5.8: Calibrated date ranges at the Diaz Street Midden. From these results it is possible to see that the burials were dated to a similar time period

Accession number	Uncalibrated date	Calibrated date 68%	Calibrated date 95%
Burial 3	2470±49BP (UGAMS2803)	2022-1906 cal BP	2116-1870 cal BP
Burial 5	2420±25 BP(UGAMS3062)	1994-1901 cal BP	2054-1863 cal BP
Burial 4	2340±30 BP (UGAMS2804)	1986-1891 cal BP	2030-1831 cal BP
Burial 1	2270±40 BP (UGAMS2802)	1985-1876 cal BP	2016-1796 cal BP

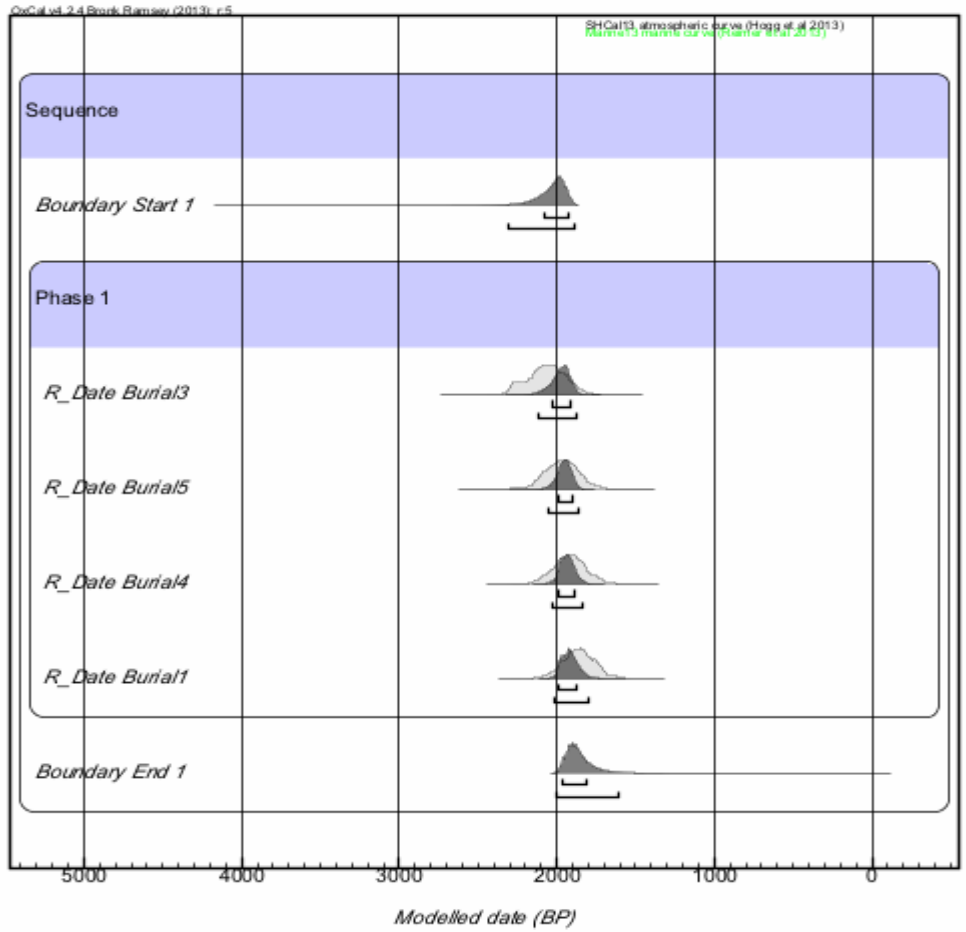


Figure 5.18: Single phase model, showing how the burials fall into one time frame on the multiplot.

Additionally, the results of the Span function of OxCal shows that the gap between the first and last radiocarbon date is not vast. At the 68% range the gap in years is 236 and at the 95% the span is 645. Although larger than the Span results of Faraoskop, these results still lend themselves to the interpretation that this site saw a single interment of multiple individuals occurring at the same time in the past (Fig. 5.19).

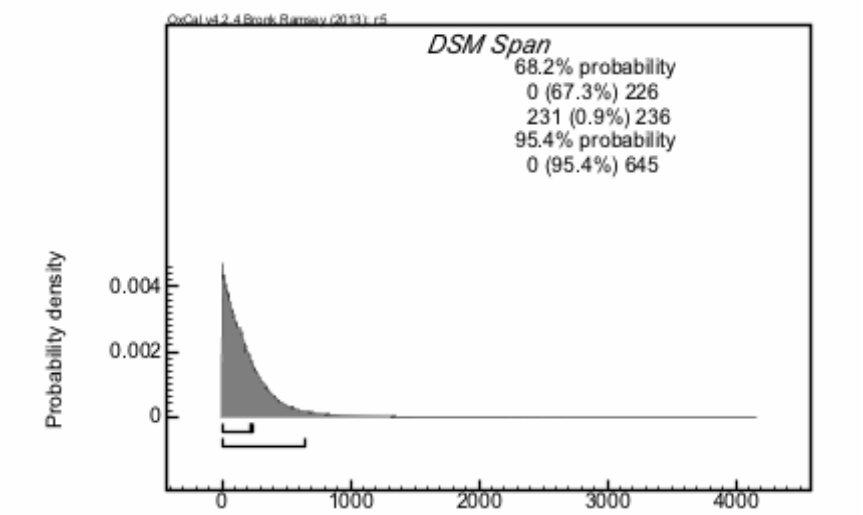


Figure 5.19: Results of the Span interval between the first and last radiocarbon dates at Diaz Street Midden.

Furthermore, the start and end boundaries are such that the event seems to have occurred during one time period, and not span a significantly large time frame (Table 5.9).

Table 5.9: Start and end boundaries for the Diaz Street Midden Burials.

	68% Start boundary	**68% End boundary**	**95% Start boundary**	**95% End boundary**
Diaz Street Midden	2082-1925 cal BP	1961-1815 cal BP	2311-1883 cal BP	2005-1595 cal BP

Because the initial single phase model presents the possibility that these individuals died and or were buried synchronously, a second model was set up to see whether the burials would produce a combined date and pass the chi-squared test (Figs 5.20, 5.21). Ideally these results will be similar to what was seen in the single phase model.

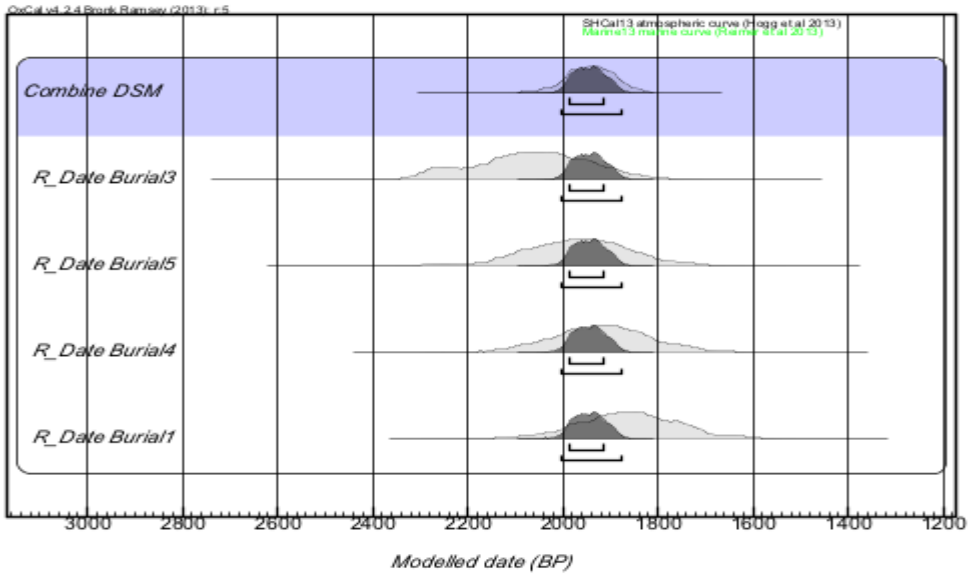


Figure 5.20: Model displaying the combined test for the Diaz Street Midden Burials.

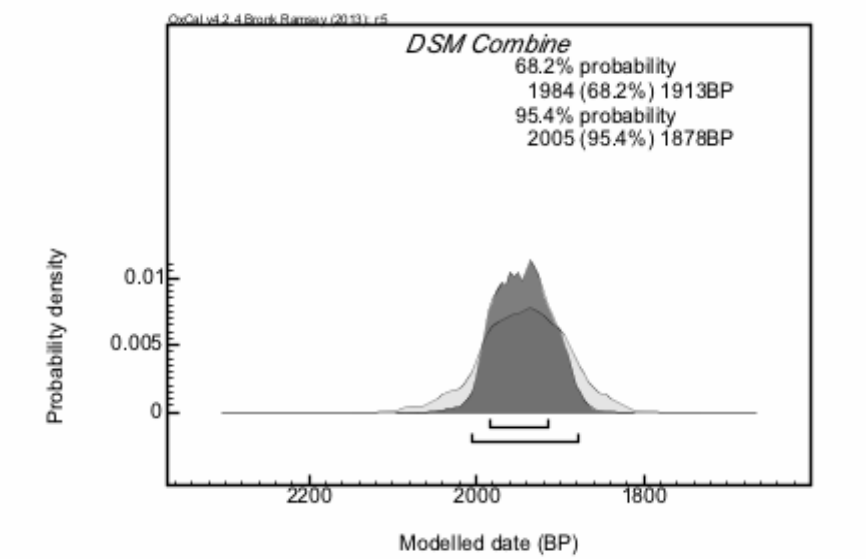


Figure 5.21: The actual combined date produced from the model set up for the Diaz Street Midden burials.

A combined date of 1984-1913 cal BP at the 68% range and 2005-1878 cal BP at the 95% was produced for these burials (Fig. 5.21). These results allow for the assumption that, although it cannot be asserted that these burials did occur at the same time, there is no reason to suspect that are not synchronous. The Diaz Street Midden burial will be discussed in greater detail in Chapter 8.

5.11. Elands Bay Cave

Elands Bay Cave is another rock shelter that has had some repeated use as a site of interment. Only four individuals were uncovered from this rock shelter and the radiocarbon dates of these four burials are spaced quite far apart from one another. As there are only four burials, with time ranges that do not align a Bayesian model was not set up for this site. However, the burials were calibrated together showing repeated use of the rock shelter as a burial site (Fig. 5.22). This is significant in itself, as it means this specific rock shelter was chosen on four occasions to burial individuals. This begs the question as to why the rock shelter was used as the burial site when there are other spaces available around Elands Bay.

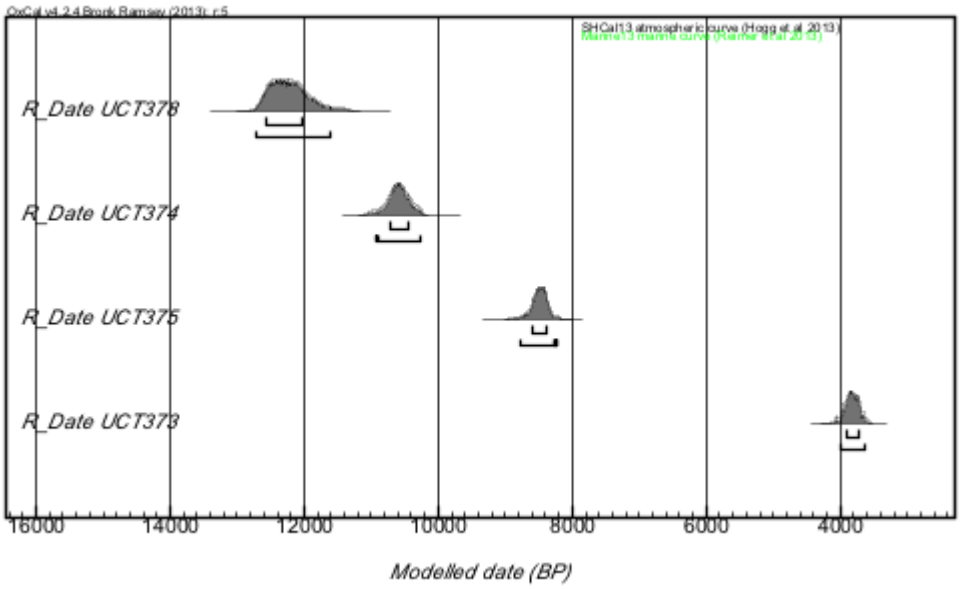


Figure 5.22: Modelled dates for Elands Bay Cave burials.

Additionally, the actual area of Elands Bay has seen some burials that did not occur just in the rock shelter. These burials were plotted with the Elands Bay Cave burials to show repeated use of the Elands Bay area as burial grounds (Fig. 5.23). A Bayesian model was not set up as the dates were limited and varied quite significantly so that the results would not be reliable and would most likely return an end date the carried on into negative time frames.

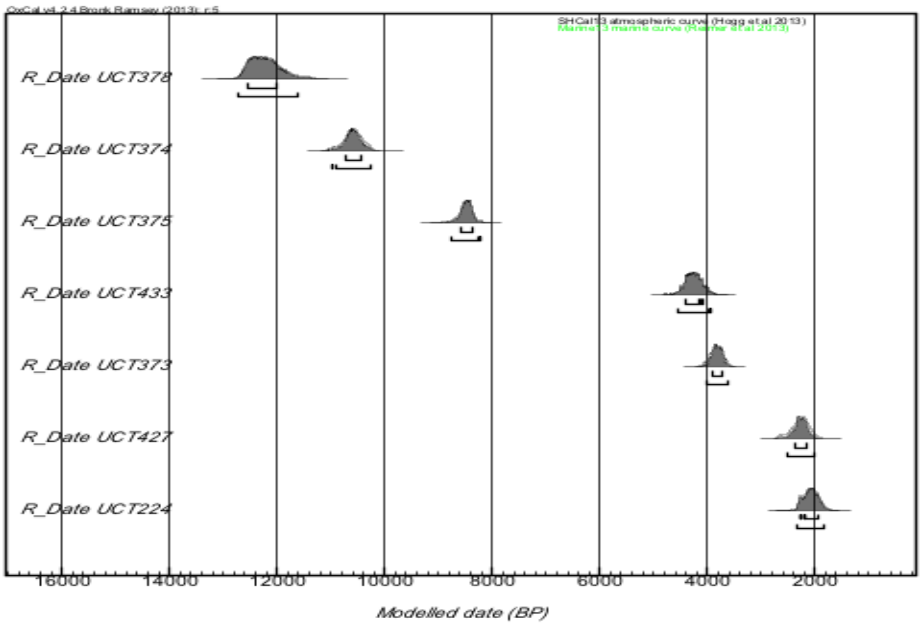


Figure 5.23: Modelled dates from burials in the Elands Bay area.

It could be argued that Elands Bay area and specifically Elands Bay Cave has some significance for burial locations.

5.12. Shell middens

A significant number of burials were uncovered in shell middens. The burials that were uncovered from these middens, and could be dated, were run in a single phase Bayesian model. Predominately, these burials seem to fall between a calibrated time range of 2000-1700 cal BP. One burial had a significantly earlier time range between 4000-3800 cal BP. The start and end boundary for burials in shell middens was 4455-3999 cal BP to 1722-1338 cal BP at the 68% confidence level and 5044-3877 to 1787-992 cal BP at the 95% confidence level (Fig. 5.24). The choice of shell middens as burial locations, specifically around 2000 BP, is something that will be discussed in Chapters 7 and 8.

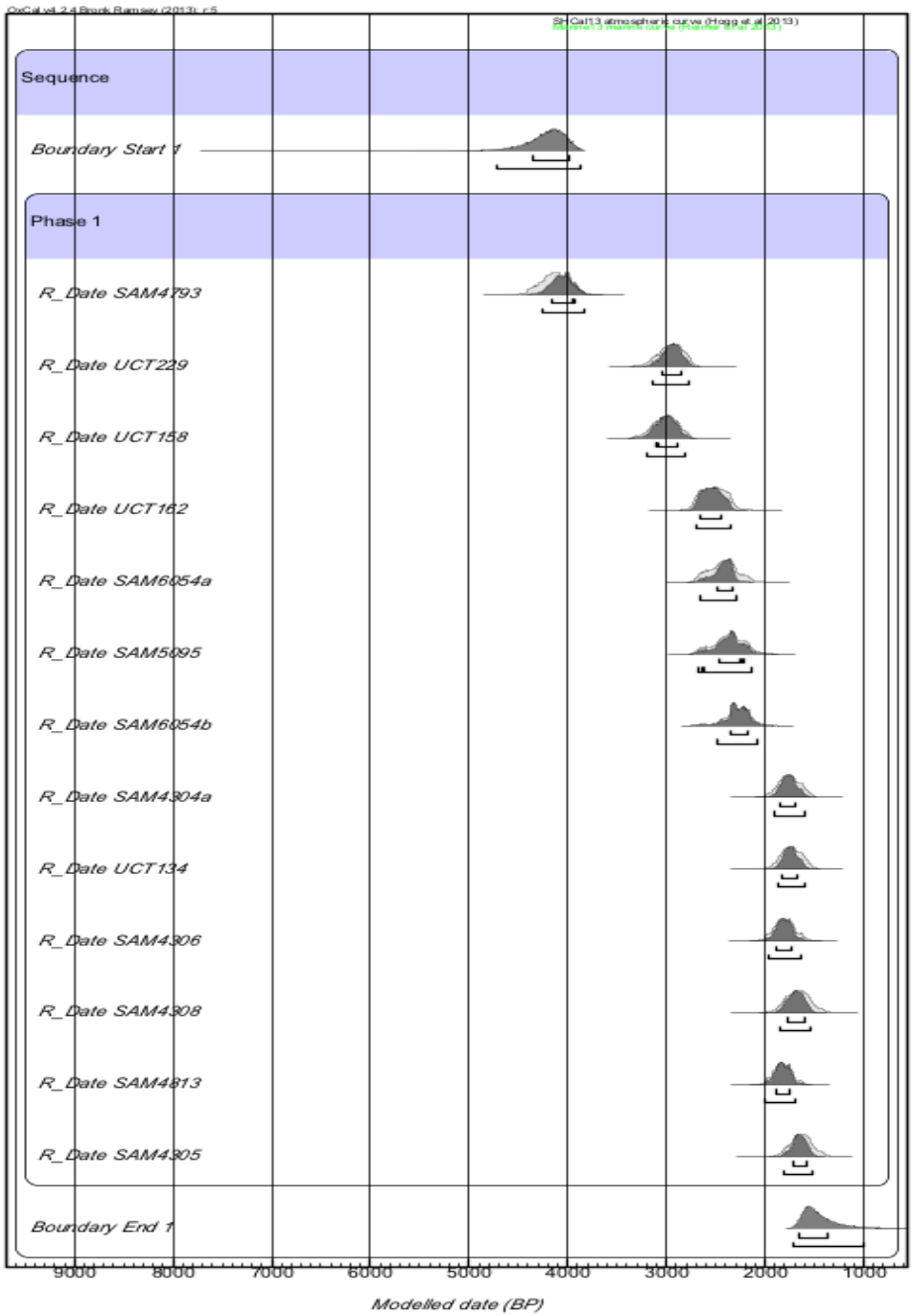


Figure 5.24: Modelled results for burials occurring in shell middens

Further models were set up to analyse other features of the burials. Models will now be presented for:

- Burials with and without grave goods
- Males, female and juvenile burials

5.13. Burials with and without grave goods

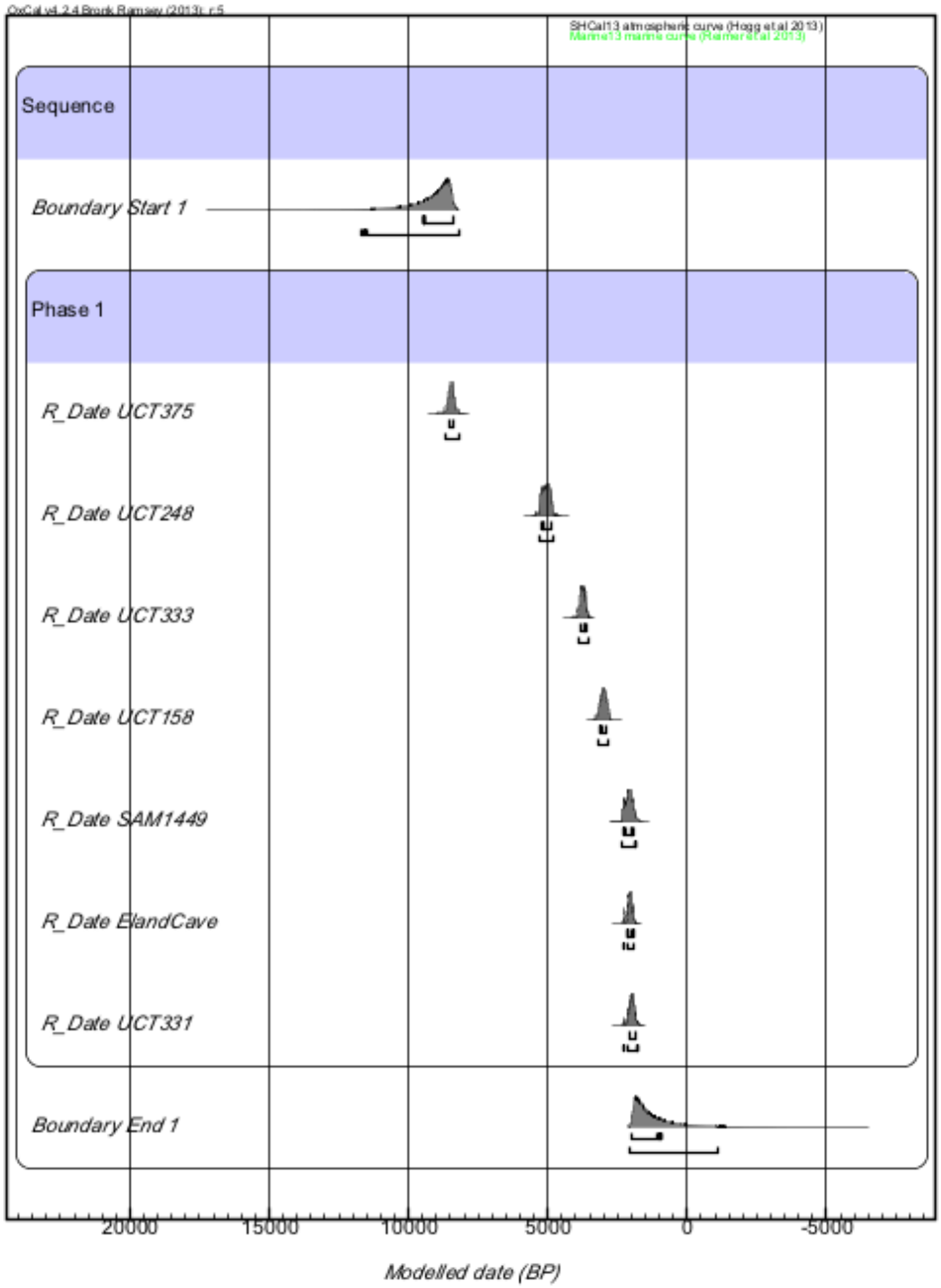


Figure 5.25: Single phase model results for burials with grave goods.

As there were only a limited amount of burials that had grave goods, the model for this produced a start and end at the 95% of 9481-8319 cal BP and 2010- 958 cal BP . This boundary (continuing on to 958 cal BP) is the result of having only a handful of dates and of having such a large gap between the oldest (UCT 375) and youngest burial (UCT 331).

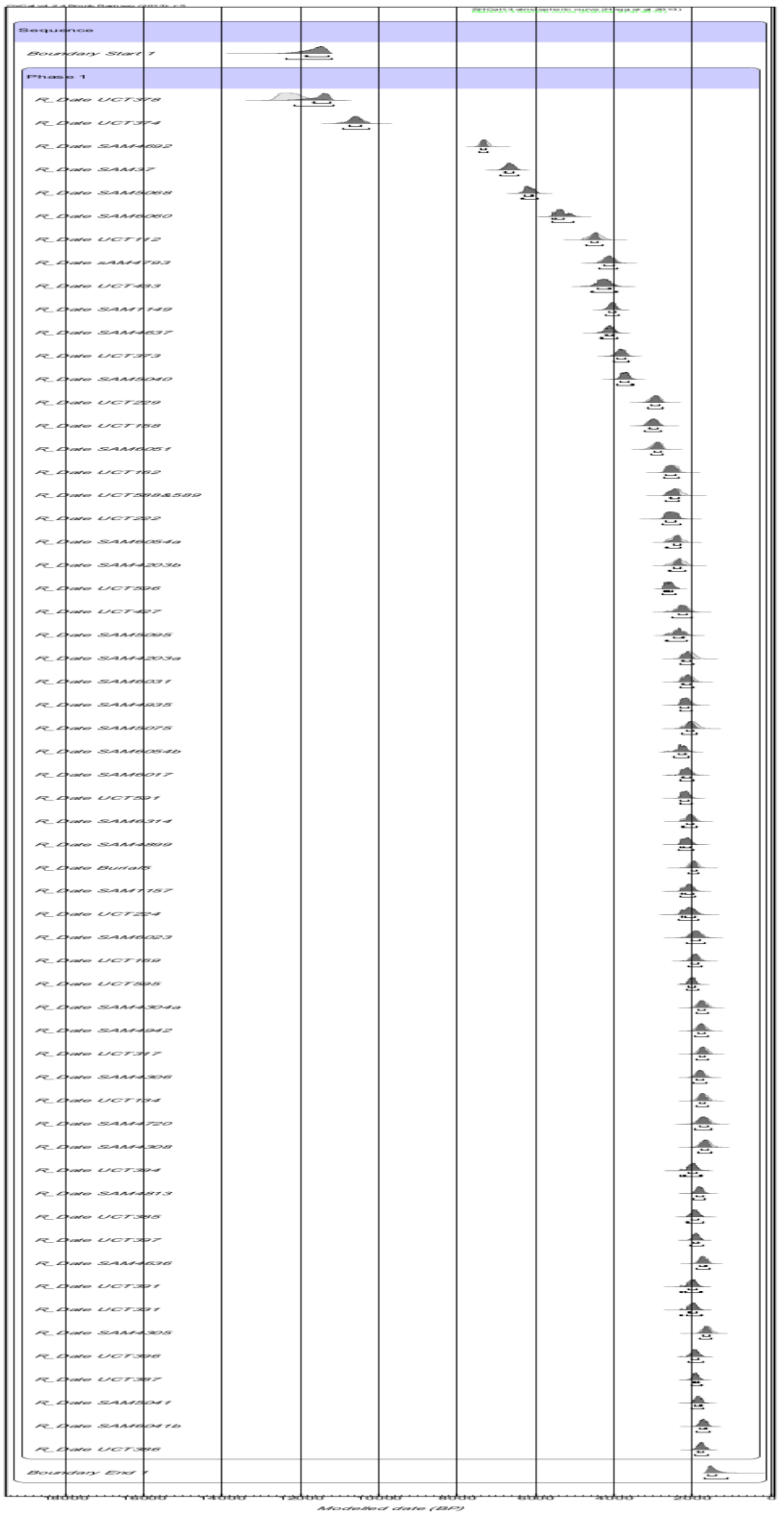


Figure 5.26: Single phase model results for burials without grave goods.

The start and end boundary for the burials without grave goods at the 95% range is 12 590- 11 2511 cal BP and 1665-985 cal BP.

Upon examination, the start and end boundaries for the burials that document cases of having grave goods and for the burials without grave goods, it seems that both these features within the burials run the entire time frame of the same burial practices, i.e. from about 10000 BP to 2000 BP (Table 5.10). What this seems to imply is that the inclusion or exclusion of grave goods was not a feature that came about during a specific time period but rather may actually relate to the individual within the burial. The decision to include grave goods seems to relate to a form of agency expressed for the individual who was buried. It should just be noted that the start boundary for burials without grave goods could be influenced negatively by UCT 378 which once again showed a poor agreement index in the results of the model. In some instance an outlier can be expected but if this radiocarbon determination is problematic the start boundary will then shift. However, even if the start boundary for burials without grave goods shifts it will not affect the probability that the inclusion of grave goods in this region seems to relate to the individual being buried. The last models to be looked at now will be to merely show a temporal boundary for males and females within the burials.

Table 5.10: Start and end boundaries for burials that have and do not have documented grave goods.

	68% Start boundary	**68% End boundary**	**95% Start boundary**	**95% End boundary**
Grave goods	8806-8379 cal BP	1761-1417 cal BP	9289-8215 cal BP	1820-898 cal BP
Without grave goods	12070-11340 cal BP	1615-1349 cal BP	12590-11251 cal BP	1665-985 cal BP

5.14. Males, female and juveniles within the burials

Figure 5.27 shows the results for the burials where the individuals were males. There is no significant time frame that emerges from this model.

