THE WINDOW ON THE (SOUTH)WEST

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THE WINDOW ON THE (SOUTH)WEST: THE SOUTHWEST IBERIAN BRONZE AGE FROM A LONG-TERM PERSPECTIVE (CA. 3500 - 800 BCE)

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ABSTRACT

This study combines long-term settlement data with short-term excavation data to explore the conditions that led late prehistoric communities in Iberia's southwest to aggregate during the Late Bronze Age [LBA]. This long-term approach involves the application of geographic information systems [GIS] to identify settlement patterns in the Central Alentejo from the Late Neolithic [LN]/Chalcolithic to the Late Bronze Age (ca. 3500 – 800 BCE). In the Serra d'Ossa microregion of the southwest there are 176 sites that date to the Neolithic/Chalcolithic, only two that date to the EBA/MBA, and 27 that date to the LBA. This shift is directly related to the Chalcolithic "collapse" that occurred in the mid/late third millennium BCE, influenced by both sociocultural and environmental factors.

The LBA of the southwest has long been defined by the emergence of a new culture associated with a concern for defensiveness and warriorship, represented on stone stelae by warrior iconography, and by the emergence of large-fortified upland sites that appear during this period. A distinct lack of small-scale settlement data has previously led to insufficient interpretations and characterizations of the period. In turn, this thesis incorporates short-term data from excavation at the large-fortified upland site of Castelo Velho da Serra d'Ossa, the one excavated example of such a site in the Serra d'Ossa microregion and one of the few excavated LBA sites in the wider southwest. The short-term excavation data are discussed in the context of the long-term settlement patterns to better characterize the LBA of the Iberian southwest, a period previously underrepresented in the region. The central focus of study is to investigate the emergence of these settlements (up to 15 ha in size) and the communities that inhabited them; considering the processes underpinning place-making and aggregation both locally and within its broader prehistoric context.

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LIST OF ABBREVIATIONS

aDNA – Ancient DNA

ASTER GDEM2 – Advanced Spaceborn Thermal Emission and Reflection Radiometer Global Digital Elevation Model Version 2

BCE – Before Common Era

BP – Before Present

Cal – Calibrated

CE – Common Era

CNS – Código Nacional de Sítio (*National Site Code*)

CRM – Cultural Resource Management

CVO – Castelo Velho da Serra d'Ossa (site)

DEM – Digital Elevation Map

DGPC – Direção-Geral do Património Cultural (*Directorate-General for Cultural Heritage*)

GIS – Geographic Information System

EBA – Early Bronze Age

EPSG – European Petroleum Survey Group

IA – Iron Age

KY – Kiloyear

LBA – Late Bronze Age

LN – Late Neolithic

LNEG - Laboratório Nacional de Energia e Geologia, I.P. (*National Laboratory of Energy and Geology, I.P.)*

MASL – Metres Above Sea Level

MBA – Middle Bronze Age

SW – Southwest

UTM – Universal Transverse Mercator

VNSP – Vila Nova de São Pedro (site)

WGS – World Geodetic System

DECLARATION OF ACADEMIC ACHIEVEMENT

The following is a declaration that the content of the research in this document has been completed by Bianca Viseu and recognizes all contributions and recommendations of Dr. Tristan Carter, Dr. Aubrey Cannon, Dr. Katina Lillios, and Rui Mataloto.

CHAPTER 1: INTRODUCTION

1.1 Introduction

The communities of the Late Bronze Age (ca. 1200 – 800/700 BCE) in the Central Alentejo of Iberia situated themselves at the highest peaks in the landscape and fortified their sites. Alas, little is known about the period, save for decontextualized special finds such as gold jewelry and stone stelae depicting "warriors" and their associated accoutrements, found across the wider southwest Iberian Peninsula. Extensive survey of the region conducted in the late 20th and early 21st centuries revealed numerous sites dating from the Neolithic to the Roman period. While survey projects have yielded invaluable information on the region during the LBA, these have often led to excavations and research shroud in dated interpretations, postulating chiefdom-type social organization. Although intra-site analyses can generate significant amounts of data, it is also important to consider a site's wider chronological context in order to better understand how and why communities formed and sites persisted throughout late prehistory.

There are 176 known Neolithic/Chalcolithic habitations in the Serra d'Ossa microregion of southwest Iberia, an area that is approximately 2000 km^2. By the Late Bronze Age [LBA] there were only 27. The start of the LBA in southwest Iberia coincides with the collapse of palatial organization in the eastern Mediterranean, encompassing sites such as Mycenae and Thebes, which experienced a political and economic breakdown after 1200 BCE (Broodbank, 2013, p. 449). It is during this period when western Mediterranean communities constructed large, fortified hilltop settlements (Mataloto, 2012; Soares 2005). A rich warrior iconography (on stone stelae) appears at the same time in the wider southwest, with some researchers suggesting the emergence of a political order possibly based on inter-community conflict, with stelae marking newly defined tribal or chiefdom-type territories based around large-fortified upland

sites (Castro, 1995; Díaz-Guardamino, 2014; Domingo, 1993; Senna-Martinez, 1995; Serra, 2014). While this LN/Chalcolithic to LBA settlement shift has long been acknowledged, the process has never been formally detailed or interrogated (Calado, 1993). This thesis aims to contribute toward this end.