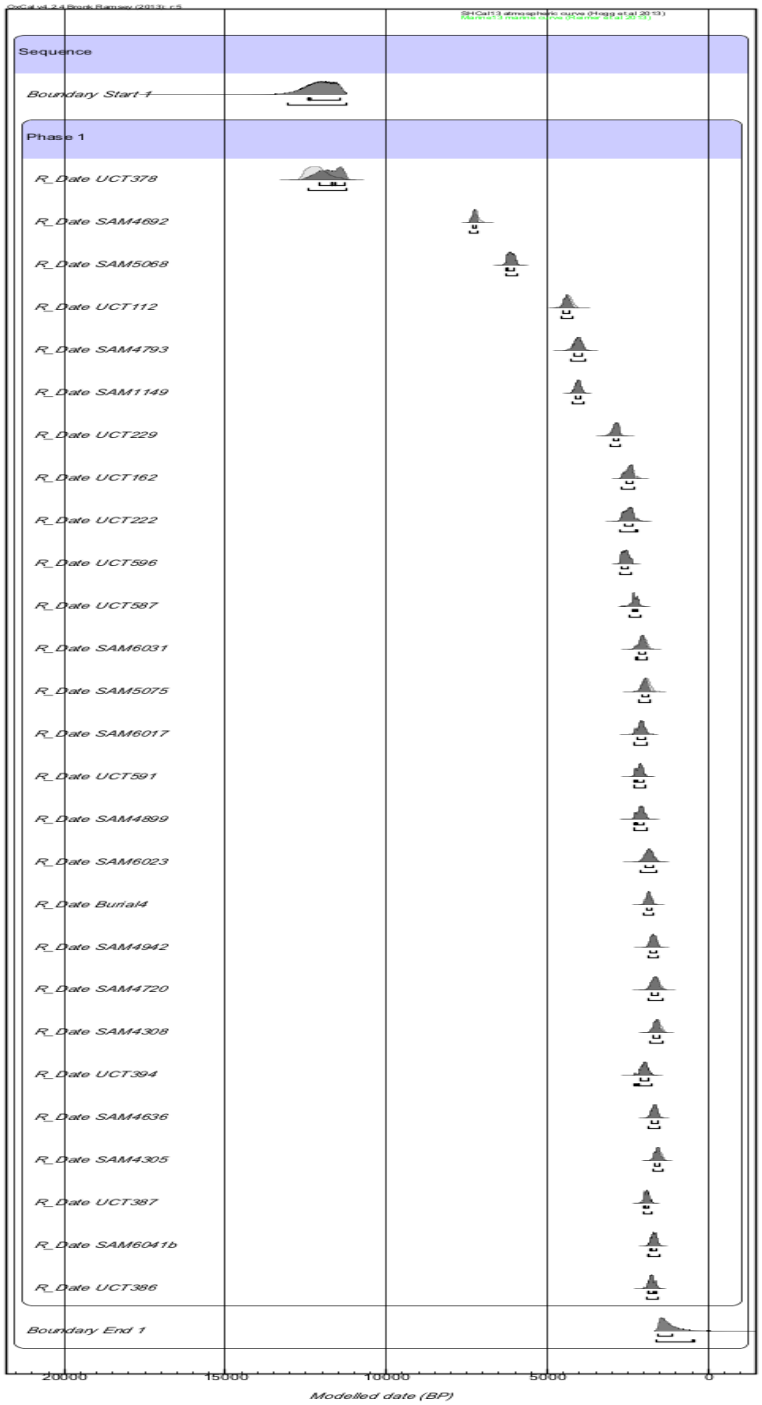


Figure 5.27: Single phase model documenting the results for male burials.

Figure 5.28 shows the results for the burials where the individuals were female. Once again no significant time frame emerges from this model, suggesting no preference in time when males were buried and females were not or vice versa. Table 5.11 gives the start and end boundaries for the male and female burials.

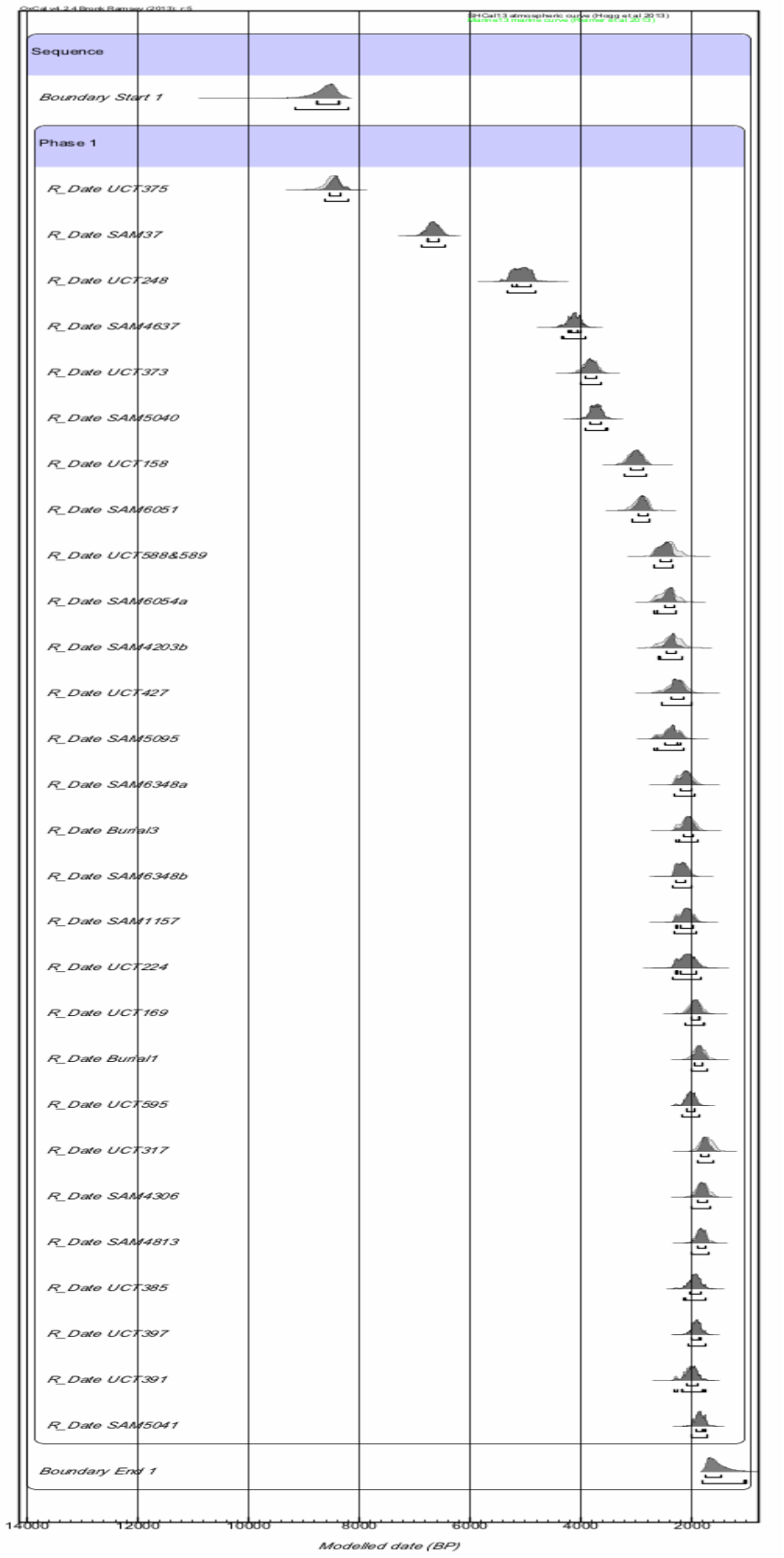


Figure 5.28: Single phase model documenting female burials

The juvenile burials had a documented start and end boundary at the 95% confidence level of 6312-4994 cal BP and 1875-812 cal BP respectively (Fig. 5.29, Table 5.11). There are substantially fewer juveniles recorded in this dataset as opposed to males and females. The inclusion of more juveniles to a Bayesian single phase model may refine the start and end boundaries. It should be noted that some of the burials included in this model, were multiple burials, and the date for the juvenile that was found in that burial was related to the radiocarbon date that had been run on the adults.

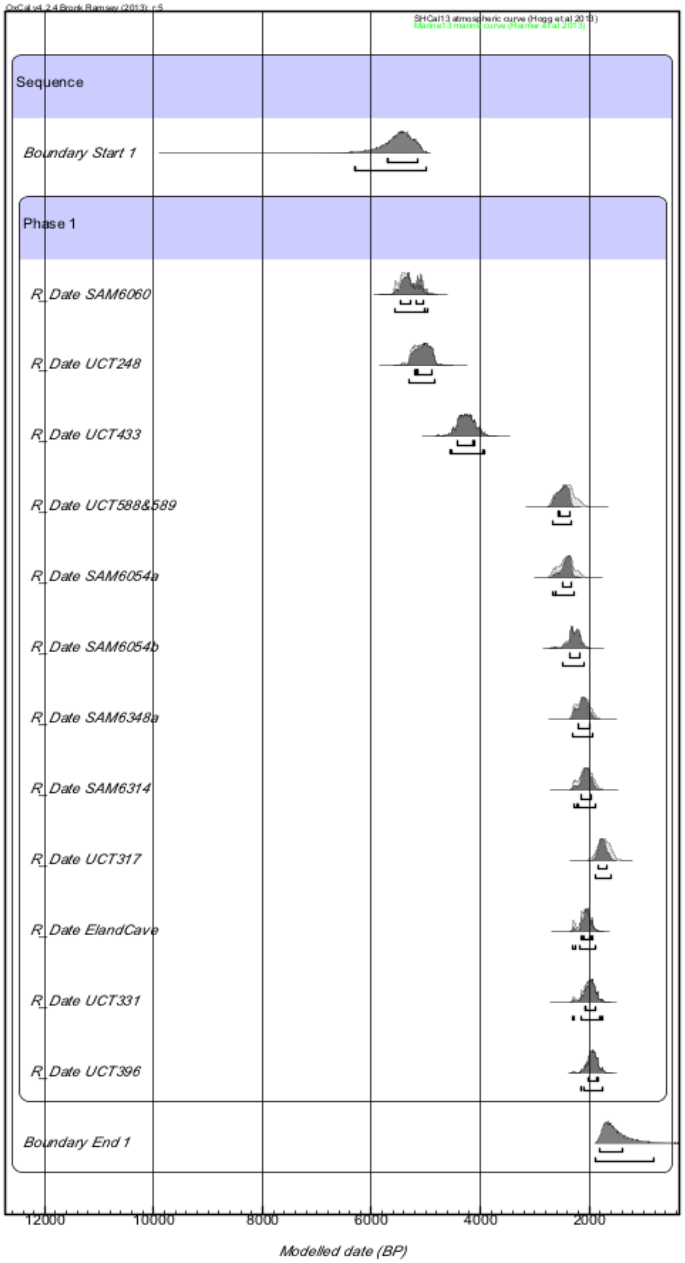


Figure 5.29: Single phase sequential model for the juvenile burials.

Table 5.11: Start and end boundaries for male and female burials.

	68% Start boundary	68% End boundary	95% Start	95% End boundary
Males	12564-11503 cal BP	1611-1196 cal BP	13146-11297 cal BP	1672-559 cal BP
Females	8734-8366 cal BP	1739-1458 cal BP	9090-8205 cal BP	1792-1070 cal BP
Juveniles	5698-5149 cal BP	1795-1396 cal BP	6312-4994 cal BP	1875-812 cal BP

5.15. The implications of these results

The most significant aspect of these results is that using calibrated dates and Bayesian models provides a way to identify start and end boundaries of events. Research can benefit from this as sites and regions can be better understood if the temporal framework within them can be phased into boundaries. It can also help to actually identify boundaries and movement of peoples as well as patterning. In terms of the Western Region LSA burials, conducting this temporal analysis has highlighted the time periods that need to be more broadly researched to see what factors, such as environmental, technological or social may be influencing how individuals are buried. This will be further discussed in Chapters 7 and 8. However, it is now necessary to analyse these burials through space. First, because the temporal data along with the spatial patterning can help refine the areas of interest, and second because the spatial patterning may in turn highlight how features need to be looked at and understood. The subsequent chapter is concerned with the spatial analysis of the Western Region LSA burials.

Chapter 6: Spatial Analysis

Geographical variations in material culture are often considered in archaeological analyses. Any such variations may, of course, occur at different scales and for a variety of reasons. Variations in a ritual practice such as human burial are likely indicative of social differences (Callmer 1991: 1-2). Spatial variations in how burials were constructed may, therefore, provide information on broader social processes. In many instances, studies have been conducted to identify boundaries and territories at the regional scale.

This chapter is concerned with the spatial analysis of burials within the Western Region. The intention is, just as the temporal study identified time periods and patterns that are worth further investigation, similar results could be yielded from a spatial study of the burials. However, the spatial analysis is limited in a way that the temporal data was not. The temporal data was abundant and could be aligned with specific features in the burials. The location of sites is not always clear and it is this lack of information that makes identifying spatial patterning difficult, as there is not always enough information to accurately map a site, region or pattern.

In order to conduct this analysis, the locations of burial sites were plotted using ArcMap ver. 10.2 software. Co-ordinates for as many burial sites as were available were collected. Wherever possible, co-ordinates were obtained from the relevant site reports. I converted co-ordinates published prior to 1999, and thus based on the Cape Datum, to the newer WGS1984 co-ordinate system.

Unfortunately, no specific co-ordinates were available for some sites. For these sites, approximate co-ordinates were interpolated from 1:50 000 map sheets and Google Earth. Published site descriptions as well as map sheet numbers given in Morris (1992) were used to guide this process. Whilst not ideal, at the scale the analysis was undertaken the approximated co-ordinates are sufficiently accurate. As in some cases sites contained more than one burial or in other cases were located very near to each other, some burials have the same approximated co-ordinates. The co-ordinates for the sites are given in Appendix E.

The patterns present in the burials have been mapped both across the region and spatially through time. The burials are plotted temporally in order to see if there are any

patterns that may appear across the region during specific time periods. The calibrated date ranges at the 95% confidence level (taken from Table 5.4) are used here for the temporal-spatial analysis.

The following features of the burials have been mapped spatially and temporally:

- The location of the burial sites
- Types of sites: rock shelters, middens and dunes
- Male, female and juvenile burials
- Body positioning within the burials
- Burials with and without grave goods
- Multiple burials
- Burials where individuals displayed a cause of death from violence or trauma.

6.1. Location of sites

When plotting the burial sites it is immediately apparent that most of the burials have been found along the coast. There are only a select few burials that occur inland (Fig. 6.1a, b). However, this may be due to the amount of archaeological research that has been conducted along the coast of the Western Cape and may not necessarily be a spatial feature of LSA Western Region burials.

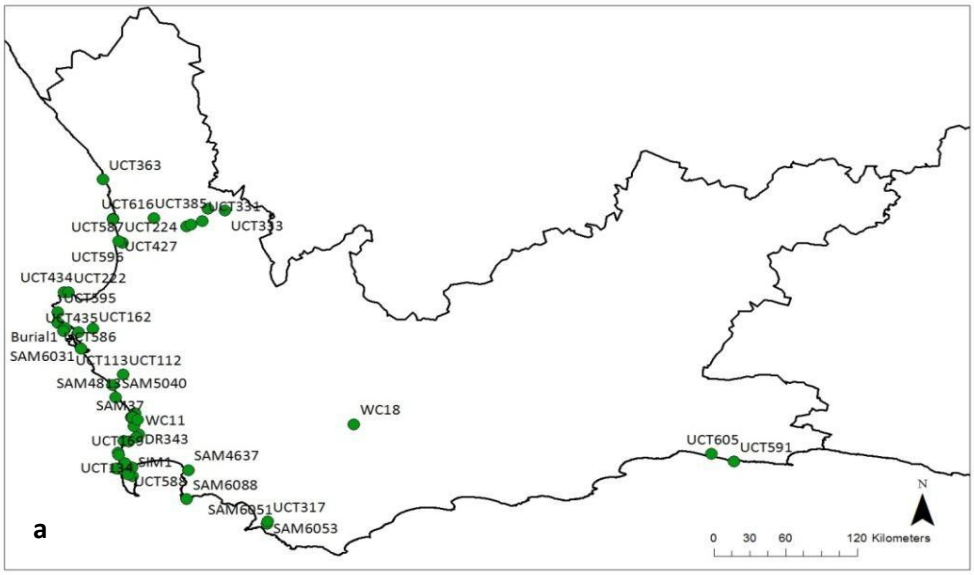
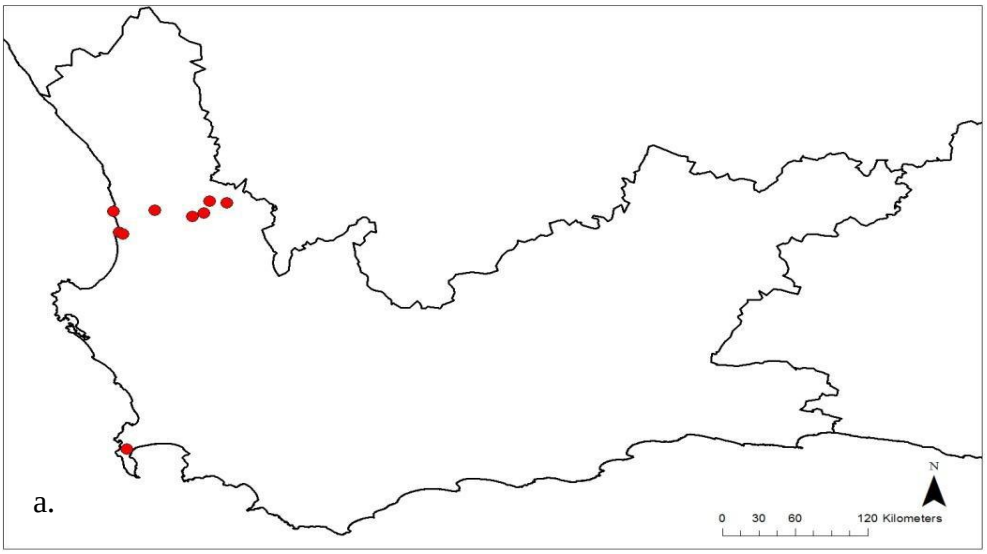




Figure 6.1 a, b: Reference point for the location of burials, mapped with the burial names: a. Spatially it is clear that the burials are found primarily along the coast: b.

6.1. Type of Sites

When mapping burials that have been found in shell middens, dunes, and rock shelters no specific spatial preferences are apparent. It is, however, clear that fewer burials occurred in rock shelters and that these rock shelters are found primarily higher up the west coast towards Clanwilliam with the majority inland. Dunes and shell middens are by their very nature primarily coastal features. (Figs 6.2a,b, 6.3a,b, 6.4a,b). Each of the type of sites was also mapped temporally. There seemed to be no obvious pattern that emerged for middens, dunes or rock shelters temporally.



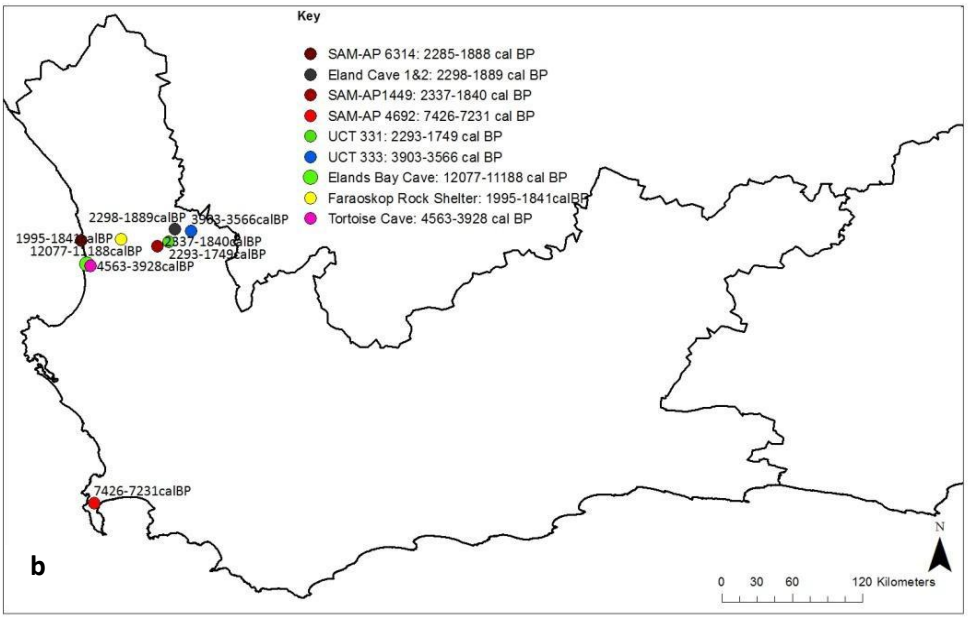
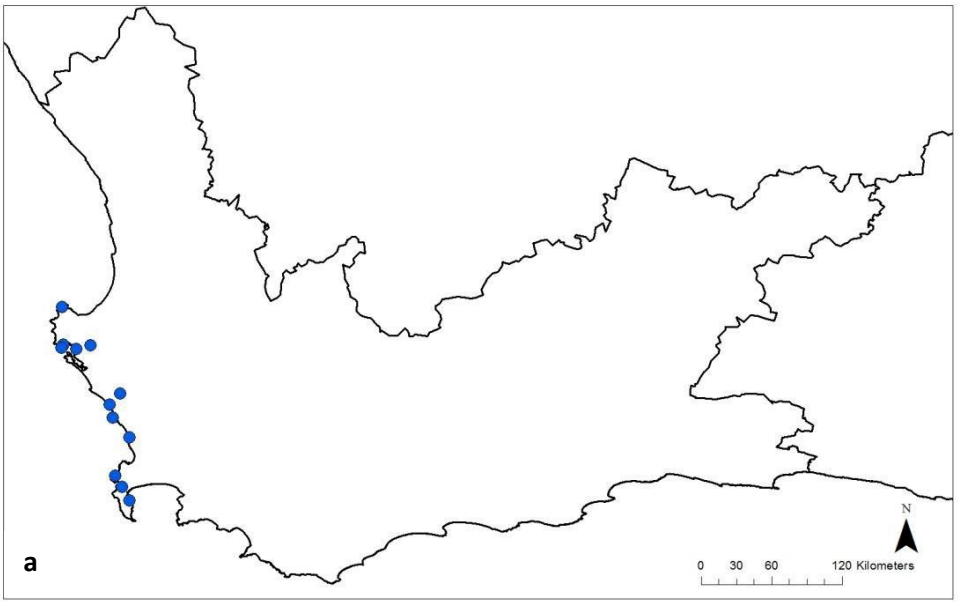


Figure 6.2 a,b: a depicts the spatial distribution of the rock shelters, showing that the majority of rock shelters are located inland. Temporally no significant pattern emerged from burials found in rock shelters: b.



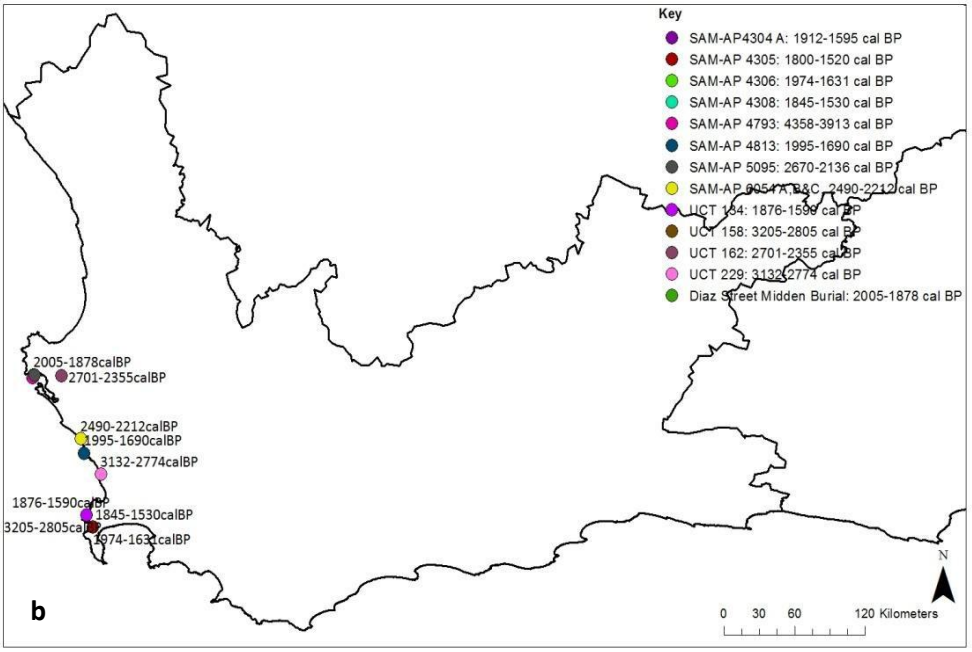
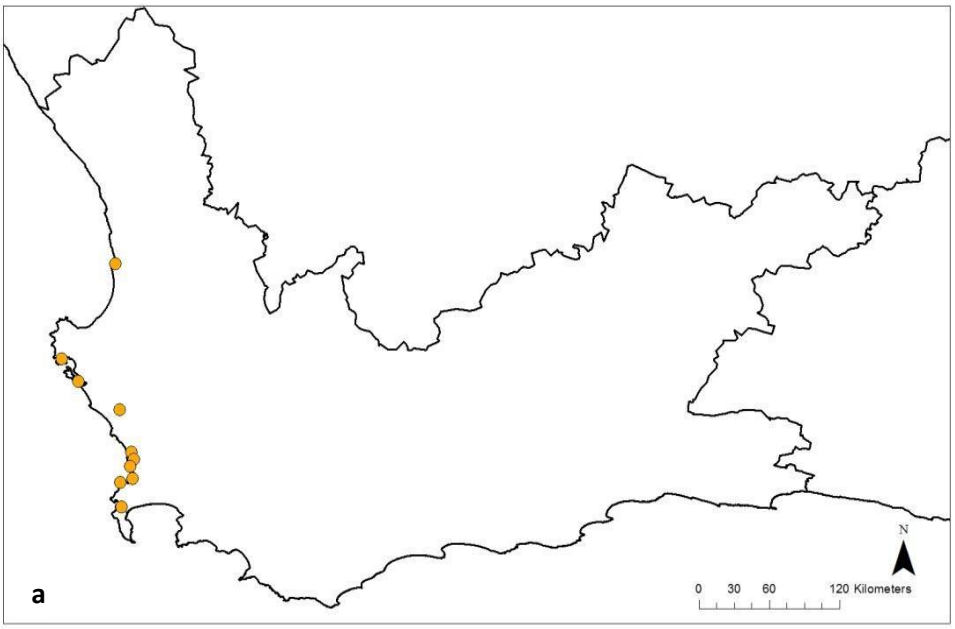


Figure 6.3 a,b: The spatial distribution of the middens seem to cluster in the middle of the coast line, other than that there seems to be no obvious spatial distribution: a. There seems to be no spatial pattern in regards to the temporal distribution of midden burials: b.



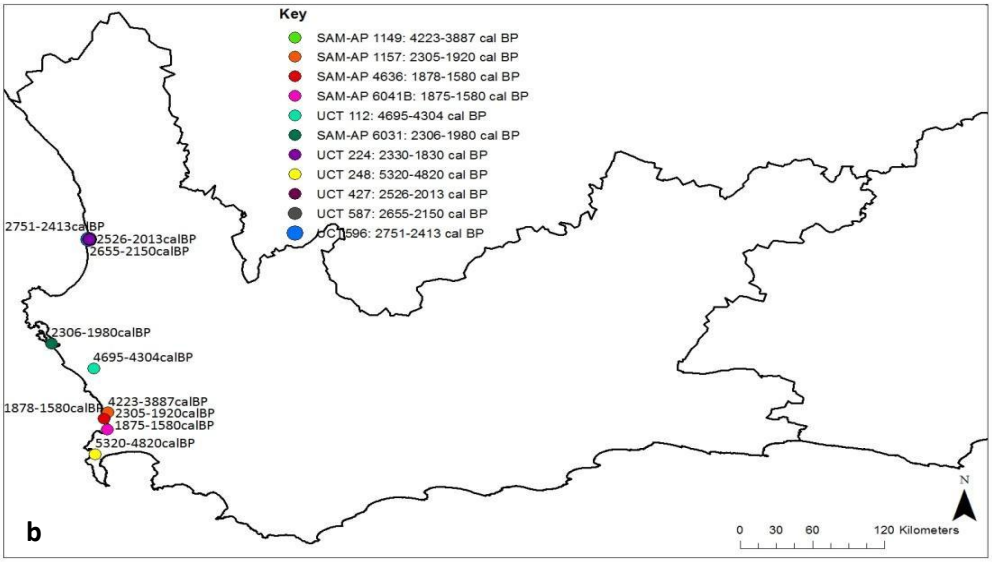


Figure 6.4 a,b: Burials that where uncovered in dunes cluster in the middle of the coast: a. Temporally mapped the burials do not seem to have any patterning: b.

There is a significant number of burials found in middens and dunes. Seeing as most of the burials have been uncovered along the coast it may not be unexpected to find burials in these contexts. Most of these burials, however, seem to cluster within the middle part of the west coast. This patterning may suggest that there was a preference for this area; again caution is expressed as this could be a product of archaeological work being favoured in this vicinity or merely the sample of burials used in this research.

6.2. Male, female and juvenile burials

When the burials are plotted according to gender no significant difference between males and females seems to emerge. The sites are varied and occur throughout the region. Additionally, there is no specific area where either the preference to bury just females or males is apparent (Figs. 6.5a,b and 6.6a,b). When the female and male burials are mapped temporally-spatially, the date ranges span the entire region, and no significant point of interest seems to be identifiable.



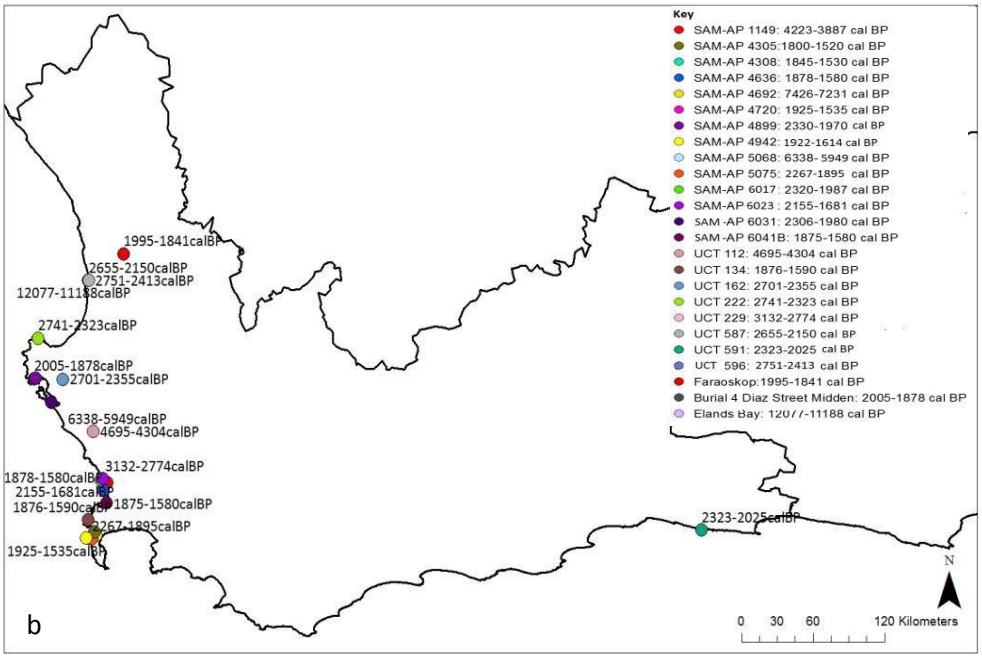


Figure 6.5 a,b: Distribution of male burials. With no apparent pattern emerging spatially or temporally: a,b.

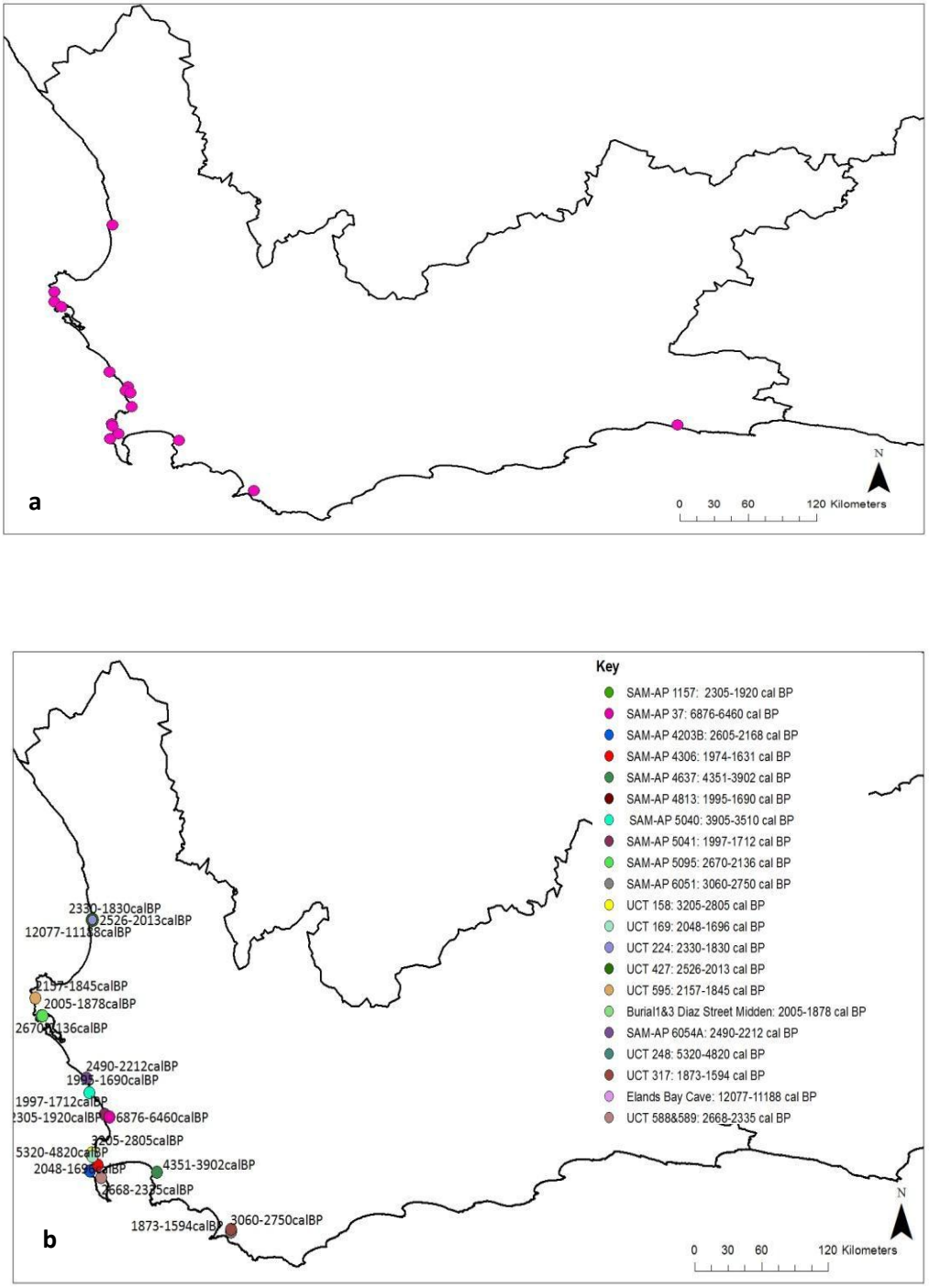
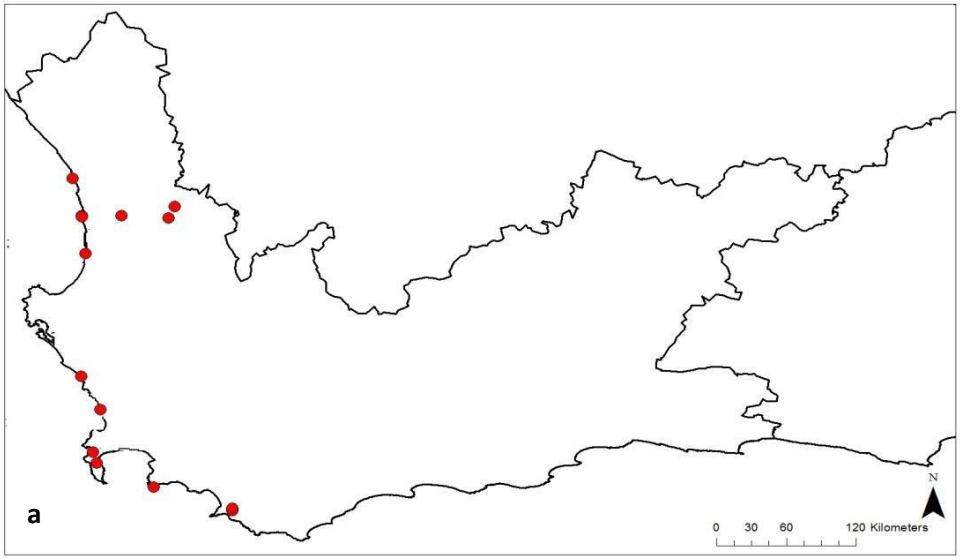


Figure 6.6 a,b: Distribution female burials, similar to the male burials there seems to be no significant spatial, or spatial-temporal distribution.

There are only a few juvenile burials, and when the sites are plotted on the map, they are scattered across the region (Fig. 6.7a,b). The lack of juvenile burials may in itself be something worth researching, but in terms of spatial patterning nothing significant emerges from the mapping of these burials.



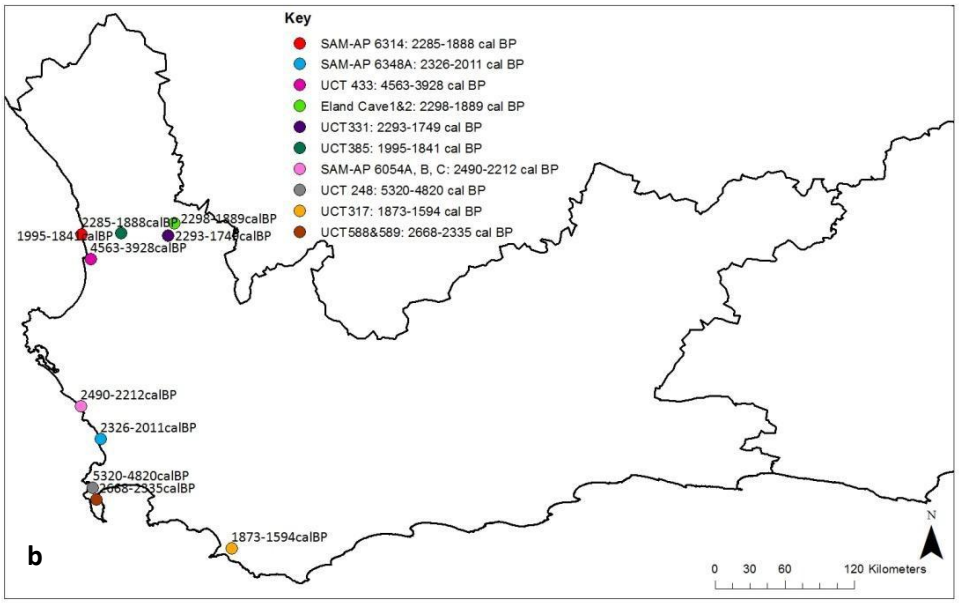


Figure 6.7 a,b: Distributions of juvenile burials. No distinct spatial pattern is apparent in relation to the juvenile burials: a. Temporally, the dates are scattered throughout region and do not seem to form a pattern: b.

6.3. Body placement

A significant feature of burials is how the body is positioned within the grave. For the burials that had this information available, the body was either placed in a flexed or seated position. Spatially no pattern emerged in terms of body positioning. There are only a few burials in each case (with the seated burials occurring even less than flexed)

and they are found across the region (Figs 6.8a,b and 6.9a,b). Additionally, temporally there seemed to be no significant pattern that emerged. In the flexed burials, the date ranges are scattered and are located throughout the region. However, it is interesting to note that the primary number of burials that are placed in the flexed position and are dated between 4000-3000 cal BP are found inland at the rock shelters (Fig 6.8b).

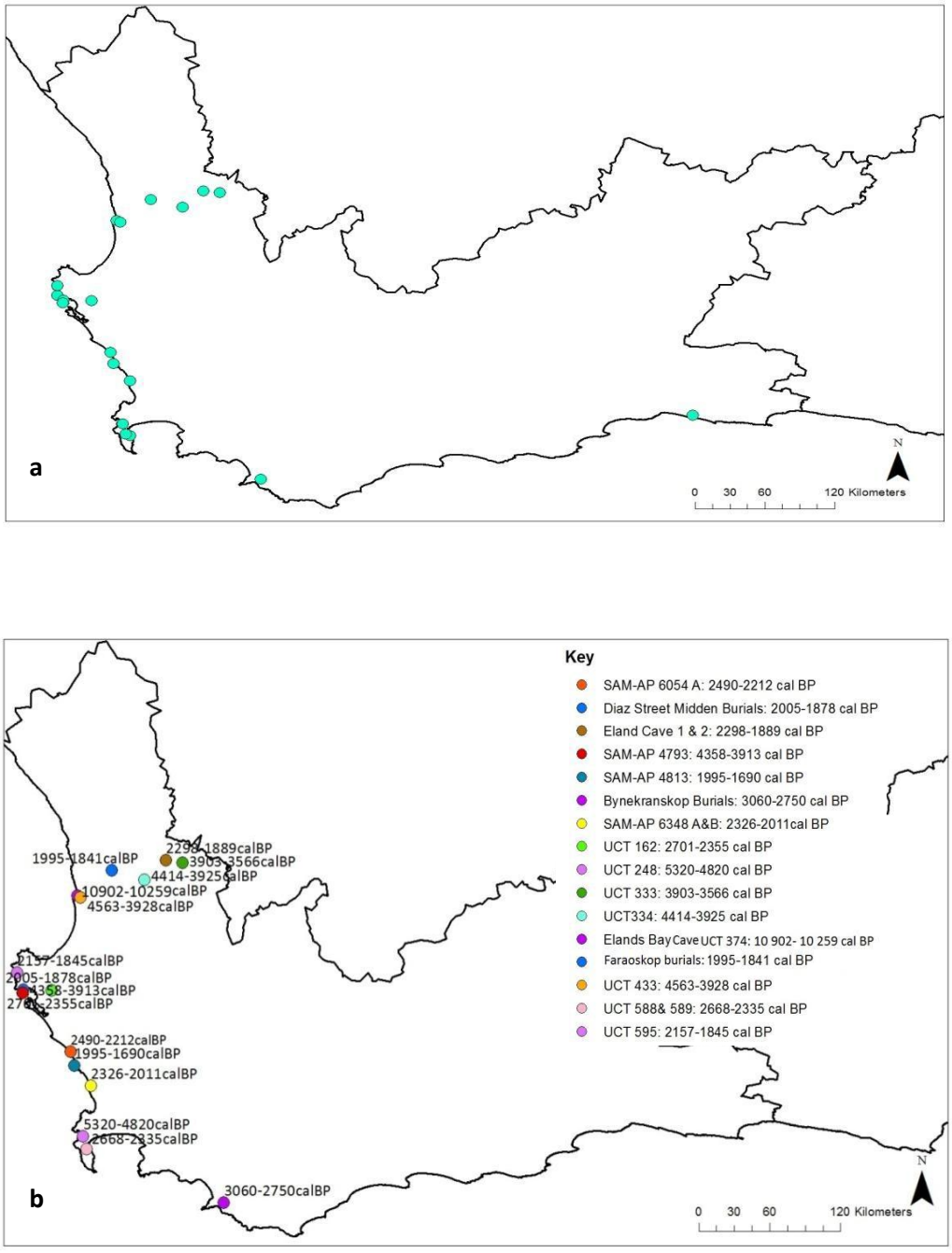


Figure 6.8 a,b: Burials where the individuals had been placed in a flexed position. No significant pattern emerged spatially or temporally: a,b. The Elands Bay Cave has two burials that were

placed in the flexed position and were dated as follows, UCT 374: 10 902- 10 295 cal BP and UCT 373: 3992-3625 cal BP. The Byneskranskop burials had an additional burial that was calibrated and flexed SAM-AP 6060: 5587-5050 cal BP. Unfortunately ArcMAP 10.2 only displays one date per site. Please note that the combined dates produced for the Faraoskop, Diaz Street Midden, SAM-AP 6054 A, B & C and SAM-AP 6348 A & B burials have been used here (as given in Chapter 5)

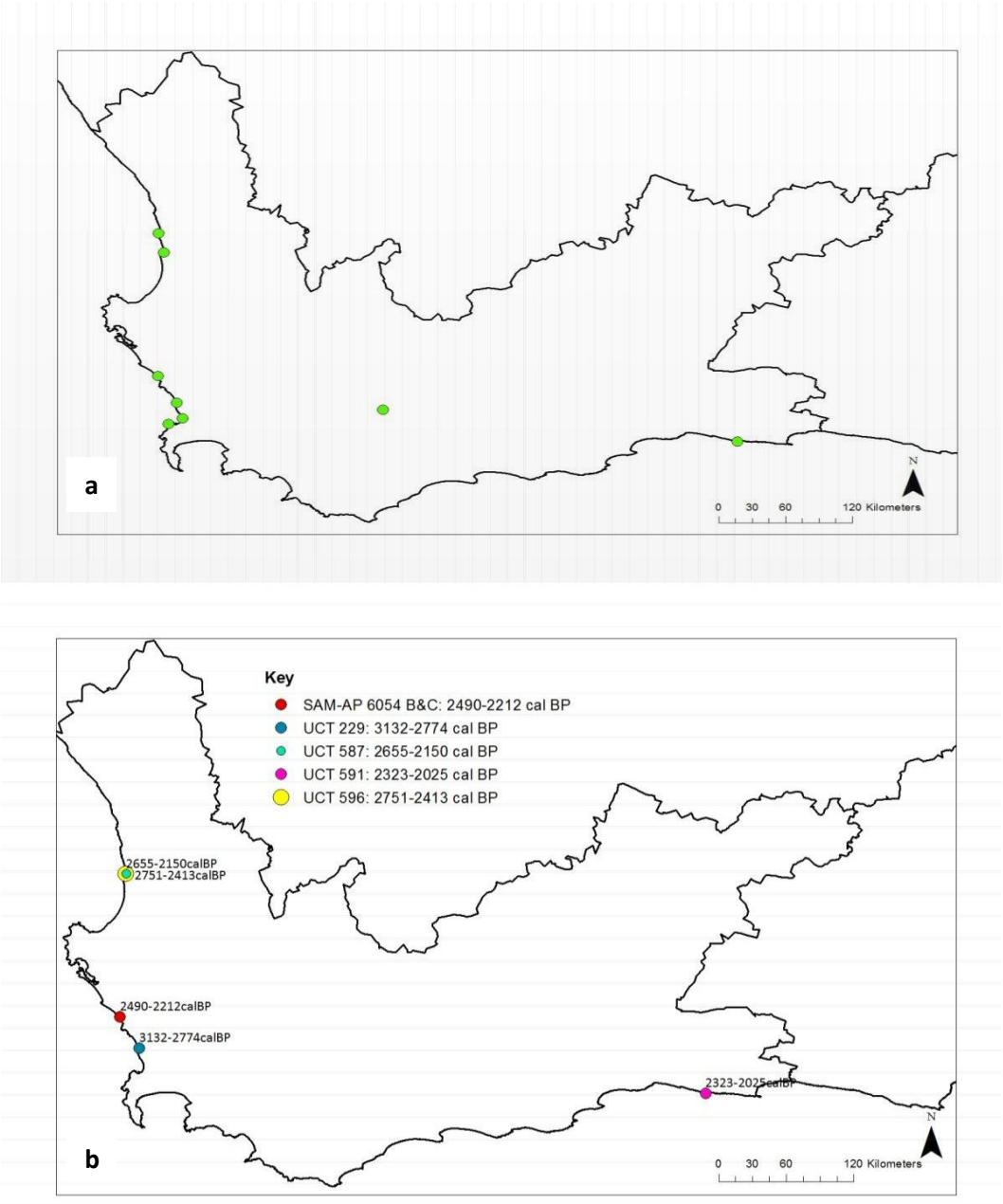


Figure 6.9 a,b: Burials where the individuals were placed in a seated position, due to the location of the sites no pattern emerged spatially or temporally. Please note the combined date (as found in Chapter 5) was used for the burial SAM-AP 6054 B, C.

6.6. Burials with and without grave goods

Grave goods are features that can highlight specific patterns and selections in burial practices. When the burials that have grave goods are plotted, they do not form any spatial or spatial-temporal patterning. As the majority of the burials did not have grave goods, it is also not surprising to note that no spatial patterning is evident. The sites without grave goods seem to span the entire region both spatially and temporally. Nothing noteworthy emerged for burials that did not have grave goods (Figs 6.10a,b 6.11a,b).

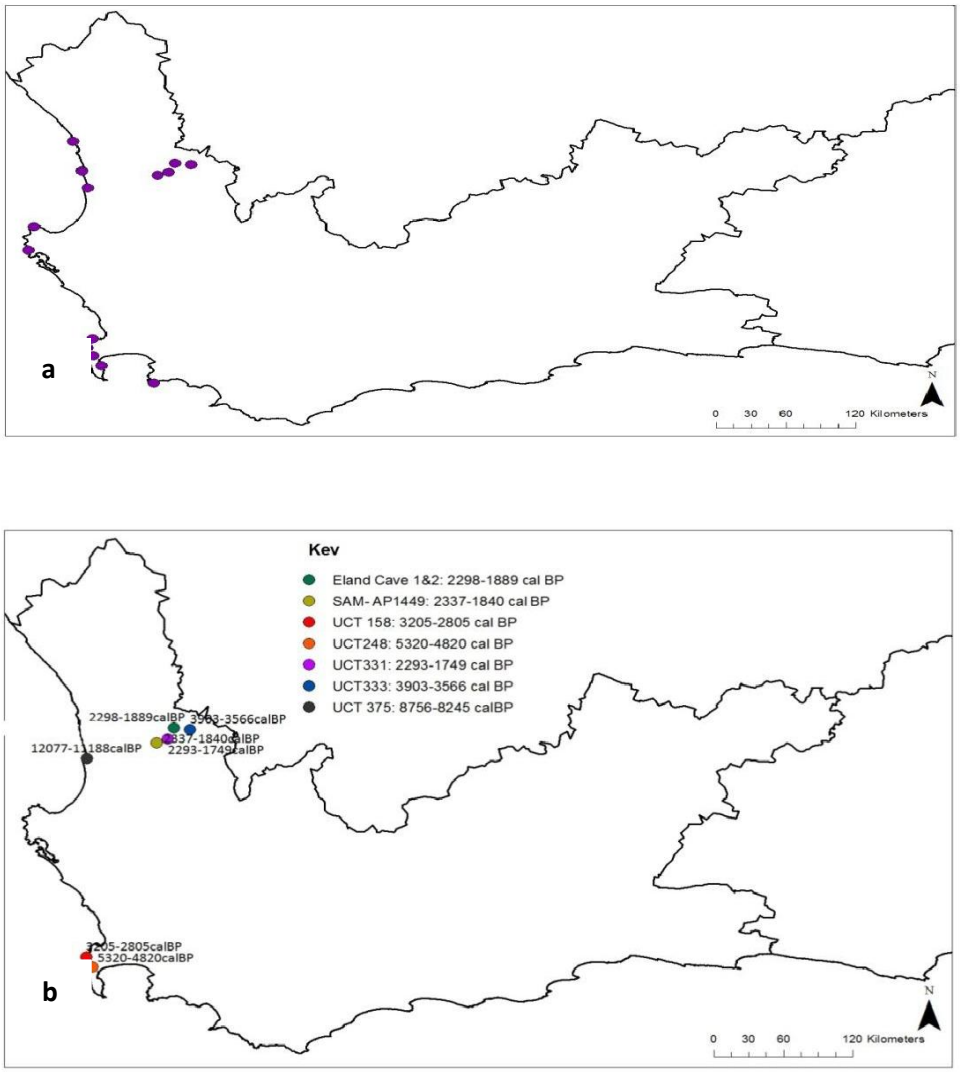
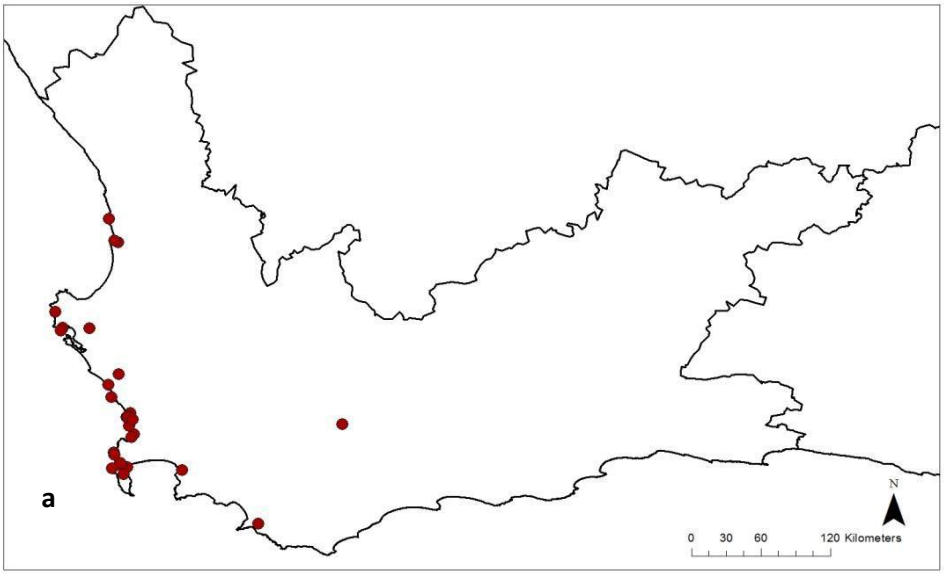


Figure 6.10 a,b: 6.10a: displays the spatial distribution of the burials with grave goods. b: depicts the temporal- spatial distribution.



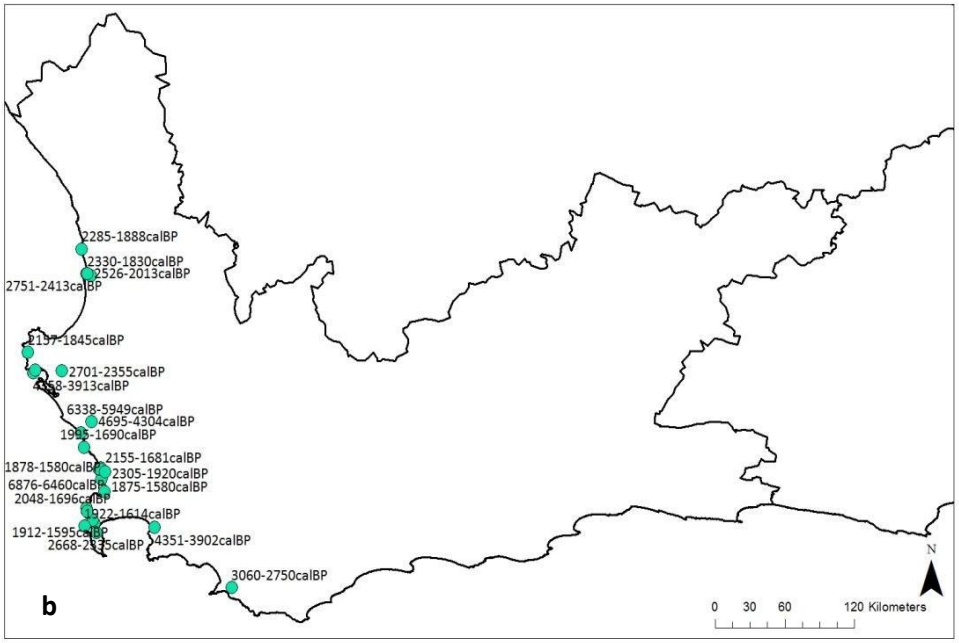
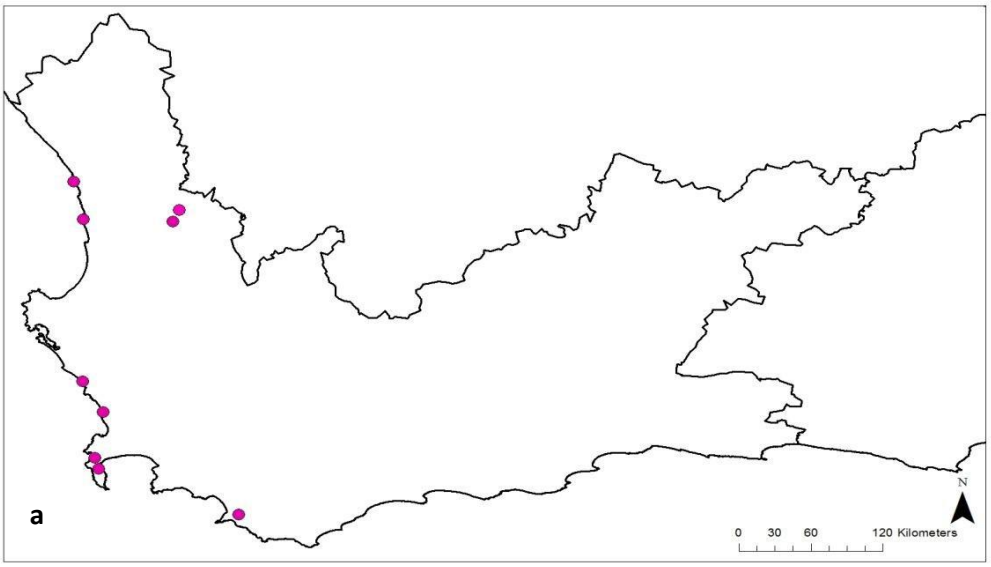


Figure 6.11 a,b: Burials that had no documented grave goods. The majority of the burials did not have grave goods, therefore it is not surprising to see that these sites occur throughout the region and that there is no spatial patterning: a,b. Please note a key was not made for Fig 6.11b as it continued passed the map due to how many burials do not have grave goods.

6.7. Multiple burials

The multiple burials are in themselves an important characteristic of the burials within the Western Region. Temporal analysis has shown that multiple burials occur within a specific time period: with a start date of 6616-4753 cal BP and an end date of 1878-291 cal BP. The nine multiple burials were mapped spatially. When analysed spatially, they occur primarily along the coast, but span almost the entire coast line. Seven of the multiple burials had calibrated date ranges and were also plotted. In terms of the temporal data no pattern seems to appear either. There are too few burials, in this instance, to make any meaningful connections. The graves span the entire coast line and the time ranges do not vary significantly from one another. There does not seem to be any specific area (through time as well) where these burials are likely to be found (Fig. 6.12a,b).