Focusing on a period of 2700 years, from the Late Neolithic/Chalcolithic to the Late Bronze Age (ca. 3500 – 800 BCE), it becomes apparent that certain models of settlement organization and site placement persisted while others disappeared. Throughout the LN/Chalcolithic, the construction of fortified hilltop sites and more recently discovered extensive ditched enclosures emerged. During the middle to end of the Chalcolithic, there was a brief but significant appearance of the Bell Beaker phenomenon and a reoccupation of some Chalcolithic sites. In the Early and Middle Bronze Age [EBA/MBA], there was a dispersal of populations and a change in settlement types; these periods are characterized by the ephemeral character of habitations, located primarily in the lowlands. The Late Bronze Age marks a shift to apparent aggregations of populations at comparably large sites, located at the highest peaks of hill and mountain ranges across the southwest.

In order to shine light upon the LBA of the Iberian southwest, this thesis explores the emergence of large, fortified Late Bronze Age hilltop settlements (up to 15 hectares in size) in the Central Alentejo and the communities that inhabited them by examining intra-site data of one such site, Castelo Velho da Serra d'Ossa, and considering and synthesizing long-term settlement data from its microregional and regional context. In turn, this thesis takes a long-term approach to contextualize the LBA by identifying settlement patterns in the region from the LN/Chalcolithic to the LBA. Rather than isolating this period, this research speculates that an

understanding of what came before, encompassing social organization, environmental conditions, and settlement placement, will assist in better understanding the period in question.

This thesis argues that a shift back to fortified settlements, though now located at the highest peaks in the region, should be interpreted as following a broadly regional southwest Iberian practice. This also encompasses a concern with defence and the symbolic celebration of warriorship and ancestral or hero figures (represented on stone stelae), thus reflecting changes in social structure – rather than a purely ecologically driven reconfiguration of settlement types, aligning with a shift to pastoralism, for example. However, this thesis also argues that, as evidenced by previous chronological periods, such changes in social structures were not necessarily linear, with these larger settlements representing a move away from egalitarian bands and tribes, toward a chiefdom or state-level society. Instead, this research theorizes that while LBA communities participated in more permanent site construction than in the EBA/MBA, they were primarily 'middle-range type' societies, a term which can replace previous anthropological notions of a tribe (cf. Duffy, 2015; Rousseau, 2006). In discussing the processes that contributed toward the LBA shift, this work will be situated within a broader debate upon the significance of prehistoric place-making and the emergence of settlement aggregation (e.g. Birch, 2013). In turn, this research aims to help rectify the lack of available information on the LBA of the Iberian southwest.

1.2 Scope of Study

The scope of this investigation is rather broad in that it examines the southwest Iberian Peninsula from various degrees of analysis. The southwest Iberian Peninsula is situated in modern-day south-central Portugal and southwestern Spain (Figure 1.1). While the region does

not face the Mediterranean Sea, Portugal has long been considered Mediterranean with regard to climate and culture (Blake & Knapp, 2005, p. 7; Broodbank, 2013, p. 61). Even more significant is Iberia's potential for maritime connections, both across the Atlantic and along the Mediterranean (Broodbank, 2013; Dietler & López-Ruiz, 2009; Scarre, 2002; van Dommelen and Knapp, 2010). Southwest Iberia's place in the context of wider Atlantic and Mediterranean pre- and proto-history, while undoubtable and noteworthy, also presents several issues. It is often difficult to interpret the 'bigger picture' and Iberia's place in the context of the rest of the world when there are limited data available at the local scale for certain periods, such as the LBA.

Figure 1.1 Map of the Iberian Peninsula highlighting the Southwest

Geographically, while the study considers the wider southwest, this thesis limits its scope by using data from the Serra d'Ossa microregion located in the Central Alentejo of Portugal. While not completely representative of the geographic variability of the southwest, this region acts a test-case; landlocked, it is approximately 2000 km^2 in size with tall mountain ranges and deep valleys, in addition to several significant rivers connecting the area to other parts of the wider region. The landscape of the Serra d'Ossa microregion (Figure 1.2) has been previously defined and characterized throughout its long history of study, making it an appropriate candidate to investigate the emergence of the LBA in the Iberian southwest (e.g. Calado, 2001; 2004; Mataloto, 2004; 2012; 2013; 2017).

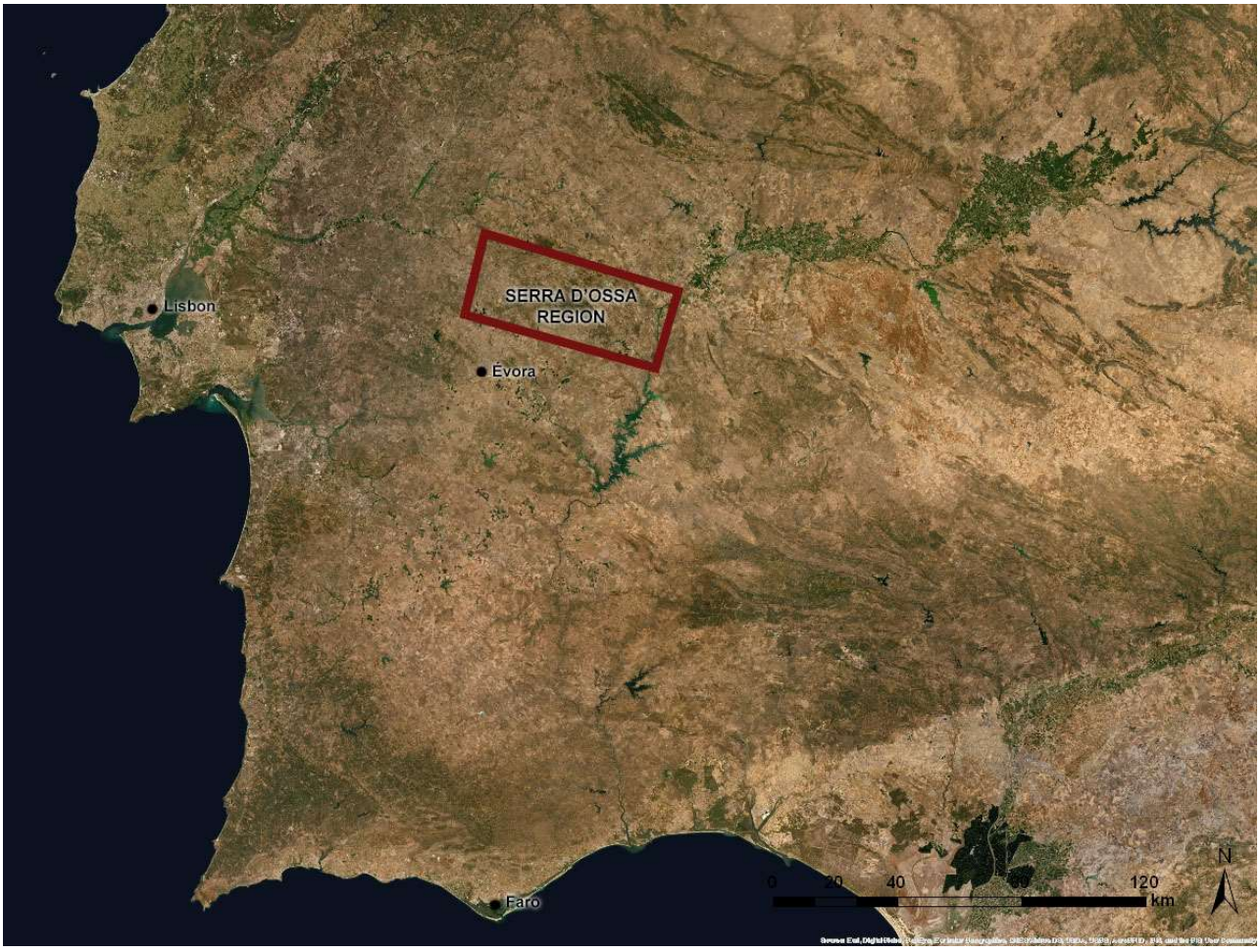

Figure 1.2 The Serra d'Ossa Microregion in the Context of the Iberian Peninsula

Bounded diachronic analyses (Barker, 1995; Davis, 1998) have demonstrated that landscape studies require multi-scalar perspectives as site-level finds are meaningful in the context of a wider landscape (Denham, 2017, p. 466). In turn, this thesis applies a long-term geographic and temporal approach.

The chronology under study corresponds to the Three Age System encompassing the Neolithic, Chalcolithic, and Bronze Age, including their several subdivisions. The LBA was chosen as the endpoint of study as this marks the period during which Phoenician colonial influences began to emerge in Iberia, further expanding during the Iron Age.

As long-term studies are uncommon in Iberia, a review of several seminal sources was necessary to define an agreed chronology for the southwest (Cardoso, 2006; Mataloto et al., 2013; Pavón, 1998, p. 234). While this chronology is generally accepted for the earlier periods in question, the classic tripartite division of the Bronze Age does not fit well in the context of the Iberian Peninsula – especially the southwest – as the distinction between the end of the Chalcolithic and the EBA is based on criteria yet to be proved with any sense of certainty. This transitional period is best defined by the appearance of the Bell Beaker phenomenon across the southwest and is referred to as such in discussion.

Table 1.1 Chronology for the Iberian Peninsula's southwest late prehistory

Early Neolithic	5500 – 4500 BCE
Middle Neolithic	4500 – 3500 BCE
Late Neolithic	3500 – 3000 BCE
Chalcolithic	3000 – 2200 BCE
Late Chalcolithic/EBA transition	*2500 – 1700 BCE*
Early Bronze Age	2200 – 1700 BCE
Middle Bronze Age	1700 – 1200 BCE
Late Bronze Age	1200 – 800/700 BCE

The details of the chronological scheme employed in this thesis are further discussed in Chapter 3. Considered only briefly here, the Chalcolithic is this study's intended starting point, but as it is difficult to distinguish the Neolithic from the Chalcolithic, particularly when reliant on survey data, many sites were somewhat unsatisfactorily categorized as Neolithic/Chalcolithic and have thus been included so as not to exclude potentially significant areas of Chalcolithic occupation.

1.3 Methodology

Methodologically, this research employs Geographic Information Systems [GIS] to plot and interrogate a corpus of settlement data from the Central Alentejo. This method enables a means of questioning the influence of shifting socioeconomics and environmental conditions on settlement patterns from the LN/Chalcolithic to the Late Bronze Age. To ground the study of LBA site aggregation, this thesis examines hitherto unpublished data from two seasons of excavation at the Late Bronze Age large-fortified upland settlement of Castelo Velho da Serra d'Ossa [CVO], also referred to as Castelo.

1.4 Thesis Questions and Objectives

This research aims to answer two broadly framed questions. The first takes a long-term chronological perspective, situated at the microregional level though referencing the wider region when data are unavailable, and asks: what factors/processes underpinned and drove shifts in settlement, natural and/or social, amongst communities in the southwest Iberian Peninsula during the LN/Chalcolithic to the Late Bronze Age (ca. 3500 – 800 BCE)?

The second examines a considerably shorter period of time, while reflecting on the wider chronological context and asks: how are themes of place-making and settlement aggregation manifested in the LBA of the Serra d'Ossa microregion and how might this test-case relate to what is happening in the wider southwest during the LBA?