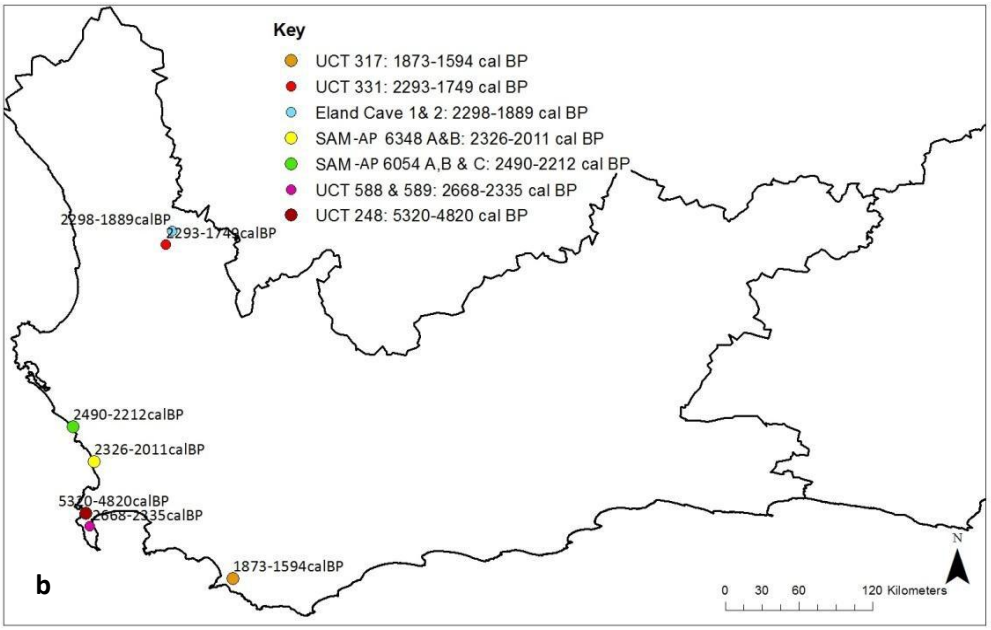
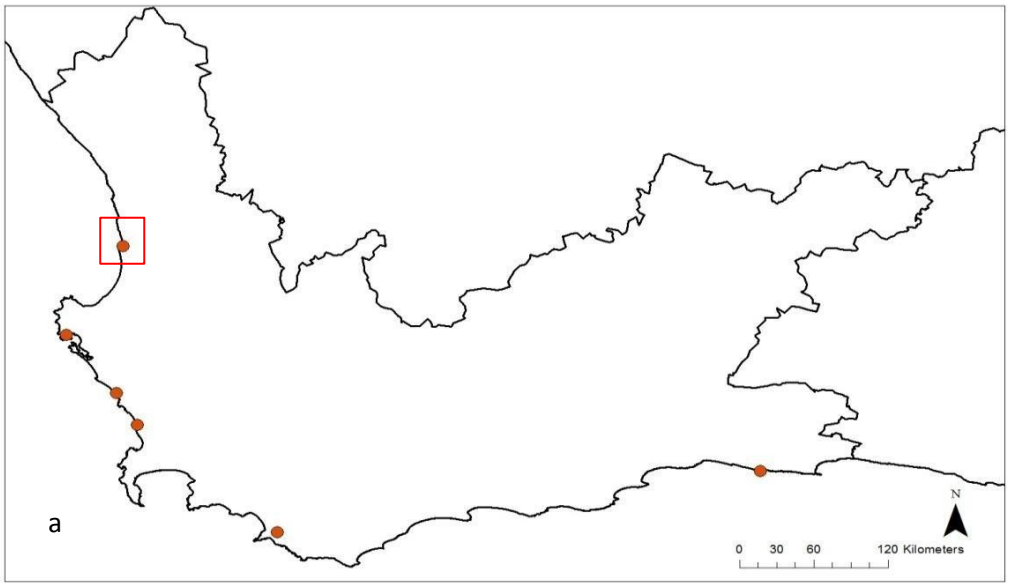


Figure 6.12 a,b: Sites where the multiple burials were found. Mapped both regionally and temporally: a,b. Please note UCT 363 and UCT 616 were not mapped temporally as they do not have associated dates.

6.8. Burials that had an indication of violence or trauma

As has been discussed in previous chapters, there are burials within this region where the individual(s) within a grave seem to have died from some form of violence or trauma. These burials seem to display no spatial patterning. They scatter across the entire region. Although I showed in Chapter 5 that they occur in a specific time frame, (the burials had a start boundary of 2668-2193 cal BP and an end boundary at 1862-1345 cal BP) they do not relate to only one specific locality (Fig. 6.13a,b). As was mentioned in Chapter 4, the results for this burial patterning would be processed both with UCT 587 and without, due to the fact that the traumatic context surrounding UCT 587 is unclear. In Figure 6.13a,b UCT 587 is outlined in red. From its position it has no impact spatially on the results.



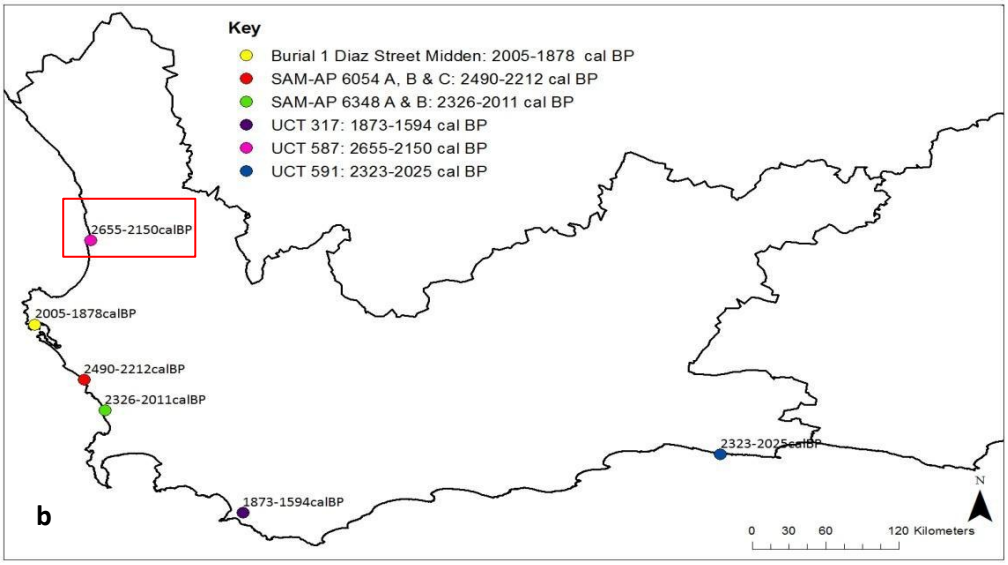


Figure 6.13 a, b: Burials that had an indication of violence or trauma are scattered throughout the region: a. Spatial-temporal analysis does not seem to indicate any patterning: b. UCT 587 is outlined in red in these images to see how the removal of this burial would affect the spatial distribution.

6.9. The implication of these results

Although no significant spatial patterning emerged, besides the primarily inland location of rock shelter burials and coastal location of dune and shell midden burials, either because there were too few sites or because the sites span the whole region, this does not negate the significance of the burials in relation to the landscape. The choice to bury an individual at a specific site is in itself a significant act. The act of burying an individual expresses agency and it is this that needs to be examined and not undermined. While the spatial results did not yield patterning as the temporal results did, it does provide evidence that the details of burying the dead occurred throughout the region. That changing burial practices occur throughout the region suggests that the locus of interaction between burial and landscape should be considered at a much smaller scale, probably that of individual sites or, indeed, burial positions within sites. The list of possible factors that could potentially influence the choice of a site or part of a site is long and varies from topographical to cosmological. Analysis at this scale is not attempted in this dissertation. The next chapter will consider the temporal and spatial results of the burials and will contrast these patterns to the broader LSA archaeology.

Chapter 7: Parallel Changes

In the preceding chapters the burials were both temporally and spatially situated. It is now necessary to compare the patterning present in the Western Region burials to the broader LSA archaeology. This will relate the burials to other temporal and spatial changes within the research area and illuminate the terms in which the burials should be interpreted under. The burials can be summarised as follows in accordance with LSA sequence presented by Lombard *et al.* (2012). It should however be noted that the division presented below are not to insinuate that all of the burials were found with those assemblages but rather is a means to correlate the burials with the lithic industries and their associated time spans. Please note all calibrated dates referred to in this chapter are taken from the 95% confidence interval (Table 5.4).

Oakhurst- Albany Complex (12000- 7000 BP)

- Few burials found in this time frame
- Hardly any grave goods
- Some of the oldest dates for the burials in this period are from rock shelters (Elands Bay Cave)
- Flexed position is documented

Wilton (8000-4000 BP)

- Minimal burials are recovered
- First instance of a double burial (UCT 248: 5312-4726 cal BP)
- Flexed position is still present
- Grave goods do not increase in number

Final Later Stone Age (4000- one hundred years ago BP)

- Please note only burials up till 2000 BP were included in this study
- From approximately 3000 BP onwards marked increase in burials
- Violent burials and multiple burials are dated to this period
- Multiple individual interments at single sites

- Seated burials are dated to this time period
- Ochre usage was found on more burials in this period than any other
- Grave goods have not increased
- Burials occur primarily in open sites and middens
- Burials in rock-shelters dating to this period seem to be located primarily inland and higher up the Western Region.
- This burial tradition most likely extends past the 2000 BP limit which was set up for this research

Now that the burial patterns have been sub-divided in accordance with the LSA lithic sequence it is worth pointing out any continuities and changes which are present between the LSA industries. Although information about the lithic industries was presented in Chapter 2, it will be summarised and restated here for the purpose of comparing the burials to the broader archaeology.

7.1. Environmental and Subsistence changes

In many instances differences within the Stone Age have been linked to changes in environmental conditions. This section will briefly review how the climate is changing within the Holocene and how the subsistence strategies have changed during the LSA. This is done in order to ascertain whether any possible disparities may align with the burial patterns of the Western Region.

The Albany is generally characterised by an onset of warmer conditions as opposed to the Robberg period. The Wilton and Final Later Stone Age saw relatively stable climatic conditions, with a hotter and drier climate with seasonal rainfall. (Deacon & Lancaster 1988; Talma & Vogel 1992; Mitchell 2002; Stynder 2006). From 7000-5000 BP (approximately) regions became wetter and subsequently from 5000 BP rainfall seemed to occur throughout the year as opposed to simply seasonally (Deacon & Lancaster 1988; Talma & Vogel 1992; Mitchell 2002; Stynder 2006).

Subsistence patterns suggest that during the Holocene there was a shift to hunting smaller game, an increase in the consumption of plant foods and around 3000 BP a wider exploitation of marine resources (Mitchell 2002; Stynder 2006). This changing

subsistence pattern is supported by the isotopic work done on the skeletons within the Western Region. Reconstructions of mean body sizes and the identification of the human bone isotopes all show dietary variations during the Holocene (Sealy & Pfeiffer 2000; Sealy 2006; Pfeiffer & Sealy 2006; Pfeiffer & Harrington 2011).

It seems unlikely that burial practices are related to environmental and subsistence patterns. Due to the fact that both the climatic conditions and subsistence strategies seem to have a general consistent pattern for the Holocene and do not seem to markedly change, it is not viable to really identify any changes between the burials that are environmentally determined. Such an example of this is noted between the Albany and Wilton industry or between the Wilton and Final Later Stone Age.) Correspondingly, the burials within the Albany and Wilton are quite standardised and the slight climatic variations (such as the onset of wetter conditions) do not seem to affect this burial tradition.

An exception to this may be the fact that individuals are buried in shell middens during the megamidden period which occurs at the same time as a preference for settlement at open sites is established (Parkington *et al*. 1987). This is the one subsistence and environmental change that also seems to extend to the burials practices. However, to suggest that this burial practice is directly due to the intensification of the exploitation of marine resources, is in itself quite redundant and begs the question of causality (Johnson 1999: 72-73). The reason being, that while the change in environment and subsistence may align with the change in burial practices, how or why this shift may occur is still the question. It is not enough to merely rest on the assumption that because one change happened in the environment, the other change is the direct result of that. There is the possibility that alternating, interconnecting factors are at play and that the relationship with the burials and the environment is not so one-dimensional. Suggesting, that the advent of burials in shell middens cannot only be understood in terms of a shift in food exploitation and settlement patterns. In this instance the decision to bury the dead in these shell middens still needs to be socially understood. This is particularly the case as up until that point, environmental and subsistence strategies did not seem to affect how individuals were buried. It would be odd for the sudden dietary change to be the only driving decisions behind the interment

of individuals in these shell middens. Ultimately the burials and the relationship of these societies with the landscape should be discussed in social terms. The subsequent section will now analyse the lithic sequences and determine if changes in the burial practices could possibly be associated with the advent of new stone tool industries, as stone tool assemblages mark changes and transformations of people during the Holocene.

7.2. Lithic sequences

The Albany industry is characterised by a marked increase in stone tool size, it is a flake based industry and both scrapers and adzes are present within this technological complex (J.Deacon 1984; Lombard *et al*. 2012). There are hardly any bladelets or backed tools found in Albany stone tool assemblages (Deacon & Deacon 1999). The Wilton industry in contrast is a microlithic tradition and commonly sees the production of backed tools, convex scrapers and segments (Wadley 2001: 347).

The burials that are placed within the Albany and Wilton industries are almost non-distinguishable and arguably should not be separated out. The division of the graves is purely based on their calibrated date ranges. Their contextual backgrounds are strikingly similar (i.e. the burials are not buried with grave goods and are found in tightly flexed positions). This implies that the burials did not adjust in relation to the changes between industries. It seems that there was an ostensibly conscious choice to continue the same burial style. At this stage in time, the LSA people within the Western Region were not making burial related decisions based on developing lithic assemblages and there may be other influencing factors.

It is interesting to note that within the Albany and Wilton time frame, Elands Bay Cave contained some of the oldest documented burials (UCT 375: 8756-8245 cal BP, UCT 374: 10902-10259 cal BP and UCT 378: 12077-11149). Nevertheless, at around 7900 BP the cave was abandoned and only subsequently resettled around 4300 BP (Parkington *et al.* 1987; Mitchell 2002: 179). A later burial in the Elands Bay Cave is dated to the Final Later Stone Age (UCT 373: 3992-3635 cal BP). During this time period, there were technological shifts from the Albany to the Wilton and then to the Final Later Stone Age. There are documented burials at Elands Bay Cave (and the surrounding area) in all three of these industries. It seems that the choice to bury individuals and how to bury them

did not change in step with the evolution and transformation of lithic industries. The absence of burials during the period of abandonment is of course significant, yet not unexpected. The desertion of Elands Bay Cave (and Tortoise cave) seems to be a localised occurrence. As previously mentioned in Chapter 2, other surrounding rock shelters such as the Steenbokfontein cave were not abandoned during this period (Mitchell 2002) . It seems here that the choices of the LSA people are not directly linked to the introduction of new lithic industries. Changes and continuities within the burials did not occur directly in step with the development of the new industries. Rather differences and similarities are found sequentially throughout the lithic industries.

The Final Later Stone age is marked by many different variations of stone tool assemblages. Lombard *et al*. (2002: 131) notes how the lithic industries within this period can be similar to either the Wilton or Smithfield as described by Sampson (1974). It is during the Final Later Stone Age, specifically from about 3000 BP, that there is an increase in burials and the emergence of the multiple, mass, seated and violent burials. Barring the one double burial present in the middle of the Wilton period (UCT 248: 5312-4726 cal BP) all of the others calibrated between 3000 and 2000 BP. The Faraoskop and Diaz Street Midden burials produced a combined date of 1985-1841 cal BP and 1984-1878 cal BP respectively. The burials that displayed evidence for violence and trauma had a start and end boundary of 2766-2295 cal BP and 1899-1396 cal BP.
The seated burials had a start and end boundary of 3562-2752 cal BP and 2271-1449 cal BP. These burial patterns are firmly situated in the Final Later Stone Age, yet they do not seem to directly occur from the approximate start of the industry. Burials between 4000 to 3000 BP are still not as frequent and are similar to the overall pattern of flexed burials with no grave goods.

While some aspects of the burials do seem to change with the advent of the Final Later Stone Age it still seems once again unlikely that these changes are related to the change in lithic industry. Additionally, these changes occurred during the Final Later Stone Age and not seemingly from the start of it. This is significant as it suggests that there may have been alternating reasons for the choices behind the burials that are not technologically based. It is noted that the Western Region has a fairly standardised burial sequence up until about 3000 BP, which then marks the introduction of midden

burials, multiple burials both in single burials and at single sites, seated and violent burials seems to become paramount. There do not seem to be any major disjunctures in the burial practices up until the onset of the Final Later Stone Age. Questionably if the evolution of industrial complexes marked changes in people and their habits but not in the burial practices, then another aspect needs to be considered.

It seems that both environmental and technological explanations do not satisfactorily explain the changes in the burial practices (Fig. 7.1). While the significant patterning of the Western Region burials from about 3000 BP do to a degree seem to align with the changes in the food exploitation and with the advent of the Final Later Stone Age industrial complex, the relationship is not strong enough to suggest a direct link of causational change between the two. It seems plausible to rather suggest that the Western Region burials and the broader archaeology of the period should rather be understood in social terms. The next section will provide a framework of the social factors occurring during the Final Later Stone Age.

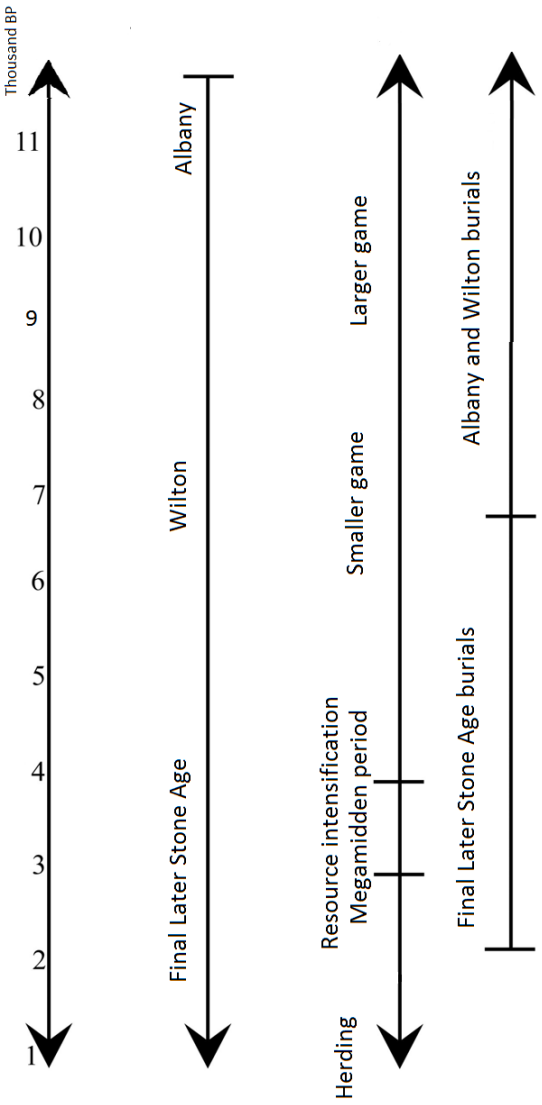


Figure 7.1: After Pearce (2008: 290) depicting the parallel changes through the LSA.

7.3. Social factors and their relevance to the burial practices

From the start of the Wilton, behaviour that is more socially complex is apparent through the broader archaeology. Not only is there a substantial increase in artefacts (such as; OES beads, worked bone and the use of ochre) there are existing lines of arguments that propose that during this period regionalisation was happening. Moreover, it is during the Wilton and Final Later Stone Age that there seems to be an increase in population size and intensification of resources. The following arguments have been put forward to substantiate the idea that groups of people were marking

boundaries and expressing regionally specific behaviour during the Wilton and Final Later Stone Age.

These arguments relate to both stone tool production and the burials of individuals in rock shelters in the Eastern Region. Specific stone tool variants within the Eastern Region arguably mark boundaries, such as the Kasouga flakes and the bifacially retouched points -specific to Nelson Bay Cave (Leslie 1989; Inskeep 1987; Hall 2000). Hall (1990, 2000) argued that burials found within rock shelters in the Eastern Region marked a change in the relationship with how the dead were viewed by society, and that burials were used as a means for a group to socially lay claims to specific areas. (The particulars of these arguments will not be elaborated, as the information has been previously presented in Chapter 2). The argument for marking boundaries, in the Western Region, has been extended by Dewar (2010). Dewar (2010) proposed that societies in this region were laying claim to particular areas by the mass burials of individuals at sites such as the Diaz Street Midden and Faraoksop. Dewar (2010) further argued that the isotopes support this reasoning, as the individuals in the burials at Faraoskop had markedly different isotopic signatures from those at the Diaz Street Midden.

Further, Deano Stynder *et al.* (2007 a,b) have shown how populations within the Western Region, through the analysis of cranial and dental morphology, are homogenous and seem to have maintained interactions. Yet there is evidence of regionalisation and specific social behaviours within the Western region in spite of this seemingly homogeneity that is evident through the choices the populations were making and specifically through the burials (Dewar 2010; Pfeiffer 2013). It seems that in light of the population increase during the Wilton and Final Later Stone Age, with the intensification of resources, the prime explanation for variations in practices between societies is actually understood in social terms. It appears that peoples' choices were not merely being driven by environmental or technological factors.

What is more likely is that the changing social atmosphere and interactions between groups are expressed through the material culture as opposed to the material culture or environment influencing the changes in burials patterns. It seems that something was

happening socially to the people present in the Western Region and that these groups were navigating the atmosphere of the time. In light of the above the burials within the Western Region should be looked at in social terms. Burials should not only be seen as markers of boundaries or past people but may themselves be reminiscent of past social and cultural rituals that express certain experiences. This idea is further examined in the subsequent Chapter 8, where the perceptions towards the dead through the ethnography is established, followed by a discussion on how and why the burials may have been materialised in certain ways.

Chapter 8: The Social Context

The central theme covered by this thesis has been interpolating temporal patterning, spatial patterning and, identifying the possible impact this may have on burial research relating to LSA people within the Western Region. This chapter aims to bring together the content presented in the previous chapters whilst discussing the notion of change and continuity, as well as the conceptualisation of the burials. The driving decisions behind the past social and cultural processes will be examined and deconstructed. To begin this discussion, I will present an analysis on the ethnographic data available for San burial practices. Followed by a theoretical discussion incorporating materiality where questions relating to how burials may and may not have been conceptualised (*and why*) will be wrestled with.

8.1. Ethnographic accounts

Ethnographic research provides insight into the past directly through people. Such records can be highly valuable as they afford a means to study cultural aspects that may not be discernible just through the archaeological evidence. At the same time, caution is warranted when relying on such accounts as they can perpetuate stereotypes that are not the norm for an entire society (Mitchell 2005). Furthermore, ethnographic accounts may not be pertinent to use as it is arguable that the time gap between the subjects being studied and the informants is too substantial to provide insight that can be applied to past societies (Lewis- Williams 1991). The crux of this argument relates to whether one believes if the passage of time necessitates change, or if merely the advent of time does not equal to change but rather that there has to be an event which will act as a catalyst for change. Ethnographic research in relation to San burial practices have been previously undertaken (see Inskeep 1987; Wadley 1996).

The details of each study varies, the most comprehensive and recent analysis was conducted by Pearce (2008) as a means to provide an analogical comparison for the burials within the Eastern Region. It is thus worth noting that these accounts aid in an understanding of the Western Region as was done for the Eastern Region. In this thesis, the ethnographic accounts are given in the hope that the attitudes and perceptions of burials can be identified through such an analysis. Consequently, by providing such an

understanding in conjunction with the material conceptualisation of the burials a better framework for understanding past cultural constructs can be achieved. Under each sub-heading that follows, a brief description of the burial practices and (if possible) how the dead were regarded will be given.

8.1.1. //Xegwi and /Xam

The //Xegwi and /Xam are southern San groups for which there is ethnographic sources detailing burials. It should briefly be noted that there is not a substantial amount within the ethnographic records relating to burial practices. The // Xegwi were traditionally said to have buried their dead facing west and in more recent times towards the north (Potgieter 1955: 4, 17; Barnard 1992: 87). Alan Barnard (1992: 87), whom undertook an ethnographic analysis of hunters and herders in southern Africa, has shown how this custom may relate to "the rising of the spirit with the setting of the sun". In some instances the //Xegwi were said to bury the dead in their deceased huts after which the structure would be burnt or abandoned (Barnard 1992: 87). Amongst the Kalahari Bushman the dead are considered taboo, as such the custom to abandon sites after a death is propagated by this belief (Barnard 1992: 87).

Pearce (2008: 95) further identified how the //Xegwi bury their deceased in a burial pit which had a side chamber. This side chamber was said to be sealed with a stone (Potgieter 1955: 17; Pearce 2008: 95). Approximately a month post-burial (at the next full moon) the //Xegwi were said to hold a celebration whereby a feast was held and many rituals were conducted (Potgieter 1955: 17; Barnard 1992: 87). Pearce (2008: 96) identified how the inclusion of possessions in the grave did not seem to occur in //Xegwi burial practices but were rather distributed after.

The /Xam were said to also bury their dead in burial pits which were dug by a tortoise shell (Bleek 1936: 201-202; Pearce 2008: 96). The body was positioned lengthways and was wrapped in skins prior to the burial (Pearce 2008: 97). The burial site was said to then be covered with bushes (Bleek and Lloyd MSS: L.VIII.28.8467). Unfortunately, not much else is known about the /Xam burial practices. Due to the limited information available on the southern San ethnographic accounts of burials it is worth broadening the analysis to include ethnographic accounts of northern San societies.

8.1.2. Nharo

Dorothea Bleek (1928: 35) provides an account of Nharo burial which will now be presented. On the day death occurred, a burial pit was dug. Prior to the body being transported to the burial site (by men) the deceased body was prepared by being tied into a contracted position (Bleek 1928: 35). The knees of the deceased would be placed against his/her chest (Bleek 1928: 35). Further, the deceased were also buried with their clothing and may have been wrapped in blankets (Bleek 1928: 35). The body is then placed into the grave, by the use of ropes, ideally laid on the left side with the facing towards the east. Following the interment, the grave was covered with bushes and stones. Bleek (1928: 35) noted how the society would then move and not visit the burial site for years. It is unclear what occurred to the deceased possessions. Pearce (2008: 94) has shown that two contradictory accounts are present in this regards. The first states that the deceased possessions were placed in the grave with the individual (Bleek 1928: 35). The other record indicates that the deceased possessions (if the deceased was male) were distributed amongst his sons by his father or brother, or to other male relatives if deceased did not have sons (Steyn 1971: 321; Pearce 2008: 94). The same processes were applied if the deceased was female, with her possessions passed on to her daughters or sisters and possibly other female relatives (Steyn 1971: 321; Pearce 2008: 94).

The Nharo perceive the dead as evil. They believe that all dead individuals become evil spirits (g//ãũane) regardless of their nature or how they were considered in life (Barnard 1992: 153). Consequently, after a persons' burial interaction with his or her spirit is avoided (Barnard 1992: 153). "The dead are rarely mentioned by name, and Nharo are afraid of the spirits. Spirits are said to visit the living, though these spirits are not thought of as the spirits of specific people that individuals knew in life" (Barnard 1992: 153).

8.1.3. G/wi

Preparation of the body in G/wi burial practices includes binding the body of the deceased. The arms would be tied across the chest, the knees raised and the ankles bound together (Thomas 1959: 125; Pearce 2008: 91). The individual's head was then said to rest on his or her fists (Thomas 1959: 125; Pearce 2008: 91). The deceased's body was also prepared by the sprinkling of an herb *sasa* on the body and in the nose

(Thomas 1959: 125-126). This was done due to the belief that the herb would create heavy rains and potentially provide protection from the deceased spirit (Thomas 1959: 125-126). The body was also enclosed in a kaross and was placed in a sitting position within the grave (Thomas 1959: 126). After the burial the grave was covered with thorn branches. It should be noted, that straight after the burial that the G/*wi* would remain upwind from the grave as the deceased spirit was said to be able to harm the living (Thomas 1959: 125; Pearce 2008: 92). Further, the G*/wi* were said to remain near the burial site for approximately three months after the burial (Thomas 1959: 125; Pearce 2008: 92). The deceased's personal belongings have been documented as having been broken and then placed on top of the grave, with the exception of beadwork (Silberbauer 1972: 313).

Additionally, similar to the Nharo the dead are believed to transform into malevolent spirits who dwell in an underworld (Barnard 1992: 114). No communication is permitted between the living and these spirits (Barnard 1992: 114). Once the process of decay begins the deceased are said to be free from their bodies, and because of the danger associated with the departed person's spirit, burial sites are subsequently avoided (Barnard 1992: 114).

8.1.4 !Xõ

There is one documented case of a !Xõ burial. Upon the individual's death (who had passed at a hospital) the deceased was transported back to the village (Heinz 1986:25-26; Barnard 1992: 72: Pearce 2008: 86-88). It was the responsibility of the men performing the burial to choose where the actual burial location would be. A prerequisite for the grave was that it had to be orientated north-south. Once this was found a rectangular pit was dug. A burial chamber was hollowed out and the body of the deceased, which had been wrapped in a blanket, was lowered into the burial pit. The body is placed horizontally on its side in the burial chamber. The head would be positioned on a pillow and made to face west, this was supposedly done so that sand would not enter the deceased ears and prevent him or her from hearing a man making a fire and subsequently help said man (Heinz 1986: 32; Pearce 2008: 88). It has been noted that at earlier stages the body used to be placed in a flexed position (Heinz 1986: 32: Pearce 2008: 87). At the end of the burial, the grave was covered with grass and branches. The site of burial would also be marked by two poles, which were set upright

in the grave at either end (Heinz 1986:25-26; Barnard 1992: 72: Pearce 2008: 86-88). Once the burial pit was completely filled, it was said that a third pole was placed across the other two (Heinz 1986:28 Pearce 2008: 88). This was done to provide "a walking stick to serve the corpse on its future path" (Pearce 2008: 88).

The *!Xõ* perception of spirits is that every individual has a */aa* (soul). A persons' spirit or soul would depart from his or her body upon death (Barnard 1992: 71). Spirits reside in both the sky and earth (Barnard 1992: 71). Additionally, there was a belief held "that those who commit suicide become 'dust devils', but there is no belief in any other animate forces in nature" (Heinz 1975; Barnard 1992: 71).