This thesis considers a number of potential natural and cultural actors that may have underpinned settlement aggregation in the Central Alentejo. These factors have been suggested previously within Iberian prehistory and by scholars studying population coalescence more generally in the Mediterranean and beyond. These include variously: changes in climate and ecology (for example, the 4.2ky BP event and alleged drought in the 12th century BCE), subsistence practices, shifting desires and value regimes, and/or shifting political structures and forms of social distinction.

In turn, this thesis aims to quantify and qualify previous impressions of settlement change over time in the Central Alentejo (cf. Calado, 1993, 2001, 2004; Mataloto, 2004). Additionally, this research intends to examine themes of place-making and the potential emergence of settlement aggregations during the LBA. Ultimately, these aims are approached through the use of GIS to visualize settlement placement and patterns, an analysis of grey literature to understand what has already been accomplished at the site-level, and by examining excavation data from LBA site of Castelo Velho da Serra d'Ossa.

1.5 Theoretical Approach

Two theoretical concepts are considered in the interpretive section of this study – aggregation, building on Birch (2013) and Kowalewski (2006) and place-making, based on Brück and Goodman (1999). This approach was selected due to the nature of the data and the

initial impressions formed during research. Considering the rather limited BA settlement data from Iberia's southwest, this thesis borrowed from those approaches that best fit with the local data and context.

1.5.1 Aggregation

The coming together of populations, or 'aggregation', was undertaken by LBA populations of the Iberian southwest. Aggregation is a global phenomenon and by extent discussed by archaeologists from Europe, Asia, and the Americas (Birch, 2013). These varying studies tend to ask similar questions: how did populations living in smaller groups come together? What were the conditions that led to these processes? Did larger aggregations represent a move away from egalitarian bands and tribes, toward chiefdom or state-level societies? What methods are at our disposal to interpret complexity in prehistoric contexts?

This thesis considers the various factors that have the potential to influence changes in settlement organization over time, such as climate, population movement, and social stress. As others have argued, processes that have led to the aggregation of populations are best understood through multi-scalar analysis (Birch, 2010, p. 2). Aggregation should be understood as a response to upheaval/pressure or a process among small-scale societies, rather than a type of society (Birch, 2010, p. 31). In Birch's (2010) theory of coalescence, Kowalewski's (2006) framework is applied to describe the creation of new social groups and identities, identified here as settlement aggregations (p. 30). Citing Kowalewski, Birch identified certain commonalities often identified in the process of aggregation: larger towns, the presence of multiethnic/multilingual populations, a movement to secure locations that provide potential for production of subsistence items, the fortification of sites, the production intensification/changes

in social practice of production, trade intensification, an integration of community through rituals/corporate kin groups/clan systems, domestic architecture encouraging community, communal egalitarian ideologies/rituals, migration myths, collective leadership (discouragement of centralized hierarchy), and a culture based macro-regionally (Birch, 2013, p. 10-11).

The aggregation of populations has typically led to perceptible shifts in socioeconomics and politics, thus providing a means by which to observe sociocultural change and the emergence of new kinds of communities (Birch, 2013, p. xiv). These shifts are made manifest physically through the construction of communal spaces and public architecture, along with shifts in production and consumption, part of the development of new institutions – whether ritual, political, economic, or cultural in nature (Birch, 2013, p. xiv, 2). In order to understand how aggregate settlements were created and maintained, one must first acknowledge that aggregations do not fit neatly into typologies of settlements (Birch, 2013, p. 2).

Studies of aggregation understand that these societies are not the result of internal population growth, but are often formed due to the abandonment of regional settlement patterns consisting of small, dispersed sites, instead favouring aggregation into larger, permanently occupied settlements (Birch, 2013, p. 3). It is important to note that these communities can vary greatly in terms of their size and their context; their main commonality is that they are all essentially 'middle-range societies', i.e. generally "between prehistoric villages and emergent chiefdoms/states" (Birch, 2013, p. 2).

In order to understand the character of middle-range societies and the implications of applying this term in the study of prehistoric contexts, one must first acknowledge the early, sequential typologies of social organization – from mobile hunter-gatherer bands, to tribes, chiefdoms, and states (Service, 1962). Societies have also been understood as egalitarian, ranked,

or stratified in organization (Fried, 1967). While bands are typically characterized by their immediate-return systems and engagement in systems of generalized reciprocity (and often associated with hunter-gatherer societies), the latter three types of societies often utilize delayed-return systems and engage in accountable reciprocity (Rousseau, 2006, p. 70). However, alternative models of social organization have more recently been deployed in the interpretation of societies.

Rousseau (2006) defines the concept of *middle-range societies*, replacing the "earlier anthropological notion of "tribe," which has lost currency because it suggests a spurious homogeneity" (p. 20). The emergence of accountable reciprocity (with which accounts are held and value is assigned thus regulating exchanges) comes the rise of middle-range societies, thus transforming the role of the domestic unit, encouraging new means of collaboration and conflict management (Rousseau, 2006, p. 88). Ethnographic studies have indicated that in these kinds of societies, individuals identify themselves as members of a single local group (Rousseau, 2006, p. 88). In turn, these societies may sometimes exhibit a degree of wealth and social difference (Sapignoli, 2013, p. 41). Middle-range societies also typically have strong ties of locality – a common element of the landscape where individuals feel a significant connection (Sapignoli, 2014, p. 57). Amongst these types of societies there is often a collective perception of unity manifested in their connections to places (Sapignoli, 2014, p. 57).

1.5.2 Place-Making

In order to understand the process of place-making in prehistory, several terms must first be defined: landscape, space, and place. On the one hand, landscape refers to the earth in its physical form – its natural, topographical characteristics, providing a location for the creation

and transformation of meaning (Tilley, 1994, p. 25). On the other hand, space is more abstract and socially produced, thus providing a medium for action of cultural significance, rather than a container (Brück & Goodman, 1999, p. 8; Evans, 1985; Tilley, 1994, p. 10). Space is ontologically dependent – it is experienced and understood differently by each individual (Tilley, 1994, p. 11). A place is "made" through human consciousness – relying on "human experiences, feelings, thoughts and activities" (Tilley, 1994, p. 15). Place is thus the constructed context for lived experience (Tilley, 1994, p. 15).

Expanding on this concept, place is created, both consciously and unconsciously, with a consideration for landscape and space. The topographical features of a location are understood as spaces according to an individual's ontological perspective and are made *places* through an assignment of "names, associations, and memories" linked to current or past use (sometimes involving a mythological constitution), thus endowing certain places with particular significance (Brück & Goodman, 1999, p. 8; Tilley, 1994, p. 24). However, the creation and maintenance of human-landscape relations relies on the social facet of constructing space (Brück & Goodman, 1999, p. 2).

The western dichotomy of culture and nature is not universal, and thus makes non-western physical manifestations of cosmological beliefs difficult to comprehend and often overlooked (Brück & Goodman, 1999, p. 8). In turn, the application of functionalist logic must carefully applied when trying to understand human-landscape relations; ecologically deterministic and economic interpretations should be avoided as long-term social/cultural attachment to a place can outweigh economic concerns (Brück & Goodman, 1999, p. 8-9). Therefore, while long-term analyses might quantitatively define patterns in settlement, a consideration of small-scale, site-level contexts examined within a wider chronological

framework provide a medium for qualitative analysis of a landscape's role in informing human action.

There is a tendency to focus on landscapes with prehistoric monuments when discussing the concept of place-making and persistent places in prehistory (Brück & Goodman, 1999, p. 2-3, 10; Díaz-Guardamino, 2019b, p. 71). These kinds of studies tend to prioritize questions regarding power structures and cosmological beliefs, often ignoring settlement data and the aspects of every day social life, typically characterized as domestic (Barrett, 1994; Brück & Goodman, 1999, p. 10; Tilley, 1994). However, settlements are equally as significant as they reflect the quotidian nature of existence, arguably providing more information about individuals and their agency in the construction of places, whether they are ritual sites, settlements, or fit into both of these categories.

The importance of considering settlements in studies of place-making stems from the idea that human actions can be both symbolic and practical in nature (Brück & Goodman, 1999, p. 10). The symbolic, cosmological aspects of life provide logic and helps individuals understand their world, thus making it closely intertwined with the quotidian (Brück & Goodman, 1999, p. 10). Individuals both create and experience various places throughout their life, which adds to their construction of relationships and identity – partly rooted in past events and places (Brück & Goodman, 1999, p. 12; Ingold, 1986; Tilley, 1994). Therefore, settlements are a significant part of this process, since they provide a place where many aspects of life, both material and social, are altered and preserved (Brück & Goodman, 1999, p. 13). Places themselves can also be interpreted as possessing biographies (e.g. Barrett, 1994; Ingold, 1993). Thus, biographies of individuals and their settlements consist of relationships and events closely tied to where they were experienced (Brück & Goodman, 1999, p. 14).

In turn, intra-site studies provide a means by which to understand how human practice is categorized and organized, how space is understood in the context of day-to-day life, the relationship (if there exists one) between ritual and domestic elements of life, the character of the individuals living in a household, and their relationships with each other and with others outside of their household though within the site (Brück & Goodman, 1999, p. 15). Overall, the study of place-making must involve settlements – the potential for this will be discussed in the fifth chapter, examining the case-study of the large-fortified upland site of Castelo.

1.6 Outline of Thesis

This thesis consists of six chapters. Chapter 2 provides the archaeological background for this research by reviewing what has previously been published about the periods in question, how they are currently interpreted and understood, with settlement organization the focus. It details regional, chronological, and cultural terminology, in addition to the region under consideration. Drawing on these reviews, the chapter identifies gaps in current knowledge, thus demonstrating the limitations of predominant interpretations of the late prehistory of southwest Iberia and establishes the research questions for the thesis.

Chapter 3 outlines the methodology utilized in this research to test hypotheses on the processes driving settlement aggregation and the emergence of LBA society. This chapter consists primarily of two parts – the first outlines the creation of the project database and the resulting maps created with ArcMap 10.5, both of which contributed toward the long-term examination of settlement patterns in the microregion from the Neolithic/Chalcolithic to the Late Bronze Age. The second part discusses the excavation at Castelo Velho de Serra d'Ossa, which relates directly to subsequent discussion of the emergence of the LBA in the region.

Chapter 4 considers both the long-term and short-term data. This chapter outlines the process of data acquisition and results attained through the creation of the database and maps, in addition to the excavation at Castelo. The interpretation and discussion of these data and results of analysis are covered in the proceeding chapter.

Chapter 5 integrates the varying considerations of the research – the archaeological context of the region, the methodology, and the raw data and results – thus forming an explanation for shifts in settlement patterns in the long-term and social organization during the LBA of the Iberian southwest. This chapter begins by examining the methodology and data/analysis from the previous two chapters in light of the background provided in Chapter 2. This highlights the results of the research and contributes toward the development of a hypothesis for social structure and the emergence of the LBA in the region, all of which is situated in the context of theories of settlement aggregation and place-making.

Chapter 6 concludes the thesis and emphasizes the importance of long-term, diachronic analyses considering multiple geographic scales and how they aid in understanding and enhancing site-level research. This chapter provides a set of conclusions directly arising out of the discussion and responds directly to the aim of this research as stated in the introductory chapter, outlining the research's contribution to the current body of knowledge, limitations, and discussing potential future directions of research.