8.1.5. Ju/'hoansi and the !Xun

This section will look at the burial accounts for the Ju'hoansi (!Kung) and the !Xun . The Ju'/hoan is one of the !Xun languages, yet separate burial accounts are present for both. Polly Wiessner (1983: 2-4) witnessed a Ju'/hoan burial of a women named Cwa. Once Cwa had passed, four men went and selected a burial site and dug a grave. Cwa's body was wrapped in a blanket which was subsequently sewn around her (Wiessner 1983: 2-4; Pearce 2008: 78-80). Her anklets and bracelets were not removed, nor were her front and back aprons (Wiessner 1983: 2-4; Pearce 2008: 78-80). That evening (the deceased at this stage has not been buried) Cwa's hut was closed by means of an animal skin and barrel (Wiessner 1983: 2-4; Pearce 2008: 78-80). The next morning the funeral rites began. It seems that burials occurred either in the early evening or morning- this may have had to do with the setting and rising of the sun, however, this is not certain (Pearce 2008: 79). A speech was made to the great god by her brother, after which the back of her hut was broken down and three men transported her body out to the grave. Weissner (1983: 2) noted how the burial pit was approximately two metres deep and about half a kilometre away from the camp. The grave was oriented in a north-south direction, and the body was said to be placed facing east. Further the body was laid on its right side with the deceased's legs slightly flexed. It is noted that body positioning seemed to be significant and that the importance of it was discussed at the burial site. Cwa's brother during the burial was said to enter into trance. He scattered some scented powder into the grave and then made another speech requesting Cwa to find and accompany her ancestors into the eastern sky (Wiessner 1983: 3; Pearce 2008: 79). Once the burial pit had been filled, a stone was placed at the head of the interment to

identify it as a grave and ensure others did not walk over it at a later stage (Wiessner 1983: 3-4; Pearce 2008: 79). Following the burial, a bowl of water was brought for the men who dug the grave to wash in and for the others in attendance at the ceremony to symbolically cleanse their hands. The remaining water would be discarded onto the grave. Powder was then rubbed into each individual nose and between their eyes at the funeral, this was done with the notion that the deceased was bidding them farewell (Weissner 1983: 3; Pearce 2008: 80). The camp was also vacated a week after the burial, and in a show of mourning members of the camp shaved their hair the day after the burial (Pearce 2008: 80). Pearce (2008: 80) has stated that leaving a camp site was done so as to "leave a place with sad memories and to make a new camp as a symbol of continuation of life after death."

Further Ju'hoan burial practices have been recorded by Elizabeth Marshall Thomas (1959) and Lorna Marshall (1999). Marshall (1999: 39, 91) noted how burials were not ritually elaborate and that there was variability in burial practices. These differences were the result of an aspect that did not directly relate to the deceased but rather who was there at the time of death and where the death occurred (Marshall 1999: 178; Pearce 2008: 81). The body was prepared for burial, normally by the deceased's family. Once the body was placed into the burial, the ideal body positioning would be the flexed position with the knees drawn to the chest, with each hand touching the relevant shoulder, i.e. right hand to right shoulder and left hand to left shoulder (Thomas 1959: 126; Marshall 1999: 178-179). Thomas (1959: 126) also notes how the body could be placed in a sitting position. Marshall (1999: 179) specifically notes how the head of the body, with explicit reference to the nose, ears and eyes needed to protected. This was done by covering the entire head with an item such as a leather bag, or by covering the eyes and ensuring the nose and ears was blocked by some means. After these rituals the burial the camp was said to be abandoned (Thomas 1959: 127).

It seems that the deceased's possessions were either passed onto their children or siblings by the *hxaro* custom (Weissner 1983: 4). Alternatively, the personal belongings of the deceased were broken and discarded on top of the grave (Thomas 1959: 127, 2006: 130; Pearce 2008: 82). It does not seem that grave goods were included for usage by the deceased in the afterlife (Pearce 2008: 83).The !Xun burial was documented by Carlos Estermann (1976). Estermann (1976: 10) stated that a burial pit was constructed

outside the deceased hut if the individual had been an adult. Conversely, children were buried inside the hut. The body was positioned with the head facing the east. Estermann (1976: 10) noted that camps were occasionally vacated after a death. The men would participate in a ritual whereby green branches were thrown on the grave when the burial site was being left or if it was later revisited (Estermann 1976: 10). Women and children had their own traditions, which included rubbing their heads with charcoal and then discarded the rest onto the burial, bidding farewell to the deceased (Estermann 1976: 10). Estermann (1976: 10) was unsure of what happened to the deceased's personal belongings, yet it is clear the possessions were distributed and not buried with the body.

8.1.6. Why these ethnographic accounts are useful

These ethnographic accounts provide a means to establish continuities and discontinuities between the San and the LSA people. Strikingly, there are similarities between the ethnographically recorded burials and the burials of the Western Region LSA. First and foremost, the body placement seems to be reminiscent of the San burial practices. Most burials were recovered in a flexed position, with a few being identified in a sitting position. However, what the ethnography does not show is whether a variation in burial position relates to aspects such as gender or possible cause of death. In the Western Region, individual burials (males) were primarily found in the seated position whilst females were only found in such a position if they were part of a multiple burial. These burial practices may provide evidence for a differing burial tradition practiced by the LSA people that may have alternate factors for constructing in the above fashion.

A point of similarity relates to the exclusion of possession in burials as grave goods. The Western Region burials seldom have any grave goods within them. The rituals relating to protection of the deceased's heads (by means of being covered, placed in a bag, or by blocking the nose and ears), or post-burial placement of items to mark a grave are unfortunately not discernible in the archaeological record. This is due to the context that most of the burials in the Western Region have been uncovered from. This begs the question, if such procedures were taking place in some form in the Western Region. As was shown in previous chapters, ochre remnants have been found on craniums and in burials. Arguably ochre could have been used in these burials, in the same way powder, charcoal and other means were used to prepare the deceased and ensure the protection

of their head and consequently the deceased spirit. Notably, a few of the above ethnographic accounts spoke of binding the body and tying into possession before burial. Twine was recovered from some of the burials within the Western Region. Although in most cases it was regarded as associated archaeology, there is the possibility that it formed part of the burial as a means of preparing the death for interment. This may suggest that LSA people were binding their dead into position before burial.

Most of the recorded ethnographic accounts spoke of the abandonment of sites post burial. This highlights an issue of discontinuity between the Western Region LSA burials and the San burial practices. Although, most of the burials in the Western Region are found in open site contexts (similar to what the ethnography suggests). The burial sites are in such close proximity to each other (as can be seen in Chapter 6) and clustered along the coast that it seems to indicate that societies were not always abandoning their sites after a burial. Possibly perceptions towards the dead had changed and it was no longer deemed necessary to abandon sites after a death has occurred. This point is further discussed under materiality. Another point is that there is evidence of burials in rock shelters, which dispels the norm of burying the dead only in open sites. One of the most pertinent discontinuities relates to the advent of multiple burials that the Western Region sees. This does not seem to be mentioned in the ethnography, and may provide evidence that a different ideology was at play in the construction of some of the LSA burials.

Pearce (2008: 110-112) notes that there are two primary discontinuities in the Eastern Region between the LSA burials and the ethnographically recorded San burials. The first is the burial location, as previously mentioned, most of the burials within the Eastern Region occurred in rock shelters. Further, there is evidence to suggest continued occupation of rock shelters post burials. The second is the inclusion of grave goods within the Eastern Region. The burials within this region have an abundance of burial goods recovered. This is in stark contrast to what has been ethnographically documented. The above demonstrates how both the regions converge and diverge with the ethnography, which provides a framework to further understand the relationship and boundaries between the two regions. This is something that is discussed later on in the chapter, and that has been a recurring theme throughout this thesis and in the larger archaeological context.

The ethnography also establishes intention towards burial practices and perceptions towards spirits. Disposal of the dead was not for mere convenience and although the rituals were not excessively elaborate, care was explicitly expressed towards the dead and the process of burial. The choice to actually bury the dead is something that should not be overlooked either. It is a conscious choice of San societies and consequently mediates the relationship between the living and the dead. This relationship is possibly mimicked by the choice of the LSA societies to also inter their dead. Although most of the ethnography regarded spirits negatively, some of the accounts detailed specific instructions for preparing the spirits for the afterlife which would ensure that the dead did not then return and harm individuals within their society. Burials are a means in which societal processes are expressed and although these processes may change, the underlying assumption never disappears. It is paramount now to try and understand these differences and wrestle with the larger archaeology in order to see how these processes changed and thus affected the regions.

8.2. Materiality

In order to make any attempts at reconstructing the materiality of graves in the Western Region the attitudes towards burials and the dead should initially be identified- this was established through the ethnographic discussion. The ethnography allowed us to see that there is intention with regards to burying the dead and that the burial acts are not merely random. It was shown that societies may vary in how they treat their dead, but the underlying sentiment remains the same- there are intentional processes carried out on the dead and in burials.

Although a discussion of the ethnography may seem arbitrary to a broader theoretical discussion, it is not so when the theoretical position applied is materiality. It is arguable that presenting the ethnography in order to enable an analogical discourse is actually the first step needed when preparing a discussion surrounding materiality. This is because materiality calls for an analysis of two components. The first being an actual analysis of the objects' physical properties and secondly the analysis of what leads the object to be constructed in that particular way (Hodder 1991; Jones 2002; Thomas 2002; Meskell & Joyce 2003; Joyce 2000, 2003; Sofaer 2006). In this sense the material component encompasses both the properties of an object and subject under materiality. If this is then related to burials; the initial analysis is of the actual characteristics of the

skeleton and the grave .This first step was established in the prior chapters. The next step would be reconstructing *why* the objects have been materialised in that fashion. The second component is what this chapter is concerned with.

Identifying the choices behind burying the dead also draws attention to the fact that there are different levels within burial practices. In constructing a burial in terms of the ethnography, it seems that the grave constitutes to both the individual being buried and broader social practices (Meskell 2005). Both of these levels are encompassed within a burial and also draw to a different level of symbolism. These levels, which were briefly touched upon in chapter 2, will now be the focus of the material discussion. The point of the following section is to break down the components of the burial and see how the traditions and overall composition of the graves are constructed.

8.2.1. Understanding the burials in terms of the individual

"Materiality of the body is the materiality of process. It can be identified as expressive of social values and habits" (Soafer 2006: 77). In this sense, the body has been materialised after death. A significant feature of the materialization of a body is to identify how the process has been applied in relation to that specific individual. When the burials are looked at as isolated units the significance within them is apparent. Each burial constitutes of an individual who has been prepared for interment and who is then buried in a particular position.

In the Western Region, this is highlighted by the bodies being placed primarily in a flexed position, by the use of ochre and possibly twine and in the placements of specific items within the burial. Each attribute will now be discussed. Individually the burials were constructed to contain a person that was positioned in a particular way. The question thus is whether the body positioning is related to a social or religious construction or whether it is linked to the actual individual. In the broader context the body placement most likely relates to a wider tradition, as it does not vary considerably between burials and this aligns with the ethnography. Although some disparity exists- for example, the burials that were placed in a seated position as opposed to flexed. This again needs to be considered either in terms of an individual agent or as an attribute that aligns with a broader societal tradition. What is paramount is the fact that there is consideration when placing the body into the burial pit, it is not random. Another point of

consideration for the placement of the body is that only male individuals were placed in a seated position (UCT 229, UCT 596, UCT 587, UCT 591, UCT 372). Whether this preference was due to gender or because of subtle nuances in burial style an interpretation is something that needs to be considered. Inductively, these burials may provide evidence for a different faction of LSA people who prefer to bury their dead and primarily their males in a seated position as opposed to the traditionally expected flexed position. After all, the sitting position is an alternative form of placing an individual in a contracted position. In terms of the materialization of the burials the following is evident; body placement is significant and may relate either to differing factions of the same society or to gender preferences.

The preparation of the body for burial also plays a role in determining the essential social processes behind the actual burial practices. The significance placed on particular items over others provides insight into the societies' mind sets and choices. The use of ochre, whether for the actual body or as part of the burial (Burial 3 of the Diaz Street Midden burial had ochre coating the bottom of the burial pit), is significant in its own right (Dewar 2010). Archaeologically ochre has been used as a signifier for cognition and specifically as a marker for when symbolic behaviour may have emerged. The Middle Stone Age (MSA) has seen a substantial amount of research conducted in this regards (see Aiello 1996; Henshilwood 2004; Barham & Mitchell 2008; Coolidge & Wynn 2009). It is from these studies that the underlying importance of ochre as a symbolic signifier has been established. Yet, in LSA analyses ochre is acknowledged but the use of it is seldom elaborated on. Ochre usage is an integral part of the LSA, it is not only found in burials, but it is also found smeared on objects such as grindstones and is used in rock-art. Ethnographically ochre has been documented as forming a part of initiation ceremonies for Khoe pastoralists (Lander 2014: 77). While this is not strictly relevant to the burials of the LSA, Faye Lander (2014: 77) has shown that the Khoe 'rite of passage' practices are very similar to the initiation practices performed by the San. The above ethnography spoke to powders being smeared and placed on individuals prior to interment. It is thus not impossible to postulate that ochre may have been an integral substance used in the preparation of the body for burial. It seems detrimental to not acknowledge that ochre, was a substance continually used throughout the LSA, and that there is a possible connotation of importance attached to it. There is an additional possibility that differential treatment of individuals (i.e. preparing some bodies and burials with ochre

and others without) was done to highlight disparities between the dead and the level of importance placed on an individual.

The presence of twine in the burials should not be understated. It appears in San ethnographic accounts and archaeologically in the burials. The process of binding the dead and ensuring the correct body position was achieved, dictates that society considered body positioning to be an integral part of the burial. Preparing the body to ensure a correct position seems to be an important cultural or societal process relating to burials.

Materiality allows the components to be broken down, in order to ascertain both the individual and wider scope present in burial practices. The individual component highlights significant features of particular burials, identifies the differences and shed lights on the preparations made for the burials. Understanding the burials at this level, affords for them to be brought together in a wider context. This allows further investigation into the social and cognitive processes that could have affected the means in which the burials were materialised.

8.2.2. The broader regional scale of the graves in relation to the burial locations

When the burials within the Western Region are looked at as a whole, concurrently with the broader archaeology of the time, certain burial practices seem to align with shifts in the archaeological record. The burials found in the Western Region consist primarily of single burials in open contexts found primarily along the coast line. Rock shelter burials are scarce but there are a few within the region. The largest of which would be the burials in the Faraoskop shelter. Grave goods are not found in large amounts and the types of grave goods included in the burials are limited, specifically in comparison to the Eastern Region. The bodies were primarily placed in the flexed position, with a few exceptions of individuals being placed in a seated position. Individuals that were interred in a seated position were primarily males and the only instances of females being placed in this position was when they were a part of a multiple burial.

Multiple burials seem to occur in this region and comprise of females and juveniles only. Adult males do not seem to form a part of multiple burials. The Western Region burials are also characterised by graves where individuals display evidence for experiencing some form of trauma or violence.

When we look at the fact that most of the burials within this research framework fall between 3000 and 2000 BP a few things seem to align with the broader archaeology. This period comprises the Final Later Stone Age. Within the Final Later Stone Age rock shelters which were previously abandoned were resettled around 4300-3000 BP (Mitchell 2002; Stynder 2006). From about 3000 BP there was a shift to open air sites and mass exploitation of marine resources marking the megamidden period. It is also during this period that there is seemingly evidence for regionalisation and the construction of boundaries. During this period (with occupation primarily being based at open air sites) individuals were commonly buried in open contexts such as, in dunes or shell middens. The assumption here is that with the preference of habitation shifting from rock shelters to open air sites, the partiality for where individuals would be buried altered along with this move. Whether this was purely for convenience sake or because the social significance of the landscape changed is something that will be further evaluated.

It is during the Final Later Stone Age where arguably there is an intensification of people settling, and that there is a population increase which also leads to pressures being placed on resources and the need to identify boundaries. The majority of the burials compiled together for this research are dated to and recovered from about 3000 BP, which in light of the above may not be surprising considering populations stresses were increasing during this period. It does however, raise the question of whether prior to this period burying the dead was not as common practice as it became from about 3000 BP. Although there are graves from older periods it may be worth noting that bodies may have been disposed of in differing ways and that the idea of burying the dead only became common place around 3000 BP. Very minimal burials pre-dating 3000 BP seem to be recovered, however, this could be because of preservation and the context in which a substantial amount of interments are found in. It should also be noted, that most of the older burials were found in rock shelters and that few shelters have been excavated with the intention of uncovering LSA graves.

In terms of identifying boundaries and marking landscapes, research suggests that rock shelter burials in the Eastern Region were used as means to lay claim to an area (Hall 2000). In the Western Region we see burials at a few rock shelters, the most substantial being Elands Bay Cave and Faraoskop. Elands Bay Cave and Elands Bay sees burials

spanning across the time periods whereas the Faraoskop burials all fall into one specific time range as was shown by the calibrated dates. Due to this disparity these sites should be examined separately. It seems that Elands Bay and Elands Bay Cave saw continual usage both as a site for settlement and for burials. The choice to bury individuals within the cave may align with the significance associated with rock shelters, specifically ones that depict rock art such as Elands Bay Cave. Arguably, if the rock shelter and or rock art symbolises a level of importance for individuals within LSA societies then the intention to bury the dead at this location may have to do with mediating the relationship between the living, the dead and their spirits. On the other hand the Faraoskop shelter produced mass individual burials with a combined date of 1995 to 1841 cal BP at the 95% confidence range suggesting an altogether different significance to that of Elands Bay Cave.

The Faraoskop rock shelter is one of the few rock shelters that is situated in between the interior mountains and the coast (Manhire 1993). When this site was excavated a substantial Pleistocene deposit was discovered. The rock shelter saw a hiatus of settlement for about 6000 years from the late Pleistocene and it was resettled during the mid-Holocene from about 4400 BP (Manhire 1993). It has some of the best preserved associated archaeology, including ochre, twine, leather, fletched arrows, worked bone, OES beads, sewn animal skin and marine shell artefacts (Manhire 1993: 21-22). The discovery of twelve burials from the site was a significant find. Of the twelve burials the context of five of them is well known. There are subsequently two ways in which this shelter can be understood within the Western Region. The first follows that considering the multiple interments at single sites (such as the Faraoskop one) is particularly rare for the region. Additionally, when these burials were calibrated they all fell closely within one time period, and produced a combined date of 1995 to 1841 cal BP it seems to suggest that these burials as well as this particular rock shelter experienced something unique. That the individuals within this shelter embodied an experience that was distinctive and consequently a burial site that was not considered the norm was sought out. It is impossible to fully ascertain what happened to these twelve individuals without knowing more about their possible cause of death, as of yet this has not been mentioned in the published literature. What is viable to assume though, is that there is a strong likely hood that this was one burial event, given the tightly calibrated date ranges of each individual (as shown in Chapter 5) and due to the

fact that a combined date could be produced. From this temporal induction it is ascertainable that these individuals were purposefully buried together in this shelter and that in itself should not be over looked. It is a memory of an event that has been left behind and although it may not be possible to identify the exact events which lead up to the burial it is possible to understand that the burial in itself marks an event (Hodgkin & Radstone 2003a, b; Portelli 2003). It is a social and cultural expression of a past instance.

An alternative view point to the above involves looking at the broader archaeology during the time period that the Faraoskop burials fall into. As has been previously mentioned, at 3000 BP there was a shift to open air sites. Subsequently, most burials from this period and onwards have also been recovered from single open air contexts. During this period, there is similarly evidence for multiple burials whereby more than one individual had been interred in a single burial pit. In Chapter 5, these burials were all calibrated producing the following results, at the 95% confidence range (Table 5.4): 2660-2288 cal BP for SAM-AP 6054A, 2489-2081 cal BP for SAM-AP 6054B, 2327-2010 cal BP for SAM-AP 6348A, 2300-1944 cal BP for SAM-AP 6348B, 1873-1594 cal BP for UCT 317, 2298-1889 cal BP for the Eland Cave 1&2 burial and 2293-1749 cal BP for UCT 331.

For the most part the multiple burials all dated between 2600-1700 BP with the one exception being UCT 248 which dated to 5320-4820 cal BP. For the moment, if UCT 248 is disregarded it is noteworthy that the multiple burials coincide with the time period of the Faraoskop's graves. It was previously discussed how the Faraoskop burials could be considered a unique occurrence, however, the possibility exists that the Faraoskop interments are another form or subset of multiple burials. Manhire (1993: 19) stated how the burials were "all tightly placed in a small hole such that they tended to encroach upon each other." If you consider it in light of the above context, the individuals may not have been buried in the traditional sense of a multiple burial but, nevertheless, there is the possibility that they were interred with the implications of being placed purposefully together in one burial. Multiple burials during the Final Later Stone Age may have been a mode in which to express certain experiences that the society or the individuals may have gone through both pre and post death.

This suggests that the rock shelter may have had a specific significance when it was selected for the burial site. It may have been a means to ensure a particular outcome by

way of conducting the burial at a rock shelter instead of at an open site. The shelter itself may possess certain qualities that were required and sought after. In either interpretation of the Faraoskop shelter it is evident that this burial did embody a past event and may in fact align with broader social processes that were being experienced during the Final Later Stone Age period. It is also plausible, as has been suggested by Hall (1990; 2000), for the Eastern Region and Dewar (2010: 32) for the Western Region, that placing these individuals in a rock shelter may have been a means to lay claim to a boundary. In the Eastern Region the argument for laying claim to the land and establishing social boundaries, is better established because there is continual site usage (Hall 2000: 143-144). However, this seems unlikely for the Western Region, as the burials within these sites (Faraoskop and Diaz Street Midden) all have one closely consolidated date range. This temporal boundary suggests that rather these burials are reminiscent of a specific event that occurred and that there may be some other factor within society driving these types of burials.

Another point of discussion is that the concept of cemeteries may have been developing during the Final Later Stone Age. Although, it should not be assumed that it would be in the same way as society today sees cemeteries. In this sense a cemetery is "more than a number of burials located together, it is a piece of land set aside for a particular purpose…" (Littleton & Allen 2007: 283) In Australia there are records of hunter-gatherer burials being uncovered in what has been deemed as cemeteries (Littleton & Allen 2007). Although in the Western Region the norm is expected to be single open air site burials, when the locations of individual burials are observed a large proportion occur in close proximity to one another, which mimics very closely how cemeteries are constructed. In this sense the landscape of the time may have changed in conjunction with the shifts seen in the Final Later Stone Age and subsequently the burials may have been constructed in varying ways because of it.

The Diaz Street Midden burials may be an example of such practices extending to the creation of a cemetery. These burials were uncovered from a mid-Holocene shell midden (Dewar 2010). Burial one, three, four and five had contextual information available with burial one also displaying evidence of violence (Dewar 2010). When these burials were calibrated they dated to the following ranges at 95%: Burial 1 2000-1712 cal BP, Burial 3 2116-1870 cal BP, Burial 4 2030-1831 cal BP and Burial 5 2054-1863 cal BP.

In addition to that a combined date was able to be produced for this burial which is 2005- 1878 cal BP. This date falls quite closely to the time range of the Faraoskop burials and falls within the time line where most of the multiple burials were uncovered from. Please note a broader discussion specific to the multiple burials will be presented further on in the chapter. The implications for this site are once again similar to what was discussed above, it is a unique occurrence, or falls part of a tradition of multiple burials bordering on implementing a form of mass individual burials at single sites that embodies a particular experience. It is possible that the LSA society of the time saw fit to choose a specific location to bury all such individuals together, to either engage with or mark the landscape and to possibly treat the deceased in a particular fashion that was deemed necessary for the burial.

8.2.3. Burials that have some form of trauma or violence

The concept of burials being conceptualised differently may have extended to the burials that had evidence of trauma or violence. In the temporal chapter it was shown that these violent burials had a start boundary (at 95% confidence level) of 2668-2193 cal BP and an end boundary at the same confidence level of 1862-1345 cal BP. The burials individually calibrated as follows, 2660-2288 cal BP for SAM-AP 6054A, 2489-2081 cal BP for SAM-AP 6054B, 2327-2010 cal BP for SAM-AP 6348A, 2300-1944 cal BP for SAM-AP 6348B, 1873-1594 cal BP for UCT 317, 2298-1889 cal BP, 2000-1712 cal BP for Burial 1, 2323-2025 cal BP for UCT 591 and 2655-2150 cal BP for UCT 587. Before examining the specific situation of the Western Region violent burials, a brief overview of hunter-gatherer violence will be provided.

Traditionally, hunter-gatherers have been regarded as peaceful egalitarian societies. The idea of these societies displaying forms of aggression was for a long time not accepted and not considered viable. Subsequent research has dispelled this notion and has shown that hunter-gatherer and forager societies were not without violent tendencies (Keeley 1996; Rice &Le Blanc 2001; Lambert 2002; Arkush & Allen 2006; Allen 2015). One of the case studies conducted in Africa was done by Richard Lee (1979: 397) who used the !Kung San hunter-gatherers to show that such societies do fight and sometimes kill. This study further showed how the homicide rate was 29.3 per 100 000 person-years of violence within the !Kung society which was high for African standards (Lee 1979: 397).

Evidence for violence between hunter-gatherers both at the intra and inter scale has been documented around the world. Interestingly enough, a substantial amount of these victims had wounds similar to the Western Region- either bone points or arrowheads were recovered or there was evidence for blunt force trauma to the head (Pilloud *et al.* 2015; Allen 2015). The advent of warfare and personal violence, which classifies as homicide, has been discussed and presented with the results concluding that foragers may have actually engaged in warfare (Allen 2015). These studies have also detailed how most of the time the violence was related to intensification theory (Pate 2006; David *et al*. 2006; Allen 2015; Martin & Harrod 2015). This theory proposes that the intensification of resources changes the social and political atmosphere and organization of society, which can ultimately lead to competition and in turn degenerate into conflict and violence. Additionally, culture specific patterns of violence can provide insight into specific societies and how violence is incorporated into the landscape (Martin & Harrod 2015).

The burials within the Western Region, where cause of death was related to some form of violence or trauma, fall within a period that has arguably seen the escalation of territoriality and intensification of resources. If the burials were dated to an older period the intensification theory discussed above may not be applicable and the burials would have to be interpreted in an intrapersonal as opposed to interpersonal scale. However, due to the disparities between the Eastern and Western Region and the social and environmental atmosphere of the time, it is likely that the violence transpired on an inter-personal group context (Morris & Parkington 1982; Pfeiffer *et al*. 1999; Pfeiffer & Van der Merwe 2004; Pfeiffer 2010, 2013; Morris 2012). The point now turns to whether these burials were being conceptualised differently- as they are a marker for conflict and a traumatic experience. The material composition of these burials here has to be regarded against the broader context of LSA graves. The violent burials that compose of single male burials (UCT 587 and UCT 591) were placed in a sitting position. The graves that comprised of females or juveniles within them were not single burials but rather multiple burials (SAM-AP 6054A, B and C, SAM-AP 6348A and B and UCT 317). The one exception to this is Burial 1 which was of a female burial, seemingly in a single burial context. However, Burial 1 is a part of the Diaz Street Midden burials which was a burial of more than one individual in a single site, and as was argued above, this may be an alternative form of multiple burials.

The female and juvenile burials were placed mostly in the flexed position, but the only instance so far documented of a female in a seated position has been SAM-AP 6054A,B and C which was both a multiple and violent burial. It would thus seem that when the individual components are deconstructed violent burials are composed differently in terms of gender. With the preference for males to be placed in the sitting position as opposed to the flexed position. Alternatively, the men who were killed may have belonged to a group of LSA people who preferred to bury their dead in the sitting position. Following this, females and juveniles seem to be purposefully buried in a multiple burial (as opposed to burying each individual in their own burial pit) when the deceased have passed from some form of trauma or violence. There is an apparent choice here to not bury females and juveniles separately when the experience they embody relates to some form of trauma or violence. In terms of materiality, the societal pressures seem to be influencing the cultural process and the decisions relating to how violent or traumatic burials should be constructed. It is possible, that these burials are composed differently as they help to either mediate the relationship between the living and dead, to a mark a point of impact, or memory of an event or to mark the landscape in a way that implies a social significance for the people of that area.

8.2.4. The multiple burials that do not display evidence of violence

Multiple burials extend to encompass scenarios beyond violence. Due to the composition of the burials whereby only adult females and juveniles are recovered from these graves, a specific notion may have been developing in LSA societies. If an adult female passes, her children may have been buried with her as the child may have be seen as a burden and a drain on resources (Morris 1981). If a mother dies during child birth, the baby may be regarded in the same light, and as such it is possible that this is why females are being recovered with both children and infants. In this sense, the burials here are certainly materialised to incorporate this societal belief. Additionally UCT 248, which had a date range of 5320-4820 cal BP, may be understandable in this regards. When she passed her child was buried with her to ensure that no unnecessary societal pressures were placed on the living. This idea may see a continuation on into the Final Later Stone Age period by the recovery of the UCT 331, UCT 363 and UCT 588&589.

This interpretation does not undermine the analysis that multiple burials and mass burials during the Final Later Stone Age were a part of an evolving tradition that sought to embody specific experiences that the society and individuals were dealing with, and as a possible means to establish a boundary or a connection to a landscape that was seeming constantly in flux. Multiple burials and multiple single interments at one site encompass both violence and unique occurrences where more than one individual died simultaneously during the Final Later Stone Age period. Further evidence for this is provided by the Eland Cave 1 and 2 burial which was a burial of two children. As no adults were recovered from this burial, it seems unlikely these children were placed in a combined burial as a means to eliminate burdens on society and the resources. It seems rather, that this burial was purposefully constructed, to encompass a specific experience and for the society to conceptualise that event through this burial. In terms of these varying possibilities, the materiality of multiple burials seems to change and develop in conjunction with the temporal and spatial movements of the periods and the broader context.