1.7 Summary

The Late Bronze Age of the southwest Iberian Peninsula presents a phase of major change. Following a brief period in which the Bell Beaker phenomenon appeared in the region during the Chalcolithic into the Early Bronze Age, evidence of occupation dating to the

remaining EBA and much of the MBA is particularly scarce, especially in the Serra d'Ossa microregion. There are 176 settlement sites dating to the Neolithic/Chalcolithic in the microregion; during the EBA/MBA, there are only two. Theories of climatic disruption, desertion, depopulation, and aggregation are considered. This thesis hypothesizes that during the EBA/MBA, populations shifted from more permanent occupation to small-scale dispersed settlement organization, with ephemeral pit sites/*campos do hoyos* representative of domestic occupation.

It is undoubtable that the LBA saw a shift in terms of material culture, site and household architecture, and overall social organization. This shift is related to wider southwest trends that occurred during the time and is conceptualized through the concepts of aggregation (Birch, 2013) and place-making (Brück & Goodman, 1999). This thesis takes a long-term approach to study, analyzing the period from multiple temporal scales in order to examine how moments of aggregation (and implied disaggregation) may have resulted in the development of LBA societies that defy the stereotype of chiefdom or state-level societies often assumed in "similar" contexts (such as the El Argar in southeast Spain) (Lull et al., 2013). Therefore, this thesis aims to investigate the nature of shifting socioeconomics and environmental factors across various major chronological periods in order to better understand conditions leading up to the LBA of the Iberian southwest.

CHAPTER 2: ARCHAEOLOGICAL CONTEXT

2.1 Introduction

The first chapter introduced the thesis, discussing generally the thesis content, scope, methodology, objectives, research questions, and theoretical approach. This chapter presents the archaeological background of southwest Iberia's late prehistory; first very briefly considering the theoretical trajectory of Iberian archaeology for those unfamiliar with Spain and Portugal's political history in addition to the state of the field in the Peninsula. It then presents the archaeological context of study, discussing trends in settlement organization from the LN/Chalcolithic to the LBA. In doing so, this chapter aims to review the literature and present areas of debate and discuss constraints of prevalent interpretations of each period in question.

2.2 Theoretical Trajectory of Iberian Archaeology

This section is by no means an extensive overview of Iberia's political history, nor its history of archaeological study – a review of the latter can be found in Lillios' (2020) book (p. 14-28). Instead, this section aims to briefly discuss the theoretical trajectory (as opposed to the methodological trajectory, which was influenced by late 19th and early 20th century foreign researchers) of archaeological research in and of the Iberian Peninsula. For those unfamiliar – the archaeology of Iberia, as many other facets of research, was influenced by the political histories of Spain and Portugal; specifically the fascist, totalitarian dictatorship in the former and authoritarian dictatorship in the latter, both of which emerged in the 1930s and lasted until the mid-1970s; this influence has been dissected extensively by Díaz-Andreu (e.g. 1994, 1996, 1997, 2014). The Estado Español/Francoist regime (1939-1975) in Spain and the Estado Novo (1933-1974) in Portugal affected 20th century archaeology, both directly and indirectly, throughout the

Iberian Peninsula (Díaz-Andreu, 1997). Due to its comparably late developments in scientific research (a result of its political context), Iberia long remained outside of international studies of prehistory, though this has changed over the past twenty years (Díaz-Andreu, 1997).

A recent review of three edited volumes on the late prehistory of the region by Blanco-González (2015) analyzes the current state of research in the region and thus provides a good starting point for understanding the field's context. To its disadvantage, much of Iberian archaeology remains stuck, to a certain degree, in nationalist and regionally circumscribed frameworks facilitated by current political and academic systems, counteracting attempts at internationalization (Blanco-González, 2015, p. 1241). Generally, the nature of local research is often contradictory – it is very much open to international involvement but, at the same time, remains held back by national and regional bureaucracies, thus resulting in few English-language volumes edited/coordinated by Spanish and Portuguese archaeologists (Blanco-González, 2015, p. 1241).

An entrenched system of academic patronage in Iberian institutions have made developments difficult, with research often too local in scope; interregional comparisons and macro-regional studies are rare, while pan-Iberian studies were previously hard to come by, though this has changed in recent years (Blanco-González, 2015, p. 1241; Díaz-Andreu, 1997; Lillios, 2020) with some earlier exceptions (e.g. Castro, 1995; Senna-Martinez, 1995). For example, Senna-Martinez (1995) applied a diachronic framework toward the study of the Upper and Middle Mondego River basin. He identified the potential for cross-regional studies, though his focus was on human settlement and its relation to cultural evolution and social complexity (Senna-Martinez, 1995). Generally, these circumstances have led to current archaeological work

being interpreted with outdated frameworks, leaving Iberia comparably behind in the application of post-processual studies of prehistory (Blanco-González, 2015, p. 1241).

Blanco-González (2015) defines three principal standpoints in Iberian archaeological research: (a) cultural-historical archaeology; this standpoint is declining and remains least visible to English-language readers but still characterizes a significant part of the discipline in Iberia, especially in the study of late prehistoric Iberia; (b) functionalist or materialist approaches which concentrate on "long-term trends and generalizing socio-economic processes"; this theoretical viewpoint surged in the 1980s with proponents of this school often focusing on social complexity, taking a generalist perspective which often included contrasting intellectual approaches like "functionalist (processual) and historical materialist (Marxist)"; and (c) interpretive, humanistic-oriented approaches (akin to Anglophone post-processualism), which remain sporadic but are critical attempts at reinterpreting well established understandings of prehistory; these studies are eclectic but derive from a general dissatisfaction with the grand narratives of cultural-historical and functionalist/Marxist frameworks – they include but are not limited to the field of archaeology's political and social entanglement, gender archaeology, and the production of goods (objects, monuments) as a component of society rather than solely symbols of identity or status (Blanco-González , 2015, p. 1241-1242; Lillios, 2020, p. 27).