8.2.5. Grave Goods

There has been a notion within archaeology that the lack of material culture present at a site, or for example in a burial, limits the extent of a viable interpretation (Meskell 2005: 11; Boyd 2014: 192). While this is true to an extent, it is no longer considered such a hurdle as once before. The absence of items does not mean that there was a lack of customs, or a society was less complex and did not participate in more culturally rich activities (Boyd 2014: 192-193). Although this may seem arbitrary, it is a point worth noting for grave goods within the Western Region. This region has a lack of grave goods especially in comparison to the Eastern Region where a substantial amount of grave goods are uncovered from the burials. The items found in the burials within the Eastern Region provided a means for research to see how the living may have been incorporating these possessions into the burials as a way to mediate with the spirit world (Pearce 2008: 257). Consequently, the burials would have been purposefully constructed with burial goods. The Western Region requires an interpretation that is encompassing of the lack of grave goods. The region has shown evidence of conceptualizing burials in a fashion that is not the norm. The absence of the material culture may provide evidence that the actual ritual and burial of the individual was more

important than what was included in the grave. For example, the burial of an individual in a shell midden may be symbolically rich enough that the advent of grave goods was not necessary. It is also possible, of course, that an individual's possessions play a bigger role in a society post-death and that their exclusion from the burial does not imply a lesser symbolic or ritually significant burial tradition but rather a society that has broader processes at play. Regardless of how the possessions were being dealt with, the lack of them in the graves can be an identifying marker, a symbol for something that differentiated the one region from another (and possibly the dead) and may speak to broader societal processes.

8.2.6. Returning to materiality

The above discussion has attempted to deconstruct the material components of the burials with the broader contextual atmosphere and archaeology of the time. This was done in the hopes of constructing an understanding of the burials that is neither too symbolic nor too functional. It is during the discussion encompassing materiality that external influences are looked at and understood. The means by which people were interacting with their landscape and their larger society becomes paramount. This in conjunction with understanding how the burials were individually materialised allows one insight into past social and cognitive practices and specifically into how cultural aspects were and were not being symbolised. I think it is apt to say that materiality advocates for "broader interpretive connotations around and beyond the object, on the unstable terrain on interrelationships between sociality, temporality, spatiality and materiality" (Meskell 2005: 2) and that this processes was engaged with and applied for the Western Region burials.

8.2.7. The regionalisation of the Western and Eastern Region

The final point of discussion needs to surround both the regions in the broader context taking into account what has been discussed under the theoretical umbrella of materiality. Throughout the thesis (and this chapter) information of the burials within the Eastern Region has been supplied. The purpose of this was to provide a broader picture and help to situate the Western Region burials in comparison to the broader landscape. Specifically, as the patterns within the Western Region were analysed through time and space historicizing them but not placing them in the broader context. It has been necessary to present this information in stages as it allows certain conclusion

to be drawn: there is evidence for regionalisation between the Western and Eastern Region. The burials between the regions differ substantially and overall the patterns present in the Western Region may have been a result or repercussion of interactions with the Eastern Region and other LSA groups.

This line of thought can be drawn from three prime factors. The first, the evidence for violence within the Western Region, the second the lack of grave goods in the Western Region in comparison to the Eastern. Finally, the territoriality possibly being expressed through the burials of individuals in rock shelters (for the Eastern Region and to a lesser extent the Western Region) and through the creation of multiple and mass individual burials at particular sites (for the Western Region). Each of these factors has shown that there are contrasting actions between the two regions in the same time period, and that symbolism may have been expressed through the burials. The burials may provide evidence for different factions of LSA populations attempting to co-exist but that have diverging traditions, possibly previously existing under similar ideals, but that ultimately deviated and engaged with their people, society and landscape in varying fashions

The violent burials are prime examples of different sets of LSA societies. It is more likely the violence was interpersonal as opposed to intrapersonal due to the likely stresses of resources and the need to mark landscapes. This in itself may be a marker of varying societies. It seems that it is also possible to argue that the Eastern Region was mediating between the living and the spirit world through the burials in a way that is not possible to suggest for the Western Region (Pearce 2008). This is due to the painted stones associated with some burials, the water symbolism suggested by some of the grave goods, and the prime choice to bury individuals in rock shelters whose rock surfaces have been argued as been considered a veil to the spirit world (Pearce 2008).

This however, does not undermine the Western Region which may have been developing a tradition apart from the Eastern Region in the hope of discerning themselves from the LSA people of that region (this could also be the case for the Eastern Region). The Western Region is not without its own symbolism, as has been shown in the different scales under the discussion of materiality. The burials in this sense have identified how the landscape was being interacted with and how the perceptions of LSA societies may have been changing. This chapter has demonstrated both continuities and discontinuities in relation to burial practices, it has detailed how

the materialization of burials relates to scales and that at each level the temporal, spatial and the actual conceptualization of the burial merge together to construct a relationship between people and objects that is not unidirectional. Ultimately, this research engages and explains how traditions diverge. It further shows how people and societies change and compete and that burials are a way to express, embody and grieve such experiences being dealt with.

8.3. Final thoughts

This research set out to analyse the burials in the Western Region in order to identify past social processes behind the burial practices. A database of the burials found in the region was compiled and then the patterns that emerged through the research were analysed through time and space. This required calibrating all the radiocarbon determinations, running Bayesian models on the dates and spatially mapping all the features present in the burials across the region. In doing this, an argument was built around the burials temporal, spatial and social significance. It seems that the burials within the Western Region document a time when perceptions towards the dead may have been changing. Additionally, the burials may have been a means to express social and culture experiences that societies were dealing with. The burials further indicate that there was a specific period in time when LSA past societies within the Western Region were experiencing inter-personal violence. This suggests that relationships between societies in the Final Later Stone Age were under stress.

It seems that the Western Region is regionally distinct and that the burials provide evidence for this. Burials between the Western Region and Eastern Region are different in relation to particular features. Even more so, specific burial traditions relating to multiple burials and multiple single interments at one site seem to be developing in the Western Region. Suggesting, that this tradition had a broader social significance and may have been used to mediate how society interacted and dealt with the dead.

There is scope to further this research and extend it towards the interior of both the Western and Eastern Region and further north, into the Northern Cape. The more contextually rich interments that are uncovered, the more established burial knowledge for past LSA societies will become. This will enable temporal, spatial and social models to

be expanded on and can identify how societies may have been engaging with the past landscape.

In this regards, it may be worth using this research to possibly identify diverging groups of people. The sitting burials identified in this study, which were all calibrated to approximately between 3500-2000 BP are reminiscent of Khoekhoe burials who tend to bury their dead in an upright seated position in grave shafts (Stynder & Yates 2006: 206). It is worth considering that the sitting burial pattern may suggest broader movement of people or ideas than is expected. These subtle differences may also be indicators of differing factions of people co-existing together on the landscape. We need to consider how social relationships were influencing burials? Were they being expressed through the burials? Or are the burials a means specifically to mediate with the dead and spiritual world? These questions raise interesting points for future research. Ultimately this temporal, spatial and social study on the Western Region LSA burials has provided a means to "…not only to document ancient rituals by recovering the evidence of past funerary practices but also attempt to understand them within their historical contexts and to explain why they were enacted in the ways they were" (Parker Pearson 1999: 2).

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Appendix A: Database

Table A.1 documents each burial in the database, where the burial is located and what sources were used.

Burial no	Location	Sex	Reference for DeltaC13 value	Reference for burial
UCT 434	Elkehuwel 1, in Brittania Bay development, Site B		N/A	Morris (1992)
UCT 222	Stompneusbaai	Male	Pfeiffer & Sealy (2006)	Sealy & van der Merwe (1988); Sealy (1989)
UCT 385	Faraoskop, Graafwater, Vredendal District	Female	Dewar (2010)	Manhire (1993); Alder (1988)
UCT 386	Faraoskop, Graafwater, Vredendal District	Male	Dewar (2010)	Manhire (1993); Alder (1988)
UCT 387); 392	Faraoskop, Graafwater, Vredendal District	Male	Stynder *et al*. (2007a,b); Sealy & Loftus (2012); Dewar (2010)	Manhire (1993); Alder (1988)
UCT 388	Faraoskop, Graafwater, Vredendal District	Juvenile	Sealy *et al*. (1992)	Manhire (1993); Alder (1988)
UCT 390	Faraoskop, Graafwater, Vredendal District	Male	Manhire (1993); Sealy *et al*. (1992); Pfeiffer & Sealy (2006)	Manhire (1993); Alder (1988)
UCT 391); 389	Faraoskop, Graafwater, Vredendal District	Female	Manhire (1993); Dewar (2010)	Manhire (1993); Alder (1988)
UCT 393	Faraoskop, Graafwater, Vredendal District	Juvenile	Manhire (1993)	Manhire (1993); Alder (1988)
UCT 394	Faraoskop, Graafwater, Vredendal District	Male	Manhire (1993); Dewar (2010)	Manhire (1993); Alder (1988)
UCT 395	Faraoskop, Graafwater, Vredendal District	Female	Manhire (1993)	Manhire (1993); Alder (1988)

UCT 396	Faraoskop, Graafwater, Vredendal District		Manhire (1993); Dewar (2010)	Manhire (1993); Alder (1988)
UCT 397	Faraoskop, Graafwater, Vredendal District	Female	Manhire (1993); Dewar (2010)	Manhire (1993); Alder (1988)
UCT 398	Faraoskop, Graafwater, Vredendal District		Manhire (1993)	Manhire (1993); Alder (1988)
UCT 331	Wyegang, north east of Clanwilliam	Remains of adult and baby	Sealy & van der Merwe (1986)	Sealy (1984), (1986); Sealy & van der Merwe (1985, 1986, 1987)
SAM-AP 1449	Cedarberg, Clanwilliam		Sealy & van der Merwe (1986)	Sealy (1984), (1986); Sealy & van der Merwe (1985, 1986, 1987)
UCT 333	Klipfonteinrand, near junction of Parkhuis Pass & Wuppertal Road	Male	Parkington & Poggenpoel (1971); Sealy *et al*. (2000)	Parkington & Poggenpoel (1971); Sealy (1984)
SAM-AP 4793	Noordbaai, Saldahna	Male	Sealy (1989)	Sealy (1989); Sealy & van der Merwe (1988)
SAM-AP 4899	Saldahna Bay	Male	Dewar (2010); Pfeiffer & Sealy (2006)	Sealy (1989); Sealy & van der Merwe (1988)
SAM-AP 5095	Saldahna Bay	Female	Dewar (2010); Pfeiffer & Sealy (2006)	Sealy (1989); Sealy & van der Merwe (1988)
SAM-AP 6031	Geelbek, Langebaan Lagoon	Male	Pfeiffer & Sealy (2006)	Sealy (1989); Sealy & van der Merwe (1988)

UCT 435	South of Lynch Point, Club Mykonos, Langebaan Lagoon	Female	Stynder (2006); Stynder *et al*. (2007a)	Morris (1992) & Forensic Report; Stynder (2006); Stynder *et al*. (2007)
UCT 162	Ysterfontein strand, near Darling	Male	Sealy van der Merwe (1986); Pfeiffer & Sealy (2006)	Hausman (1980); Sealy (1989)
UCT 112	Found on sand dune at Darling sea coast	Male	Sealy van der Merwe (1986); Pfeiffer & Sealy (2006)	Hausman (1980); Sealy (1989)
UCT 113	on sand dune at Darling sea coast about 1mi from UCT 112	Female	N/A	Hausman (1980)
SAM-AP 4803	Ysterfontein, Darling District		N/A	Morris (1992)
SAM-AP 5068	Ysterfontein, Western Cape	Male	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 6054a	Modder river mouth, Malmesbury district	Female	Pfeiffer (2013); Pfeiffer & van der Merwe (2004)	Sealy (1989); Pfeiffer & van der Merwe (2004)
SAM-AP 6054b	Modder river mouth, Malmesbury district	Juvenile	Pfeiffer (2013)	Sealy (1989); Pfeiffer & van der Merwe (2004)
SAM-AP 6054c	Modder river mouth, Malmesbury district	Juvenile	Pfeiffer (2013)	Pfeiffer & van der Merwe (2004)
SAM-AP 4813	Bokbaai, Darling	Female	Pfeiffer & Sealy(2006)	Singer (1955); Sealy (1984); Sealy & van der Merwe (1985); (1988)

SAM-AP 1149	Blaauwberg, Cape	Male	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 1157	Blaauwberg, Cape	Female	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 4636	Blaauwberg, Strand	Male	Sealy (1989)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 4970	Cape Town, Seapoint, Beach Road		N/A	Morris (1992)
UCT 229	Melkbosstrand	Male	Sealy (1989)	Sealy (1989); Hausman (1980)
SAM-AP 6041b	Milnerton, approx 200m S of lagoon	Male	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 5075	Cape point, shelter near Rooikrans	Male	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 4203B	Kommetjie	Female	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989); Morris
SAM-AP 4720	Kommetjie	Male	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 4304A	Noordhoek, Cape Province		Pfeiffer & Sealy (2006) ; Sealy & van der Merwe (1988)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 4305	Noordhoek, Cape Province	Male	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 4306	Noordhoek, Cape Province	Female	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 4308	Noordhoek, Cape Province	Male	Pfeiffer & Sealy (2006)	Morris (1992)
UCT 248	Noordhoek Valley	Female and child	Pfeiffer & Sealy (2006)	Morris (1981); Sealy & van der Merwe (1988); Sealy (1989)

SIM1	Simons Town		N/A	Morris (1983)
UCT 158	Llandudno	Female	Pfeiffer & Sealy (2006)	Rudner & Rudner (1954)
UCT 159	Llandudno		N/A	Rudner & Rudner (1954)
SAM-AP 6088	Holbaai		N/A	Morris (1992)
UCT 363	Doringbaai	Adult and child	N/A	Morris (1992)
UCT 224	Elands Bay	Female	Sealy & van der Merwe (1986)	Hausman (1980)
UCT 375	Elands Bay Cave	Female	Sealy & van der Merwe (1986)	Sealy (1984); (1986); Sealy &van der Merwe (1985, 1986, 1987);
UCT 378	Elands Bay Cave	Male	Sealy & van der Merwe (1986)	Sealy (1984, 1986); Sealy & van der Merwe (1986); Brauer and Rosing (1989)
UCT 373	Elands Bay Cave	Female	Sealy & van der Merwe (1986); Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
UCT 374	Elands Bay Cave		Sealy & van der Merwe (1986); Pfeiffer & Sealy (2006)	Sealy (1984, 1986); Sealy & van der Merwe (1985, 1986, 1987)
UCT 427	Elands Bay	Female	Pfeiffer & Sealy (2006)	Morris (1992)
UCT 433	Tortoise Cave	Juvenile	Sealy & van der Merwe (1986)	Sealy (1988);Robey (1984)

UCT 334	Clanwilliam; Andriesgrond		Sealy & van der Merwe (1986); Sealy *et al*. (2000) ;	Sealy (1984, 1986); Sealy & van der Merwe (1985, 1986, 1987)
SAM-AP 4692	Peers Cave	Male	Oxcal ORAU database	Greenland (1978); Protsch (1974); Peers & Goodwin (1953);
SAM-AP 6272	Darling District	Male	Stynder (2006); Stynder *et al*. (2007a,b)	Pfeiffer (2013)
UCT 596	Elands Bay	Male	Pfeiffer (pers.comm.)	UCT forensic report
SAM-AP 4202	Kommetjie	Female	Stynder (2006)	Hausman (1980) & Morris (1992)
SAM-AP 4203A	Kommetjie		Pfeiffer & Sealy (2006)	Pfeiffer & Sealy
UCT 587	Elands Bay	Male	Pfeiffer (pers.comm.)	UCT forensic report); HWC report
SAM-AP 5070	Melkbosstrand	Female	Stynder (2006); Stynder *et al.* (2007a)	Pfeiffer (2013)
UCT 591	Buffels Bay	Male	Pfeiffer (2013)	UCT forensic report); Written catalogue
UCT 595	Saldanha	Female	Pfeiffer (pers.comm.)	UCT forensic report); Written Catalogue
SAM-AP 6260A	Melkbosch	Female		Pfeiffer (2013)
UCT 317	Uilenkraal); Quoin Point	Female and baby	Loftus & Sealy(2012)(Date On Female); Sealy (2010); Isotope	Morris (1981,1992); Morris & Parkington (1982)

UCT 588&589		Adult and child	PTA lab from Dr. Stephan Woodborne with permission from Prof. Alan Morris	UCT Written catalogue
UCT 605	Sedgefield	Female	N/A	HWC report
UCT 616	Lamberts Bay	Female and child	N/A	UCT forensic report); Written Catalogue
UCT 586	Jacobsbaai	Female	N/A	UCT forensic report
DR 343); 9	Milnerton	Female	N/A	HWC report
WC11); 0055); 11	Milnerton	Male	N/A	HWC report
WC18); 383); 10	Montague	Male	N/A	HWC report
SAM-AP 6053	Bredasdorp , Byneskranskop 1	Juvenile	N/A	De Villiers & Wilson (1982)
SAM-AP 6051	Bredasdorp , Byneskranskop 3	Female	De Villiers & Wilson (1982); Pfeiffer & Sealy (2006)	De Villiers & Wilson (1982)
SAM-AP -AP6052	Bredasdorp , Byneskranskop 3	Juvenile	De Villiers & Wilson (1982)	De Villiers & Wilson (1982)
SAM-AP 6348B	Melkbosstrand	Female	Pfeiffer (2013);	Pfeiffer *et al*.(1999)
SAM-AP 6348A	Melkbosstrand	Female	Pfeiffer (2013);	Pfeiffer *et al*.(1999)
SAM-AP 6314	Steenbokfontein Cave	Infant	Jerardino *et al*. (2000); Jerardino&Yates (1996)	Jerardino *et al*. (2000)
Eland cave 1 &2	Pakhuis mountains	3 and 6.5	Sealy *et al*. (2000)	Sealy *et al*. (2012)

Burial1	Diaz Street Midden- Saldanha	Female	Dewar (2010); Pfieffer (2013)	Dewar (2010)
Burial3	Diaz Street Midden	Female	Dewar (2010); Pfieffer (2013)	Dewar (2010)
Burial4	Diaz Street Midden	Male	Dewar (2010); Pfieffer (2013)	Dewar (2010)
Burial5	Diaz Street Midden		Dewar (2010); Pfieffer (2013)	Dewar (2010)
SAM-AP 6060	Bredasdorp , Byneskranskop 3	Infant	Pfeiffer & Crowder (2004)	De Villiers & Wilson (1982); Pfeiffer & Crowder (2004); Pfeiffer & Harrington 2011
SAM-AP 4791	Noordbaai, Saldahna		N/A	Morris (1992)
UCT 134A	Llandudno	Male	Loftus & Sealy (2012)	Hausman (1980); Stynder *et al*. (2007a); Loftus & Sealy (2012)
SAM-AP 4637	Gordons Bay	Female	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 5040	Bokbaai	Female	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 6017	Melkbosch	Male	Pfeiffer & Sealy (2006)	Sealy van der Merwe (1988); Sealy (1989)
SAM-AP 6023	Melkbosstrand	Male	Sealy (1989)	Morris (1992)
SAM-AP 4942	Kommetjie	Male	Sealy(1989)	Morris (1992)
SAM-AP 5041	Melkbosch	Female	Pfeiffer & Sealy (2006)	Morris (1992)

SAM-AP 37	Blaauwberg, Cape	Female	Pfeiffer & Sealy (2006)	Morris (1992)
UCT 169	Hout Bay	Female	Pfeiffer & Sealy (2006)	Morris (1992)

Appendix B: Iziko-South African Museum Collections

Introduction

This appendix details the information gathered through the Iziko-South African Museum collections. The first Table B.1 details the collections that had associated radiocarbon dates. The second Table B.2 documents the grave goods that did not have associated radiocarbon dates, the collections presented in this table were not included in this study. Not all of the burials listed in Table B.1 were included in this study either.

Table B.1:Iziko-South African Museum burial goods which were radiocarbon dated post-2000 BP. Not all of them were included, and this was dependant on the region the burial was found in (some overlapped into the Eastern Region) and the other contextual evidence available for the burial.

Accession number	Details	Included in this study
SAM-AP 6147	Fragments of seal bone 3x teeth of seal	No
SAM-AP 1131	Non-human bone 1x stone tool	No
SAM-AP 1157	Piece of wood Bone fragment	Yes
SAM-AP 1449	6 x OES fragments Stone flakes Twine Pottery fragments Ochre fragments Animal skin?	Yes
SAM-AP 1878 B	OES fragments Tortoise bone fragment Non-human bone	No
SAM-AP 3026	2x non-human bone	No
SAM-AP 4292	1x pottery fragment	No
SAM-AP 4713	1x perforated OES fragment 1x non-human bone Stone flakes	No
SAM-AP 4720	3x stone pieces 1x snail shell	Yes
SAM-AP 4734	2x shells	No
SAM-AP 4824	3x stone tools Stones Non- human bone	No
SAM-AP 4825	1x string 1x shell	No
SAM-AP 4827	String	No
SAM-AP 4899	1x string	Yes

	1x bangle 2x copper bangle	
SAM-AP 4906 C	1x OES Pottery fragments Shell fragments	No
SAM-AP 4980	Non-human bone	No
SAM-AP 5075	1x string	Yes
SAM-AP 6031	1X string	Yes
SAM- AP 6260 A	Shell fragments, stones	No
SAM-AP 6272	Non-human teeth 1x stone flakes	Yes
SAM- AP 6314	Twine	Yes

Table B.2: Collection list of the grave goods from the Iziko-South African Museum which were not included in this study but were documented and included here as a reference guide.

Accession number	Details	Included in this study
SAM-AP 6140	1xbead Non-human bone Metal pins Sand and wood fragments 1x stone flake	No
SAM-AP 6141	Fragment of cloth Non-human bone 1x wood fragment	No
SAM-AP 6137	7x brass pins Metal pieces Fragments of wood	**No**
SAM-AP 6145	1x Glass fragment 27x beads Non-human bone	No
SAM-AP 6143	Fragment of metal and sand Animal hair Pin fragments	No
SAM-AP 6144	Fragment of cloth Metal pins	No
SAM-AP 6146	Fragment of cloth Metal pins	No
SAM-AP 4907	2x stones 3x slate stones 2xshells 2x pottery fragments	No
SAM-AP 6068	Non-human bone	No
SAM-AP 6039	2x stone tools OES fragments	No
SAM-AP 6048	12x Pottery fragments 5x OES pieces Shell 1xstone tool	No

	1x glass bottle fragment 6x tortoise bone	
SAM-AP 6040	3x stones Fragment of tortoise shell	No
SAM-AP 4950	Non-human bone String	No
SAM-AP 4831	2x shell fragment	No
SAM-AP 4832	1x shell fragment	No
SAM-AP 4833	1x string	No
SAM-AP 4829	4x bone fragments 14x shell fragments 1x snail shell	No
SAM-AP 4867	2x shells	No
SAM-AP 4884	1x glass fragment 5x shell fragment	No
SAM-AP 4826	1x string 1x button 4x bone fragment 4x stones	No
SAM-AP 4900	Non-human bone 2x shell	No
SAM-AP 4789	4x shell fragments	No
SAM-AP 4823	2x bones Shell fragments 3x stones	No
SAM-AP 4776	Non-human bone 2x stones 2x shell fragments	No
SAM-AP 4780	2x stones Non-human bone Wood fragments Shell fragments	No
SAM-AP 4779	1x shell	No
SAM-AP 4778	1x metal piece Shell and wood fragments Metal pins	No
SAM-AP 4775	4x slate fragments 1x shell fragments 8x wood fragments	No
SAM-AP 4781	1x metal pin	No
SAM-AP 4672	Metal fragments	No
SAM-AP 4782	4x metal pieces 4x shells 3x piece of wood fragments	No
SAM-AP 4784	Wood fragment	No
SAM- AP 4716	1x cutting stone 1x piece of ochre	No
SAM-AP 4727	6x animal sea shells	No
SAM-AP 4744	1x metal piece	No

	1x metal handle	
SAM-AP 4726	String Organic fibre	No
SAM-AP 4717	30x OES fragments	No
SAM-AP 4745 A & B	1x stone 3x shells	No
SAM-AP 4729	11 shell fragments String/twine Plant material	No
SAM-AP 4718	2x stone tools 1x charcoal fragments	No
SAM-AP 4735	Fragments of bone, stone, shell OES pieces	No
SAM-AP 4703	4x stone tools 1x engraved oval stone 5x pottery fragments Non-human bone 4x metal pieces 1x wood fragment 2x buttons	No
SAM-AP 4507	Metal bracelet	No
SAM-AP 4512	Metal bracelet Plant material Leather with buckle	No
SAM-AP 4518	2x metal earrings Pottery fragments	No
SAM-AP 82	Non-human bone Stone tools 1xshells	No
SAM-AP 1164	String	No

Appendix C: Iziko-South African Museum Pictures

Introduction

The following appendix documents the pictures taken of objects in the Iziko-Southern African Museum collection. The collection number is first listed, followed by the pictures of the associated material with that collection. Not all of the objects given here were used in this dissertation. Please see Appendix B for the details of which objects were used in this study. Caution is expressed here as, while these items were found in association with the burials, it is unclear whether these materials were intentionally placed in the burial and should be classified as grave goods. Certainly, some of the objects in the collection detail evidence of material that was a later addition to the burial.