Site-centred archaeology was once the most common type of research carried out in Iberia; however, over the past couple of decades, there has been a significant shift to landscape studies with the utilization of geographic information systems (GIS) in addition to an increase in cultural resource management (CRM) work – a direct result of increased development throughout the region (Lillios, 2020). Generally, the archaeology of the Iberian Peninsula remains fairly undertheorized in many areas, thus providing an opportunity for potential re-

interpretations of existing studies and data in addition to non-traditional analyses of recently excavated and surveyed sites and landscapes.

2.3 Settlement Organization from the LN/Chalcolithic to the LBA in Southwest Iberia

2.3.1 Late Neolithic/Chalcolithic

Prior to the 1970s in southwest Iberia, the classic LN/Chalcolithic settlement was viewed as a fortified hilltop site constructed of dry-stone (*pedra seca*) walls with semicircular towers, occupied from the LN to the appearance of the Bell Beaker phenomenon (Lillios, 2020, p. 178; Mataloto et al., 2017, p. 143). Examples of such sites are São Pedro, located in the Serra d'Ossa microregion, and Zambujal and Vila Nova de São Pedro [VNSP], both located in the Portuguese Estremadura. The architecture at VNSP consists of enclosed stone walls, bastions, and silos (Lillios, 2020, p. 179-180, 183). However, this vision of the southwest Iberian LN/Chalcolithic changed as survey projects came to reveal that in some areas, populations primarily lived in small settlements without surrounding walls, and also in ditched enclosures, which were only discovered in the 1980s (Lillios, 2020, p. 178, 186). The excavation and study of these ditched enclosures, located in Iberia's southwest, have completely changed how the region's Chalcolithic is currently understood.

Ditched enclosures are negative earthworks that typically have concentric rings of ditches with a U- or V-shaped cross-section, in addition to scattered pits throughout the site (Lillios, 2020, p. 186). Many of these sites are located in river valleys arguably due to their rich soils and mineral reserves, such as quartzite and amphibolite, while valleys also acted as natural pathways for exchanges of ideas, goods, and transportation across and within the region (Blanco-Gonzalez et al., 2018, p. 55; Lillios, 2020, p. 178, Mataloto et al., 2018, p. 26). Lillios (2020) states that

"most [ditched enclosures] were established ca. 3500 cal BCE, reached their apogee ca. 2500 cal BCE, and were abandoned ca. 2250 cal BCE" (p. 186). These sites have challenged all previous understandings of domestic occupations and mortuary practices across the landscape, as many seemingly distinct activities are often found in close proximity to each other at ditched sites (Lillios, 2020, p. 186). "Metallurgy, food consumption, and the deposition of broken artifacts, animal bones, soil and human remains" are amongst some of these activities (Lillios, 2020, p. 186). Overall, the discovery of ditched enclosures completely altered our understanding of the Chalcolithic in southwest Iberia (Valera, 2015, p. 409)

There are various theories about the function and purpose of ditched enclosures. Several authors have described these sites as palimpsests – they served different purposes at different times, as indicated by the cutting and re-cutting of ditches in addition to the abandonment of certain sections while other parts of the site remained in use (Blanco-Gonzalez et al., 2018, p. 39; Lillios, 2020, p. 186). Some ditched enclosures are so massive it remains questionable to even consider them as single sites; Valencina de la Concepción in Spain, an exceptional example, is over 400 ha (Caramé et al., 2010, p. 107; Lillios, 2020, p. 188). The site of Perdigões is 20 ha, though considerably smaller ditched enclosures also exist in the southwest, such as Juromenha 1 and Montoito 2 (Mataloto et al., 2018, p. 26).

Some researchers reject the theory of ditched enclosures functioning as villages due to the lack of evidence of domestic architecture (Valera, 2009, p. 244). However, it should be noted that many ditched enclosure sites are located in areas that have been massively destroyed by ploughing, due to their excellent location on productive agricultural soils. In turn, much of the data comes from within the ditches themselves.

Valera (2009), primary investigator at the ditched enclosure of Perdigões, believes that this site was an aggregational centre that provided a stage on which social identity was performed and administrated, thus reinforcing social cohesion amongst the dispersed populations in the surrounding landscape (p. 244). The author is not assuming hierarchical social organization, but instead, encouraging an interpretation of the site as a place for identity building, due partly to the ditch's alleged cosmological significance, based on the orientation of the SE entrance, which aligns with the rising sun of the winter solstice (Valera, 2009, p. 257). More recently, Valera has announced the presence of a "Woodhenge" at Perdigões; the first of its kind outside of the UK and Central Europe – though this has been debated (""Woodhenge" discovered in prehistoric complex of Perdigões", 2020).

Overall, the Neolithic and Chalcolithic brought increased social complexity to Iberia's southwest (Valera, 2015, p. 409). This complexity was expressed through several factors; including, but not limited to: demographic expansion, intensification of agropastoral subsistence, monumental architecture, ditch-digging, aggregation of populations, the development of new forms of expression, and the appearance of long-distance trade networks, primarily for raw materials (Bonilla et al., 2018; Valera, 2015, p. 409). Although not the focus of this study, there is also a great deal of variability in terms of mortuary spaces: caves, rock-shelters, and hypogea dominate in the Estremadura, Algarve, and western Andalucía while megaliths are more common in the Alentejo (Lillios, 2020, p. 190). In spite of these major shifts in ways of life, it has become increasingly clear that the southwest did not experience institutionalized inequality as others have previously hypothesized (Chapman, 2008; Gilman, 1999).