SAM-AP 6147 (Lazarides 2014)



Fragments of seal teeth



Fragments of seal bones



Fragments of seal bones

SAM-AP 1131 (Lazarides 2014)



Stone tool

SAM-AP 1157 (Lazarides 2014)



Piece of wood

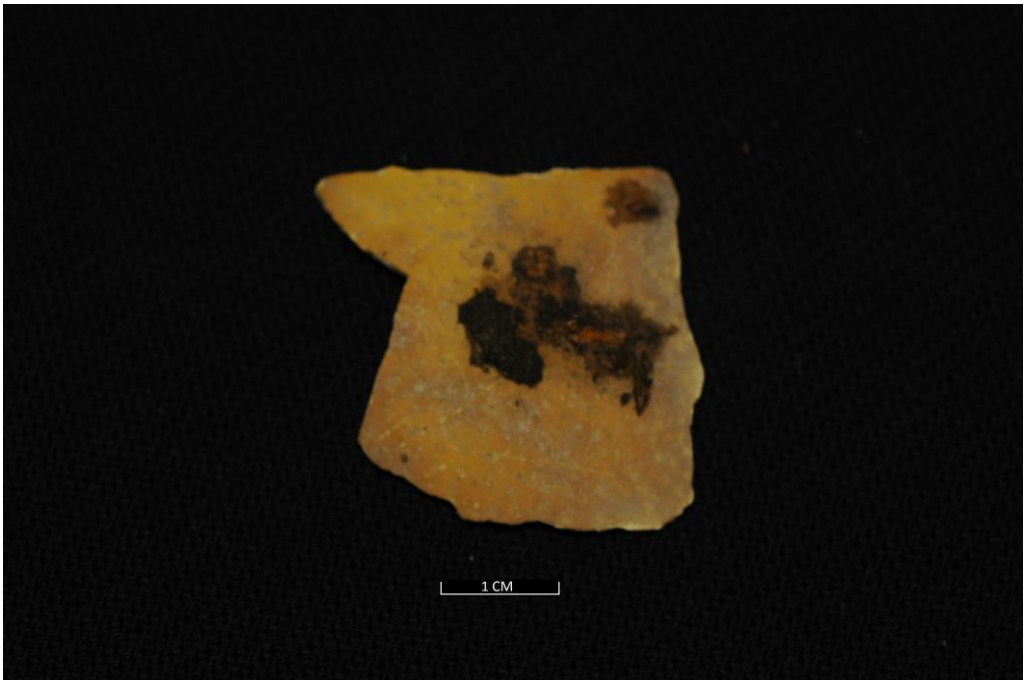


Piece of wood



Bone fragment

SAM-AP 1449 (Lazarides 2014)



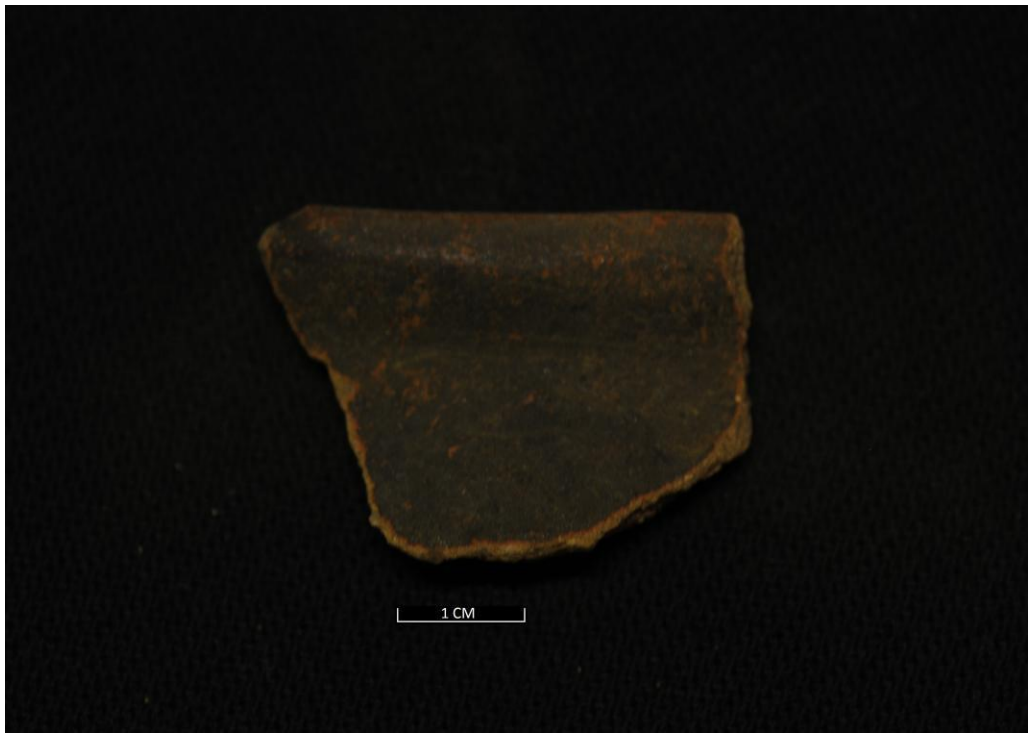
OES fragments



Stone tool



Pottery with ochre



Pottery



Ochre



Twine

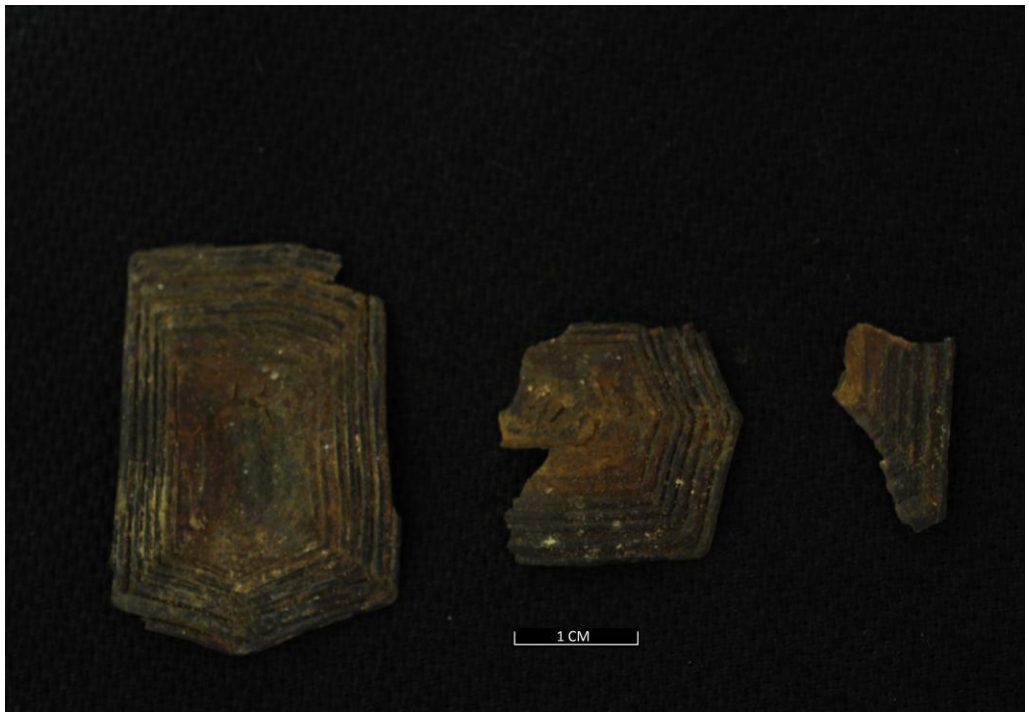


Possibly animal skin

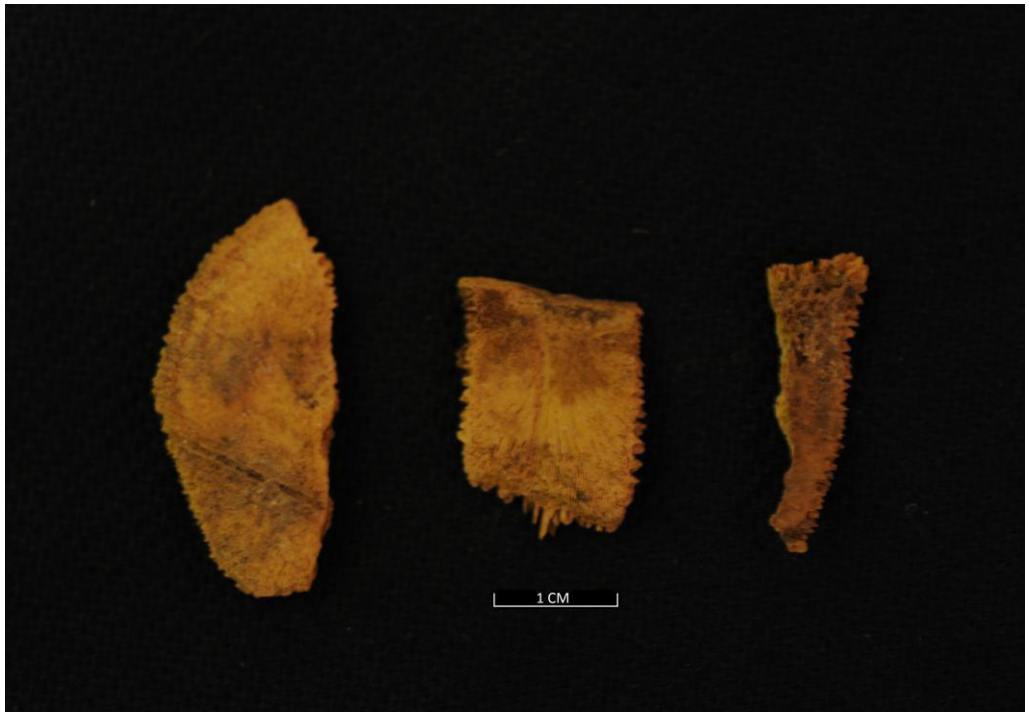


Bone fragments

SAM-AP 1878B (Lazarides 2014)



Tortoise shell fragments



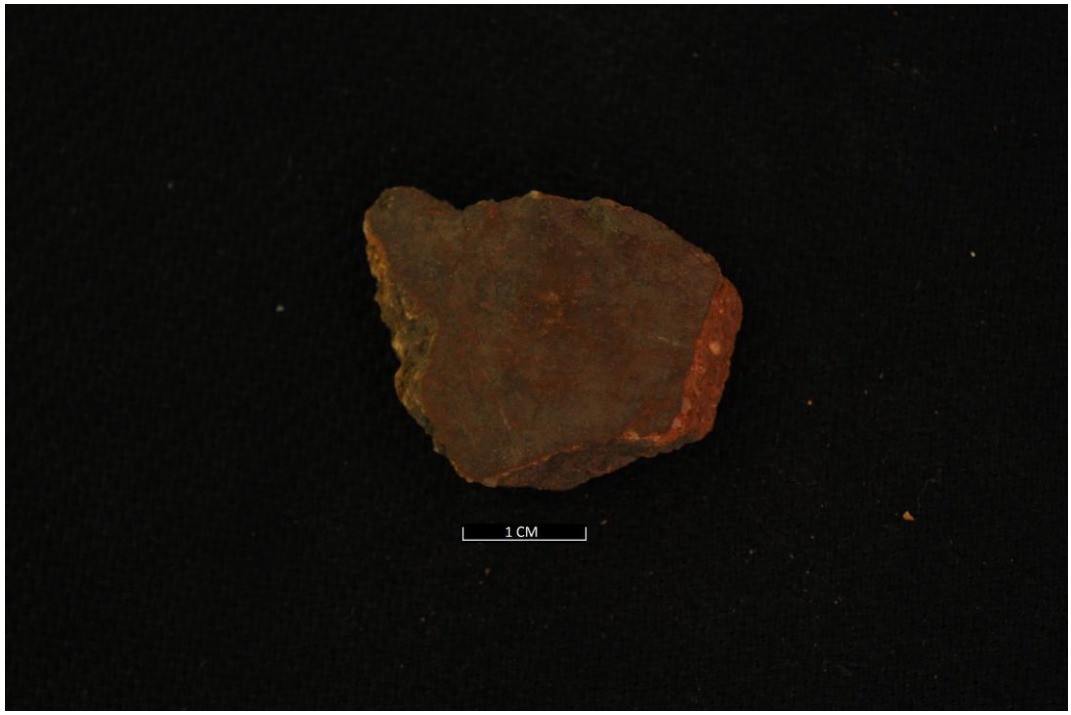
Tortoise bone fragments

SAM-AP 3026 (Lazarides 2014)



Non-human remains

SAM-AP 4292 (Lazarides 2014)



Potsherd

SAM-AP 4713 (Lazarides 2014)



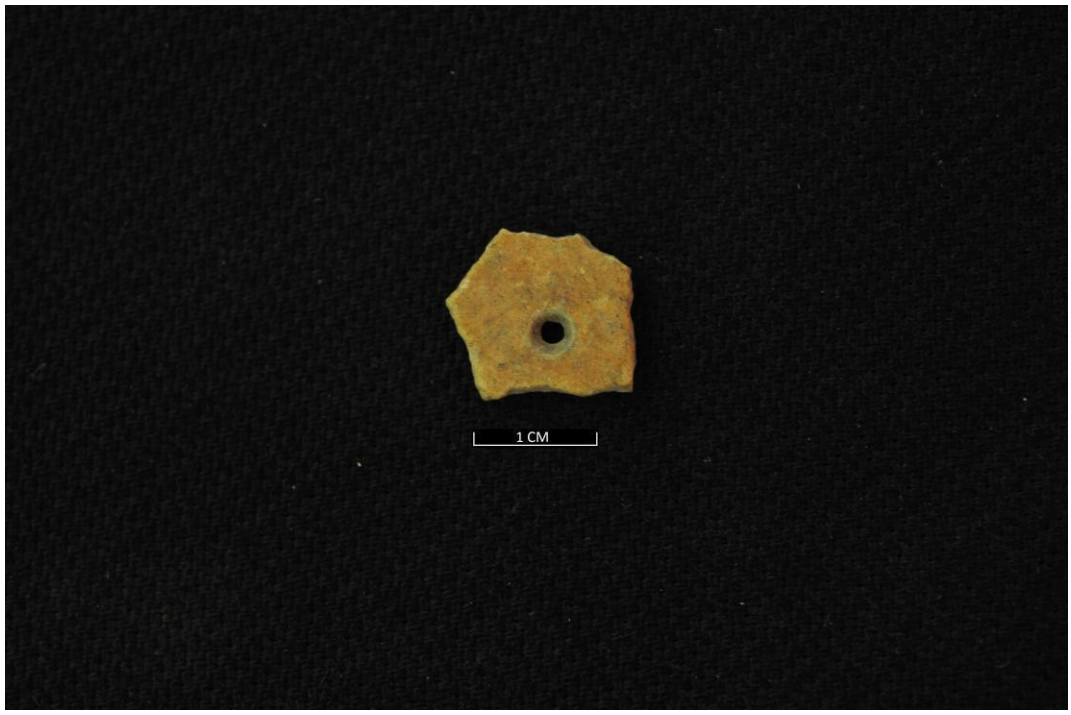
Quartz



Stones



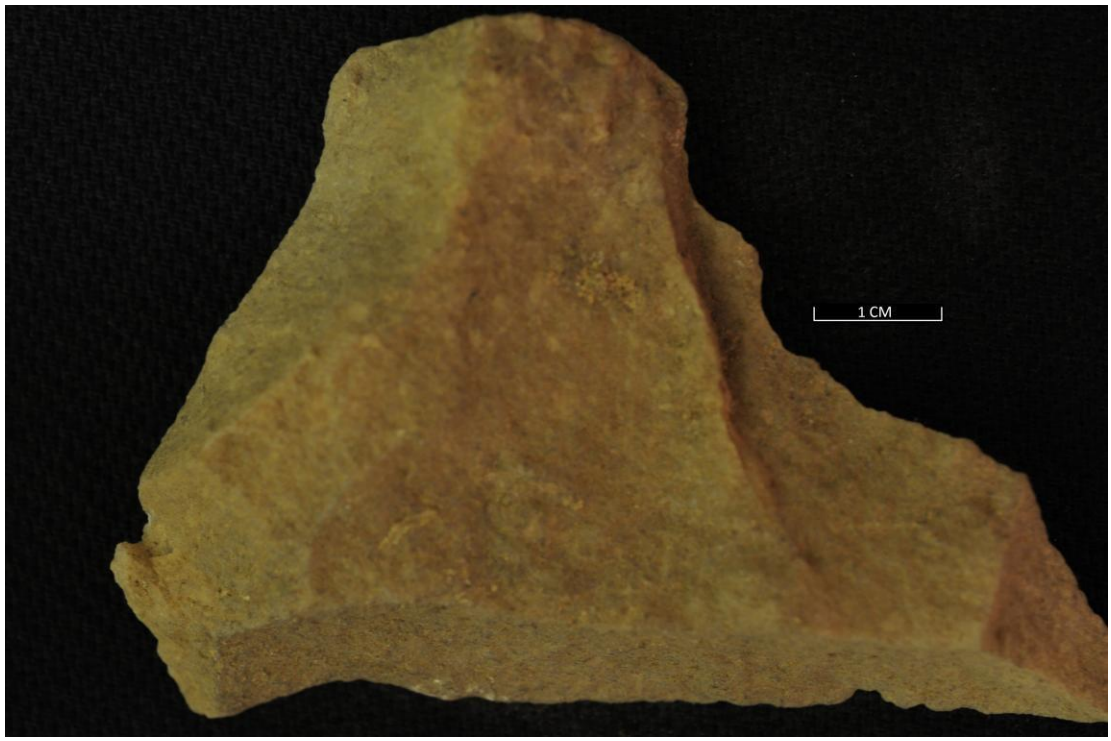
Stones



Perforated OES fragment



Non-human bone



Stone

SAM-AP 4720 (Lazarides 2014)



Snail shell

SAM-AP 4734 (Lazarides 2014)



Shells

SAM-AP 4824 (Lazarides 2014)



Stone



Stone

SAM-AP 4825ECP (Lazarides 2014)



Twine

SAM-AP 4827ECP (Lazarides 2014)

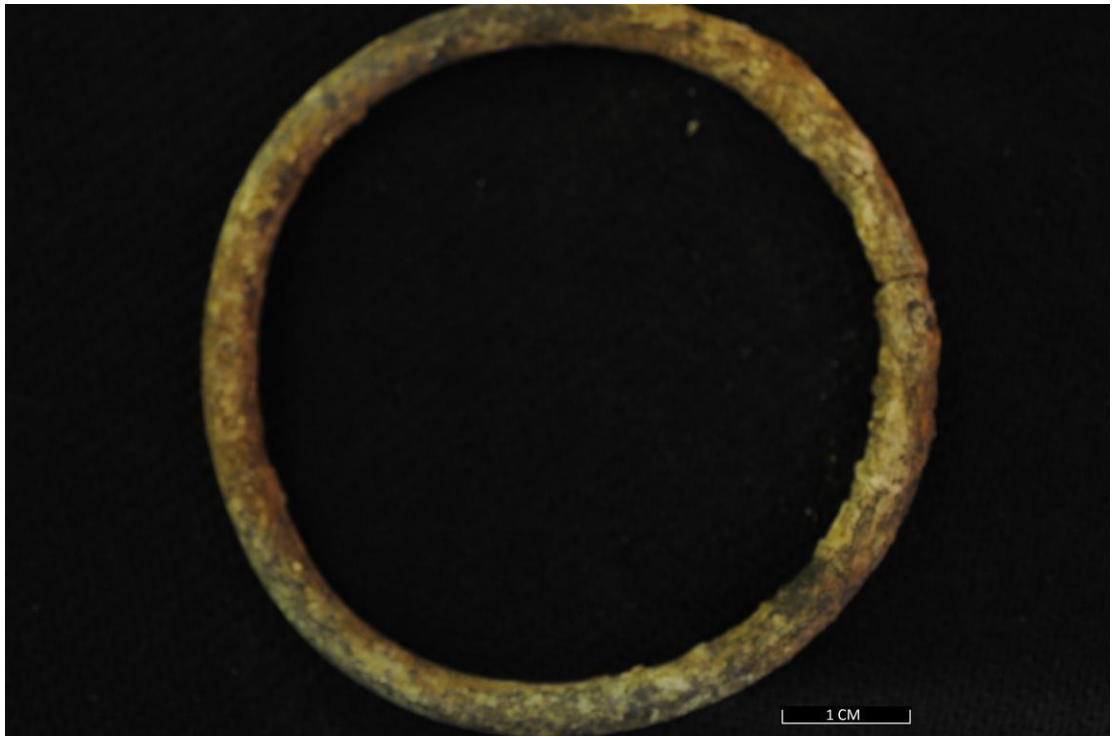


Twine

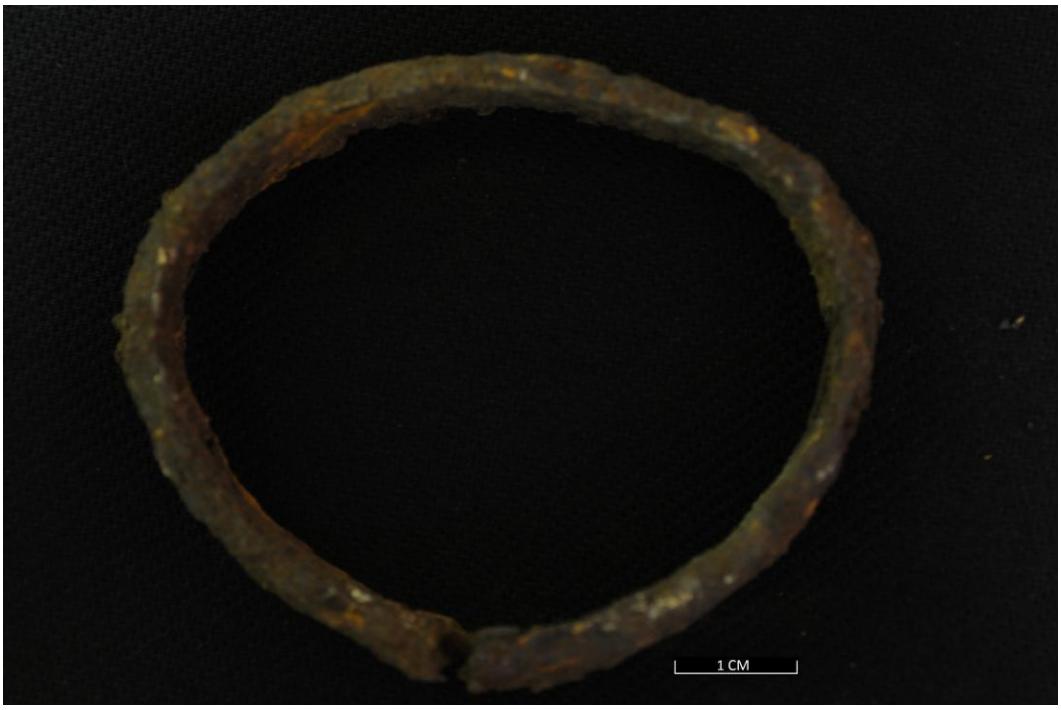
SAM-AP 4899 (Lazarides 2014)



Twine



Copper bracelet

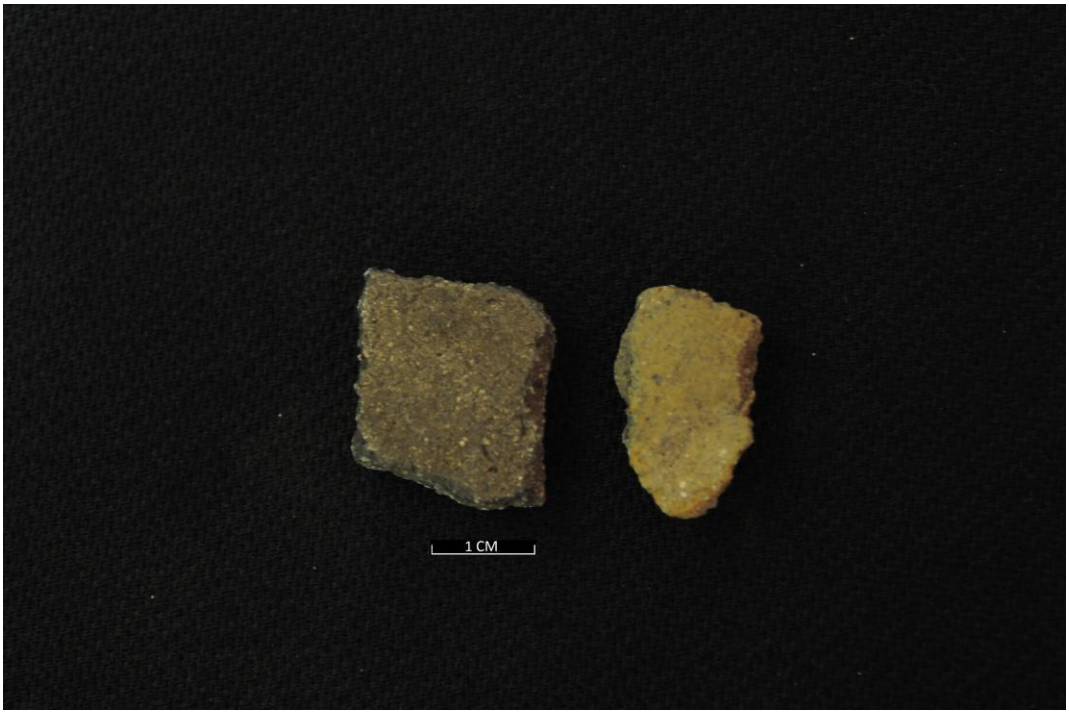


Copper bracelet, which must be a later addition to the burial.

SAM-AP 4906C (Lazarides 2014)



OES fragment

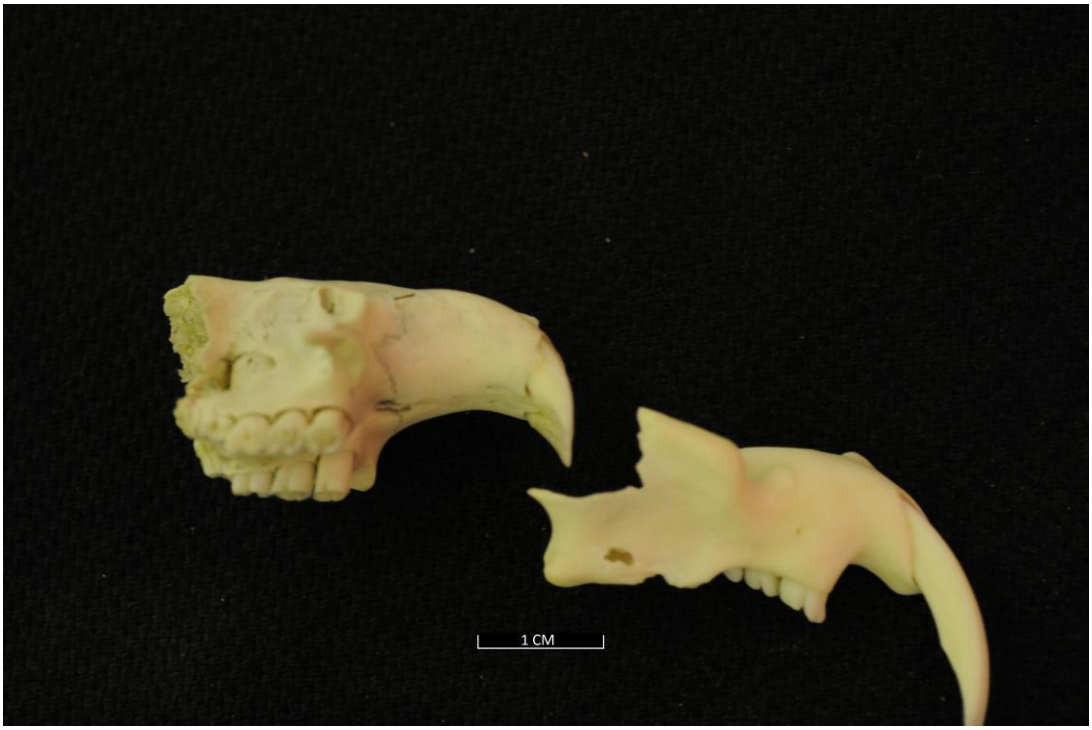


Pottery



Shell

SAM-AP 4980 (Lazarides 2014)



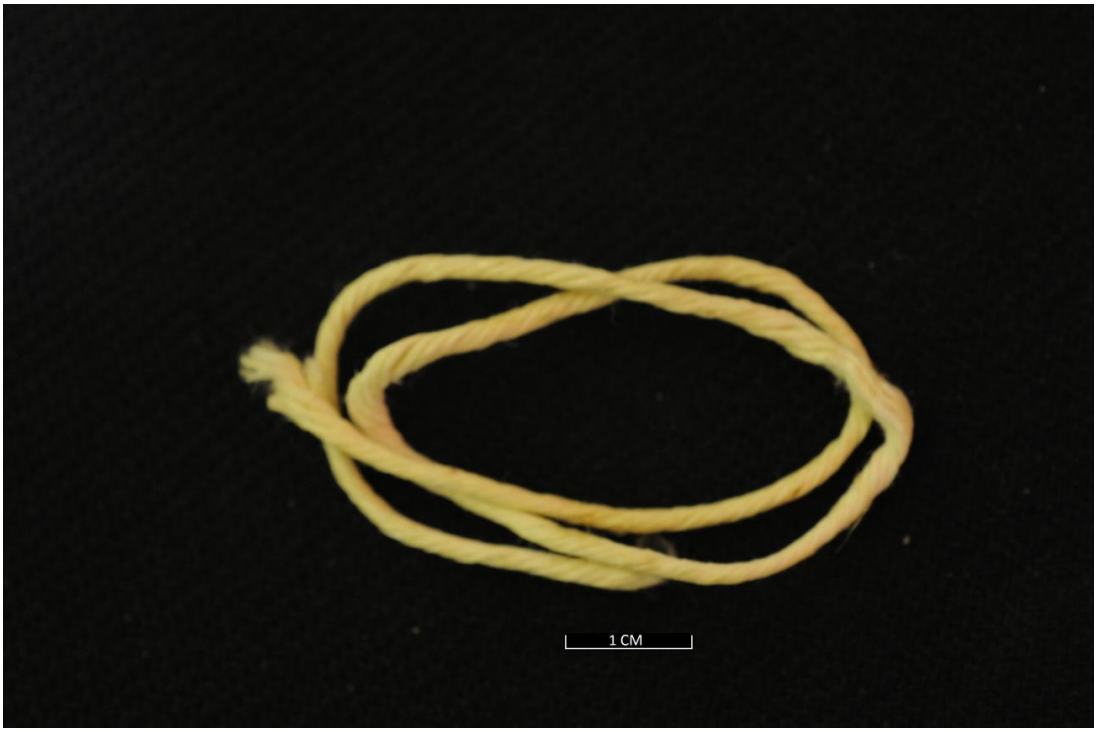
Non-human bone

SAM-AP 5075 (Lazarides 2014)



Looks more like modern string, as opposed to twine.

SAM-AP 6031 (Lazarides 2014)

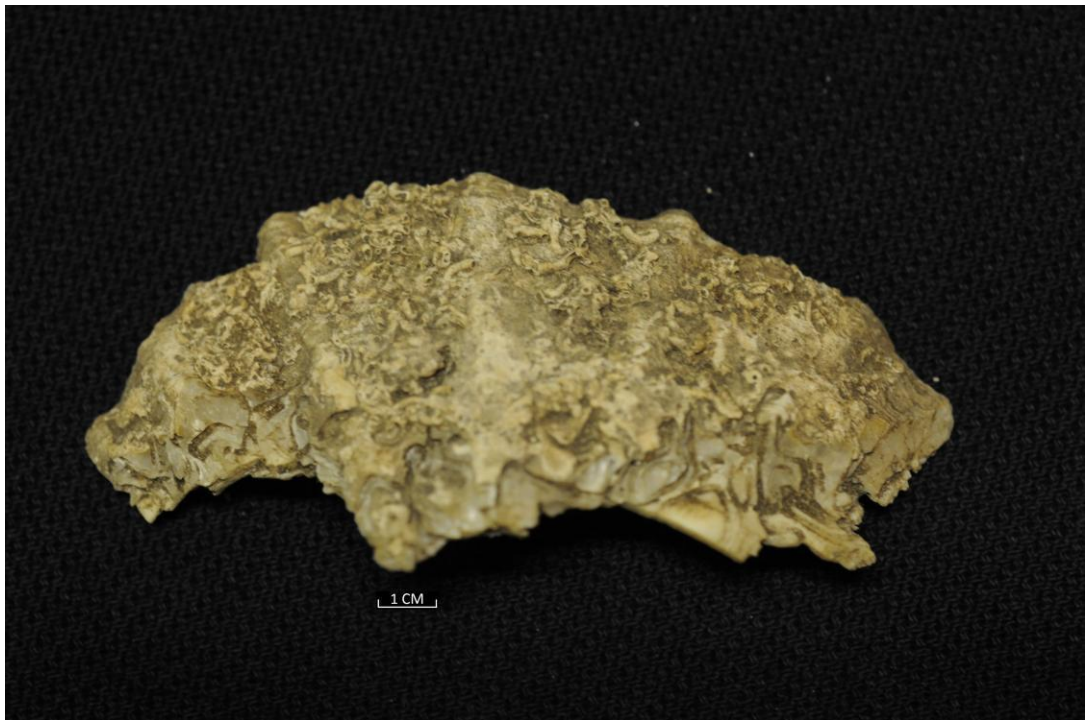


Looks more like modern string, as opposed to twine.

SAM-AP 6260ABC (Lazarides 2014)



Shells



Shell



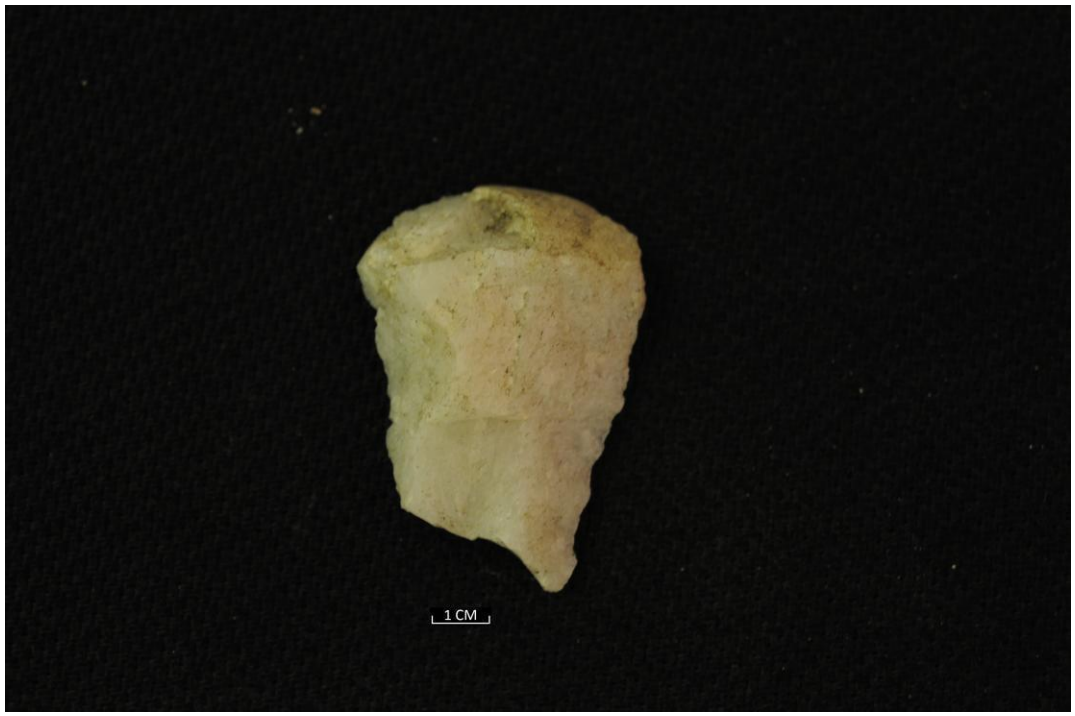
Bone



Shell



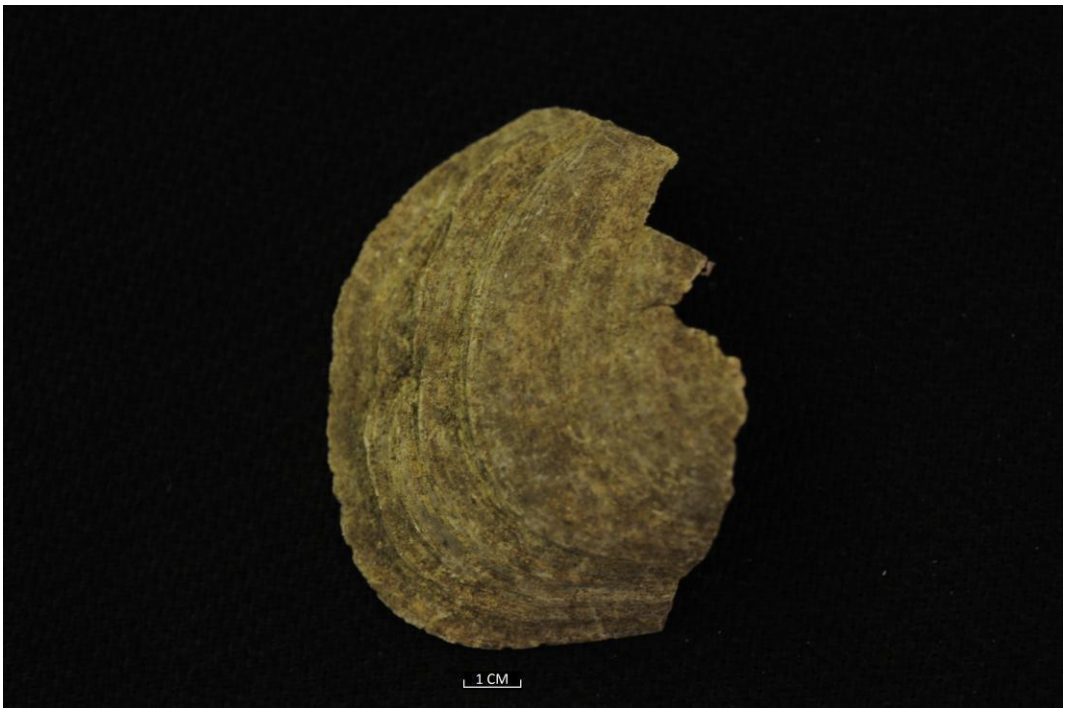
Shell



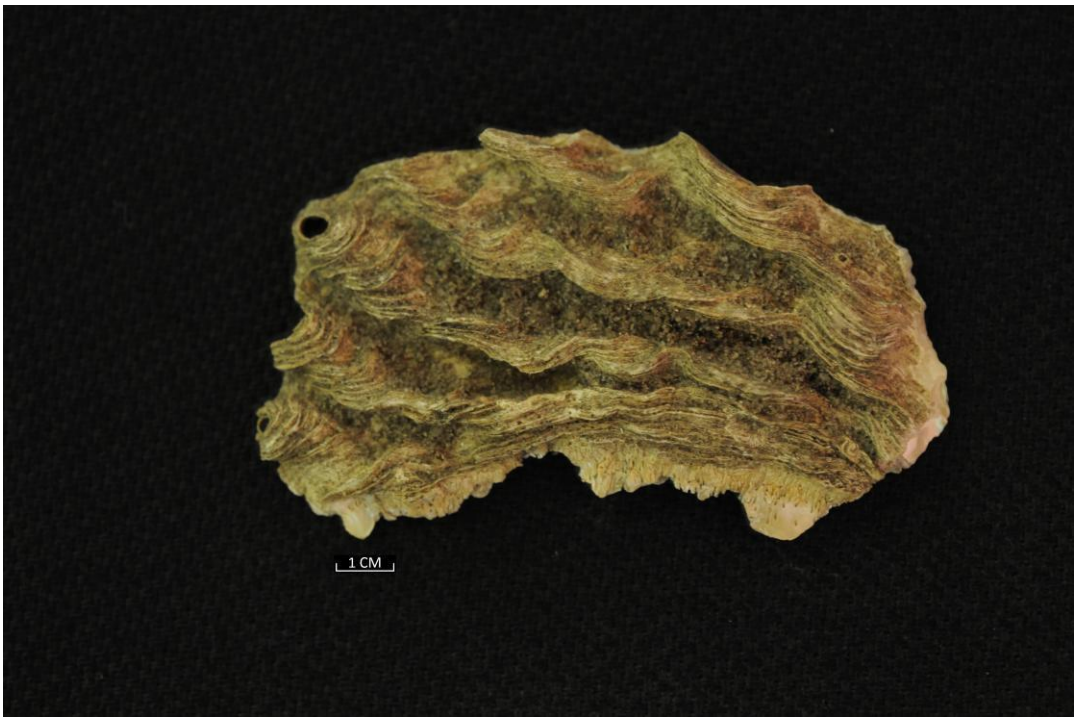
Quartz



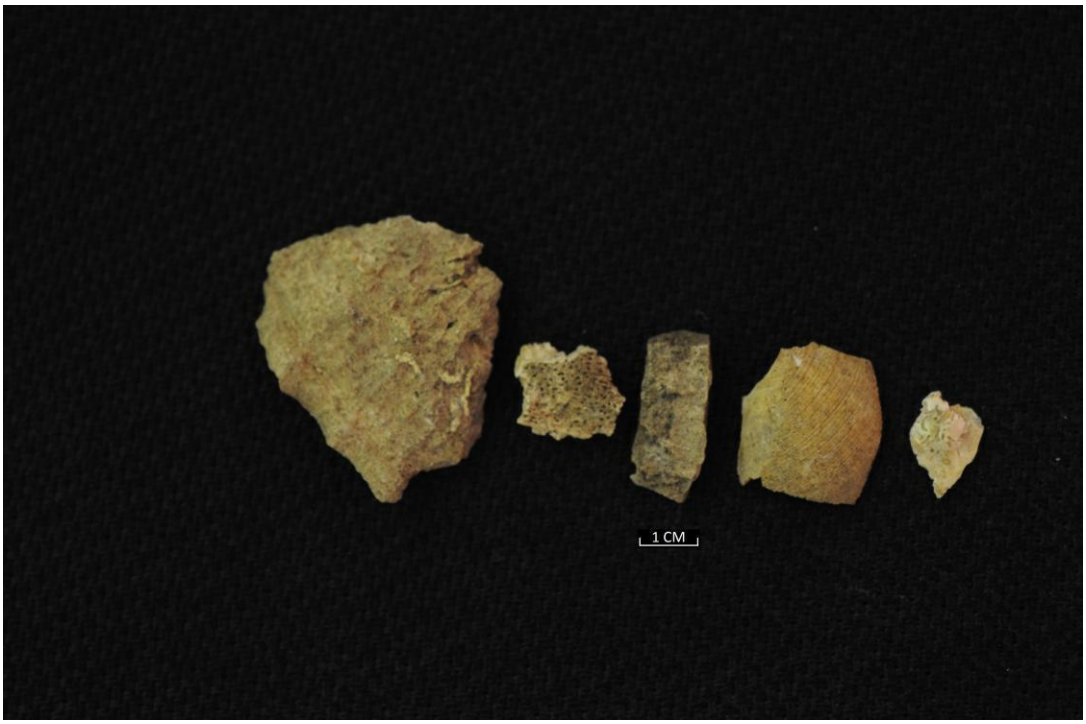
Shell



Shell

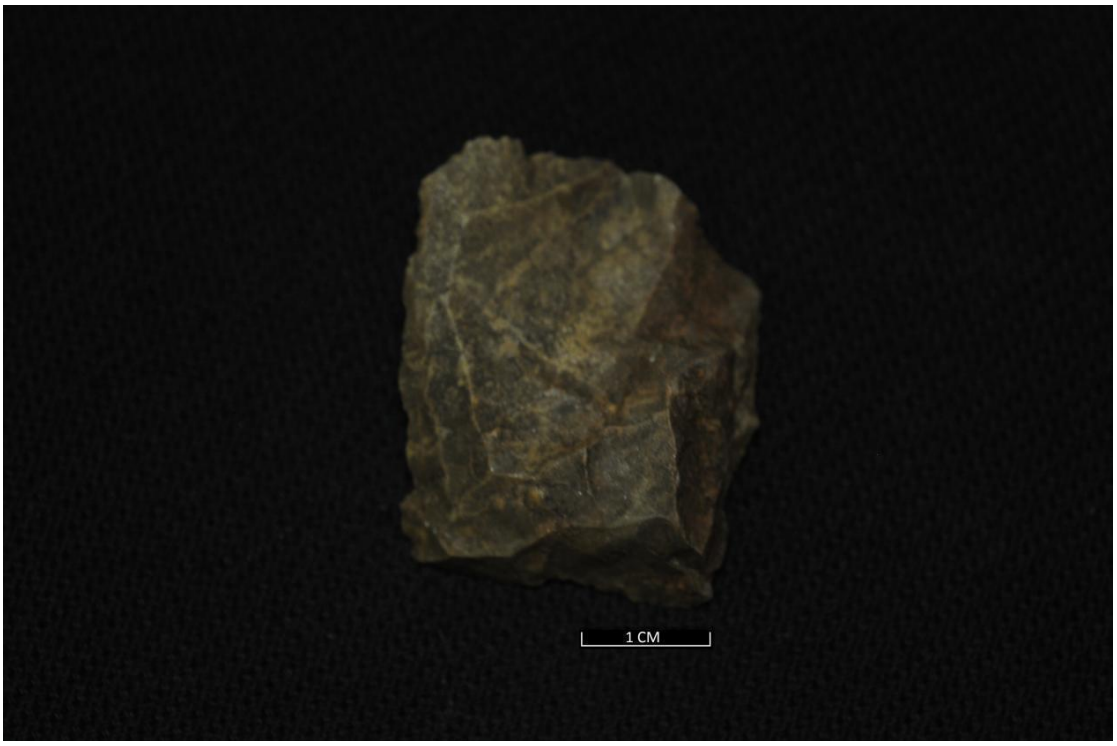


Shell



Shell

SAM-AP 6272 (Lazarides 2014)



Stone tool

SAM-AP 6314 (Lazarides 2014)



Twine

Appendix D: Coding

Introduction

This appendix lists the coding for the Bayesian models that were set up for the temporal analysis. The code for each model is not given- as the coding can be manipulated to enter the information for the dates as required- depending on sites or what pattern the model is being set up for.

Single phase sequential model set up for all 70 dates.

```
Plot()
{
Curve("ShCal13","ShCal13.14c");
Curve("Marine13","Marine13.14c");
Delta_R("LocalMarine",146,85);
Sequence()
{
Boundary("Start 1");
Phase("1")
{
Mix_Curves("Mix-1", "ShCal13", "LocalMarine", 77, 10);
R_Date("UCT378", 10860, 180);
Mix_Curves("Mix-2", "ShCal13", "LocalMarine", 80, 10);
R_Date("UCT374", 9750, 100);
Mix_Curves("Mix-3", "ShCal13", "LocalMarine", 65, 10);
R_Date("UCT375", 8000, 95);
Mix_Curves("Mix-4", "ShCal13", "LocalMarine", 93, 10);
R_Date("SAM4692", 6891, 37);
Mix_Curves("Mix-5", "ShCal13", "LocalMarine", 49, 10);
R_Date("SAM37", 6120, 70);
Mix_Curves("Mix-6", "ShCal13", "LocalMarine", 52, 10);
R_Date("SAM5068", 5680, 70);
Mix_Curves("Mix-7", "ShCal13", "LocalMarine", 29, 10);
R_Date("SAM6060", 4820, 90);
Mix_Curves("Mix-8", "ShCal13", "LocalMarine", 57, 10);
R_Date("UCT248", 4730, 95);
Mix_Curves("Mix-9", "ShCal13", "LocalMarine", 93, 10);
R_Date("UCT112", 4445, 50);
Mix_Curves("Mix-10", "ShCal13", "LocalMarine", 73, 10);
R_Date("SAM4793", 4110, 60);
Mix_Curves("Mix-11", "ShCal13", "LocalMarine", 37, 10);
R_Date("UCT433", 4050, 100);
Mix_Curves("Mix-12", "ShCal13", "Marine13", 80, 10);
R_Date("SAM1149", 3970, 50);
Mix_Curves("Mix-13", "ShCal13", "LocalMarine", 21, 10);
R_Date("SAM4637", 3880, 50);
Mix_Curves("Mix-14", "ShCal13", "LocalMarine", 0, 10);
R_Date("UCT334", 3850, 80);
Mix_Curves("Mix-15", "ShCal13", "LocalMarine", 60, 10);
R_Date("UCT373", 3835, 50);
```

```
Mix_Curves("Mix-16", "ShCal13", "LocalMarine", 17, 10);
R_Date("SAM5040", 3570, 60);
Mix_Curves("Mix-17", "ShCal13", "LocalMarine", 0, 10);
R_Date("UCT333", 3540, 60);
Mix_Curves("Mix-18", "ShCal13", "LocalMarine", 83, 10);
R_Date("UCT229", 3220, 55);
Mix_Curves("Mix-19", "ShCal13", "LocalMarine", 65, 10);
R_Date("UCT158", 3190, 60);
Mix_Curves("Mix-20", "ShCal13", "LocalMarine", 85, 10);
R_Date("SAM6051", 3190, 50);
Mix_Curves("Mix-21", "ShCal13", "LocalMarine", 89, 10);
R_Date("UCT162", 2880, 50);
Mix_Curves("Mix-22", "ShCal13", "LocalMarine", 105, 10);
R_Date("UCT588&589", 2870, 50);
Mix_Curves("Mix-23", "ShCal13", "LocalMarine", 76, 10);
R_Date("UCT222", 2830, 85);
Mix_Curves("Mix-24", "ShCal13", "LocalMarine", 87, 10);
R_Date("SAM6054a", 2780, 45);
Mix_Curves("Mix-25", "ShCal13", "LocalMarine", 93, 10);
R_Date("SAM4203b", 2760, 50);
Mix_Curves("Mix-26", "ShCal13", "LocalMarine", 30, 10);
R_Date("UCT596", 2690, 40);
Mix_Curves("Mix-27", "ShCal13", "LocalMarine", 86, 10);
R_Date("UCT427", 2670, 80);
Mix_Curves("Mix-28", "ShCal13", "LocalMarine", 69, 10);
R_Date("SAM5095", 2660, 70);
Mix_Curves("Mix-29", "ShCal13", "LocalMarine", 100, 10);
R_Date("SAM4203a", 2590, 50);
Mix_Curves("Mix-30", "ShCal13", "LocalMarine", 51, 10);
R_Date("UCT587", 2580, 40);
Mix_Curves("Mix-31", "ShCal13", "LocalMarine", 88, 10);
R_Date("SAM6031", 2560, 50);
Mix_Curves("Mix-32", "ShCal13", "LocalMarine", 100, 10);
R_Date("SAM5075", 2530, 60);
Mix_Curves("Mix-33", "ShCal13", "LocalMarine", 50, 10);
R_Date("SAM6054b", 2530, 60);
Mix_Curves("Mix-34", "ShCal13", "LocalMarine", 75, 10);
R_Date("SAM6348a", 2490, 50);
Mix_Curves("Mix-35", "ShCal13", "LocalMarine", 68, 10);
R_Date("SAM6017", 2490, 50);
Mix_Curves("Mix-36", "ShCal13", "LocalMarine", 79, 10);
R_Date("Burial3", 2470, 49);
Mix_Curves("Mix-37", "ShCal13", "LocalMarine", 56, 10);
R_Date("UCT591", 2460, 40);
Mix_Curves("Mix-38", "ShCal13", "LocalMarine", 57, 10);
R_Date("SAM6348b", 2460, 50);
Mix_Curves("Mix-39", "ShCal13", "LocalMarine", 74, 10);
R_Date("SAM6317", 2445, 50);
Mix_Curves("Mix-40", "ShCal13", "LocalMarine", 57, 10);
R_Date("SAM4899", 2440, 60);
Mix_Curves("Mix-41", "ShCal13", "LocalMarine", 85, 10);
```

```
R_Date("Burial5", 2420, 25);
Mix_Curves("Mix-42", "ShCal13", "LocalMarine", 62, 10);
R_Date("SAM1157", 2420, 60);
Mix_Curves("Mix-43", "ShCal13", "LocalMarine", 61, 10);
R_Date("UCT224", 2400, 100);
Mix_Curves("Mix-44", "ShCal13", "LocalMarine", 81, 10);
R_Date("SAM6023", 2355, 85);
Mix_Curves("Mix-45", "ShCal13", "LocalMarine", 76, 10);
R_Date("Burial4", 2340, 30);
Mix_Curves("Mix-46", "ShCal13", "LocalMarine", 69, 10);
R_Date("UCT169", 2320, 50);
Mix_Curves("Mix-47", "ShCal13", "LocalMarine", 71, 10);
R_Date("Burial1", 2270, 40);
Mix_Curves("Mix-48", "ShCal13", "LocalMarine", 38, 10);
R_Date("UCT595", 2250, 40);
Mix_Curves("Mix-49", "ShCal13", "LocalMarine", 20, 10);
R_Date("SAM1449", 2230, 100);
Mix_Curves("Mix-50", "ShCal13", "LocalMarine", 80, 10);
R_Date("SAM4304a", 2220, 50);
Mix_Curves("Mix-51", "ShCal13", "LocalMarine", 76, 10);
R_Date("SAM4942", 2220, 45);
Mix_Curves("Mix-52", "ShCal13", "LocalMarine", 85, 10);
R_Date("UCT317", 2220, 40);
Mix_Curves("Mix-53", "ShCal13", "LocalMarine", 68, 10);
R_Date("SAM4306", 2210, 50);
Mix_Curves("Mix-54", "ShCal13", "LocalMarine", 82, 10);
R_Date("UCT134", 2210, 40);
Mix_Curves("Mix-55", "ShCal13", "LocalMarine", 82, 10);
R_Date("SAM4720", 2195, 80);
Mix_Curves("Mix-56", "ShCal13", "LocalMarine", 86, 10);
R_Date("SAM4308", 2170, 60);
Mix_Curves("Mix-57", "ShCal13", "LocalMarine", 18, 10);
R_Date("UCT394", 2150, 70);
Mix_Curves("Mix-58", "ShCal13", "LocalMarine", 2, 10);
R_Date("ElandCave", 2145, 50);
Mix_Curves("Mix-59", "ShCal13", "LocalMarine", 49, 10);
R_Date("SAM4813", 2140, 45);
Mix_Curves("Mix-60", "ShCal13", "LocalMarine", 25, 10);
R_Date("UCT385", 2130, 65);
Mix_Curves("Mix-61", "ShCal13", "LocalMarine", 30, 10);
R_Date("UCT397", 2130, 45);
Mix_Curves("Mix-62", "ShCal13", "LocalMarine", 65, 10);
R_Date("SAM4636", 2130, 45);
Mix_Curves("Mix-63", "ShCal13", "LocalMarine", 7, 10);
R_Date("UCT391", 2110, 70);
Mix_Curves("Mix-64", "ShCal13", "LocalMarine", 7, 10);
R_Date("UCT331", 2100, 70);
Mix_Curves("Mix-65", "ShCal13", "LocalMarine", 77, 10);
R_Date("SAM4305", 2100, 45);
Mix_Curves("Mix-66", "ShCal13", "LocalMarine", 15, 10);
R_Date("UCT396", 2090, 60);
```

```
Mix_Curves("Mix-67", "ShCal13", "LocalMarine", 10, 10);
R_Date("UCT387", 2055, 40);
Mix_Curves("Mix-68", "ShCal13", "LocalMarine", 13, 10);
R_Date("SAM5041", 2010, 50);
Mix_Curves("Mix-69", "ShCal13", "LocalMarine", 39, 10);
R_Date("SAM6041b", 2010, 45);
Mix_Curves("Mix-70", "ShCal13", "LocalMarine", 26, 10);
R_Date("UCT386", 2000, 50);
};
Boundary("End 1");
};
};
```

Coding used to combine dates- this model was specifically set up for Faraoskop.

```
Plot()
{
 Curve("ShCal13","ShCal13.14c");
 Curve("Marine13","Marine13.14c");
 Delta_R("LocalMarine",146,85);
 Combine()
 {
  Mix_Curves("Mix-1", "ShCal13", "LocalMarine", 18, 10);
  R_Date("UCT394", 2150, 70);
  Mix_Curves("Mix-2", "ShCal13", "LocalMarine", 25, 10);
  R_Date("UCT385", 2130, 65);
  Mix_Curves("Mix-3", "ShCal13", "LocalMarine", 30, 10);
  R_Date("UCT397", 2130, 45);
  Mix_Curves("Mix-4", "ShCal13", "LocalMarine", 7, 10);
  R_Date("UCT391", 2110, 70);
  Mix_Curves("Mix-5", "ShCal13", "LocalMarine", 15, 10);
  R_Date("UCT396", 2090, 60);
  Mix_Curves("Mix-6", "ShCal13", "LocalMarine", 10, 10);
  R_Date("UCT387", 2055, 40);
  Mix_Curves("Mix-7", "ShCal13", "LocalMarine", 26, 10);
  R_Date("UCT386", 2000, 50);
 };
};
```

Coding used with the Span() function. This model was set up for the Diaz Street Midden Burials.

```
Plot()
 {
  Curve("ShCal13","ShCal13.14c");
  Curve("Marine13","Marine13.14c");
  Delta_R("LocalMarine",146,85);
  Sequence()
  {
   Boundary("Start 1");
   Phase("1")
   {
    Mix_Curves("DSM", "ShCal13", "LocalMarine", 79, 10);
    R_Date("Burial3", 2470, 49);
    Mix_Curves("DSM", "ShCal13", "LocalMarine", 85, 10);
    R_Date("Burial5", 2420, 25);
    Mix_Curves("DSM", "ShCal13", "LocalMarine", 76, 10);
    R_Date("Burial4", 2340, 30);
    Mix_Curves("DSM", "ShCal13", "LocalMarine", 71, 10);
    R_Date("Burial1", 2270, 40);
   };
   Span("DSM");
   Boundary("End 1");
  };
 };
```

Appendix E: Co-ordinates of the burials used in this study

Table E.1: This table lists the co-ordinates for the burial locations. It is noted which sites had specific co-ordinates and which sites only approximate co-ordinates could be found for.

	Longitude			Latitude				
Burial reference	**Degrees**	**Minutes**	**Seconds**	**Degrees**	**Minutes**	**Seconds**	**Specific co-ordinates**	**Approximate co-ordinates**
UCT 434	17	56	10	32	43	15	✓	
UCT 222	17	58	9	32	43	22		✓
Faraoskop shelter	18	36	49	32	7	31.6	✓	
UCT 331	18	58	39	32	8	54	✓	
SAM-AP 1449	18	53	27	32	10	43	✓	
UCT 333	19	8	57	32	7	0	✓	
SAM-AP 4793	17	56	2	33	1	55	✓	
SAM-AP 4899	17	56	55	33	0	30	✓	
SAM-AP 5095	17	56	53	33	0	35	✓	
SAM-AP 6031	18	3	56	33	10	38	✓	
UCT 435	18	2	45	33	2	40	✓	
UCT 162	18	9	15	33	0	55	✓	
UCT 112	18	22	59	33	22	59		✓
UCT 113	18	22	59	33	22	59		✓
SAM-AP 4803	18	22	52	33	23	5		✓
SAM-AP 5068	18	22	52	33	23	5		✓
SAM-AP 6054A, B and C	18	18	0	33	28	0	✓	
SAM-AP 4813	18	19	38	33	34	10		✓
SAM-AP 5040	18	19	38	33	34	10		✓
SAM-AP 37	18	29	20	33	44	55		✓

SAM-AP 1149	18	29	20	33	44	55		✓
SAM-AP 1157	18	29	20	33	44	55		✓
SAM-AP 4636	18	27	42	33	48	1	✓	
SAM-AP 4920	18	30	12	33	43	22	✓	
SAM-AP 4970	18	23	10	33	55	1	✓	
SAM-AP 5041	18	27	9	33	43	35		✓
SAM-AP 6017	18	26	30	33	43	45	✓	
UCT 229	18	27	15	33	43	9		✓
SAM-AP 6023	18	27	15	33	43	9		✓
SAM-AP 6041B	18	28	59	33	53	26	✓	
SAM-AP 5075	18	22	27	34	8	43	✓	
UCT 295	18	26	53	34	7	40	✓	
SAM-AP 4203B	18	19	45	34	8	25		✓
SAM-AP 4942	18	19	45	34	8	25		✓
SAM-AP 4720	18	19	45	34	8	25		✓
SAM-AP 4303	18	23	41	34	5	41		✓
SAM-AP 4304A	18	23	41	34	5	41		✓
SAM-AP 4305	18	23	41	34	5	41		✓
SAM-AP 4306	18	23	41	34	5	41		✓
SAM-AP 4308	18	23	41	34	5	41		✓
UCT 248	18	23	41	34	5	41		✓
SIM 1	18	27	10	34	12	10	✓	
SAM-AP 4637	18	52	22	34	9	5	✓	
UCT 158	18	20	34	34	0	35		✓
UCT 159	18	20	34	34	0	35		✓
SAM-AP 6088	18	51	36	34	23	10	✓	
UCT 363	18	13	59	31	49	0	✓	

UCT 224	18	21	1	32	18	48	✓	
Elands Bay cave	18	21	1	32	18	48	✓	
UCT 427	18	21	1	32	18	48	✓	
UCT 433	18	22	35	32	19	40	✓	
UCT 334	18	51	30	32	11	40	✓	
SAM-AP 4692	18	24	24	34	7	6	✓	
SAM-AP 6272	18	25	21	33	55	26		✓
UCT 596	18	20	48	32	18	42	✓	
SAM-AP 4202	18	19	45	34	8	25		✓
SAM-AP 4203A	18	19	45	34	8	25		✓
UCT 587	18	21	1	32	18	48		✓
SAM-AP 5070	18	28	25	33	41	52	✓	
UCT 591	22	58	22	34	5	2	✓	
UCT 169	18	21	0	34	1	59	✓	
SAM-AP 4300	18	23	41	34	5	41		✓
SAM-AP 4299	18	23	41	34	5	41		✓
UCT 595	17	52	95	32	52	56	✓	
SAM-AP 4301	18	23	41	34	5	41		✓
UCT 134	18	20	34	34	0	35		✓
SAM-AP 1142	18	39	54	34	14	35	✓	
UCT 317	19	28	0	34	34	0	✓	
UCT 588& 589	18	25	18	34	11	9	✓	
UCT 605	22	48	17	34	1	17	✓	
UCT 616	18	18	27	32	7	47	✓	
UCT 586	17	53	27	32	58	8	✓	
DR 343/9	18	30	0	33	52	0		✓
WC11/0055/11	18	30	0	33	52	0		✓

WC18/383/10	20	7	0	33	46	59	✓	
Byneskranskop Burials	19	27	57	34	35	0	✓	
SAM-AP 6348A and B	18	27	15	33	43	9	✓	
SAM-AP 6314	18	18	29	32	8	9	✓	
UCT 372	21	55	31	34	10	12	✓	
Eland Cave 1&2	19	1	19	32	3	5	✓	
Burial 1, 3, 4 and 5 DSM	17	56	22.5	33	0	33.5	✓	