2.3.2 The Emergence of the Bell Beaker Phenomenon

The southwest then experienced a period of change during the Chalcolithic defined by the appearance of elements of the Beaker phenomenon, which continued into the Early Bronze Age. The "Beaker phenomenon" constitutes the emergence of a new kind of ceramic type and its associated artifactual package. In Portugal, this period is sometimes referred to as the Beaker Chalcolithic. In the southwest, sites dating to this period have largely been interpreted as sites with Bell Beakers, rather than Beaker sites (Valera et al., 2019). Beakers have been identified at 256 sites across Portugal and emerged in the Alentejo between 2650 – 2430 BCE (Lillios, 2020, p. 227; Mataloto et al., 2013; Valera et al., 2019, p.2).

There have been more Beakers found in Iberia, especially in the west, than in any other region of Europe, with some of the oldest Beakers dating to ca. 2700 BCE (Lillios, 2020, p. 228). Beakers are regionally variable, but in Iberia, they are typically characterized by impressed or incised geometric designs placed horizontally along a thin-walled vessel (García-Rivero et al., 2016, p. 17-18; Lillios, 2020, p. 228). Beakers have three general forms: S-shaped vessels reminiscent of an inverted bell (1:1 ratio, 1 litre liquid capacity), wide bowls likely used for holding solids, and small bowls and pots meant for individual use – possibly to distribute goods out of the previous two forms (Lillios, 2020, p. 228). These ceramics are found variously in collective tombs, ceremonial sites, and settlements (Lillios, 2020, p. 230).

Literature on the socioeconomics of the late third millennium BCE in the southwest typically focus on Beaker ceramics (Lillios, 2020, p. 243). In the Alentejo, Beakers are most often found in settlements and ditched enclosures; they rarely appear in burials, which is significant, considering the fact that the region has numerous megalithic tombs, such as dolmens (Lillios, 2020, p. 245; Valera et al., 2019, p. 8) (Figure 2.1). Conversely, in the Estremadura

there is a near equitable distribution between funerary and non-funerary contexts (Valera et al., 2019, p. 2).

Figure 2.1 Anta da Herdade de Candeeira - a Neolithic/Chalcolithic dolmen located in Redondo, Alentejo, Portugal. 2018.

The emergence of the Beaker phenomenon sees the abandonment of walled Chalcolithic sites and new types of settlements emerging over these walled sites, in addition to settlements in new locations (Valera et al., 2019, p. 12). It is important to note that this hypothesis is debated – others argue for continuous occupation, with possible reconfiguration and abandonment of the

site. At the local site of São Pedro, it is during the fifth phase that Bell Beakers emerged as revealed by the presence of 16 sherds (Valera et al., 2019, p. 18).

Overall, the Beaker phenomenon emerged at the middle of the third millennium BCE – a time of population intensification as evidenced by the growth of aggregational sites such as ditched enclosures, slightly predating the societal collapse that occurs shortly thereafter (Valera et al., 2019, p. 19). While the Beaker phenomenon is present in the Alentejo, it appears to have had a marginal impact in terms of sociocultural shifts (Mataloto, 2017, p. 60). Some researchers theorize that Bell Beakers were created to suit the need for diversified forms of ideological representation (Valera et al., 2019, p. 20), previously fulfilled by the production of schist plaques, bone and ivory idols, variscite beads, and other special finds. One ancient DNA [aDNA] study determined that the majority of Beaker contexts in Iberia did not share genetic similarities with Eurasian steppe populations, with genetic similarities primarily associated with preceding populations of Iberia (Olalde et al., 2018, p. 5). However, as some Beaker Iberian contexts did have "steppe-related ancestry", it appears that some level of gene flow did occur during this period (Olalde et al., 2018, p. 5). While it is vital to consider the aDNA evidence, it is also important to note the archaeological context of this data. Sample sizes are very limited, particularly in southwest Iberia. Larger sizes of samples are needed, in addition to a detection of more sites, to determine the true nature of interactions between indigenous Iberians and incoming populations. Overall, the emergence of the Beaker phenomenon in southwest Iberia does not appear to suggest the large-scale long-distance arrival of new populations, bringing with them major sociocultural change, but appears to have involved some form of population movement.

2.3.3 Early/Middle Bronze Age

In the Alentejo, the EBA/MBA (2200 – 1200 BCE) appears to have been a period of profound transition during which many characteristics of Chalcolithic and Beaker life disappeared; enclosed or "fortified" occupations were abandoned, architectural monumentality disappeared, and the construction of positive structures was sparse (Blanco-González et al., 2018, p. 37; Lillios, 2020, p. 247; Mataloto et al., 2013, p. 322; Valera, 2015, p. 417). Across the Iberian southwest, the period which has been broadly defined as the EBA/MBA is characterized by a general ephemerality in terms of settlement presence, suggesting that populations may have been mobile and left only fleeting traces. In turn, funerary contexts are the primary source of information, though even these are sparse in many parts of the southwest (Lillios, 2020, p. 249). This period has more recently been characterized by the low-lying pit field sites (*campos do hoyos*) present in both Spain and Portugal (Antunes et al., 2012, p. 279; Deus et al., 2009; Lillios, 2020, p. 249; Santos et al., 2008, p. 84; Valera, 2015, p. 417). These sites are suspected to have been part of open-air, possibly seasonal, settlements (Blanco-González et al., 2018, p. 42; Valera, 2015, p. 419).

There are two general theories that attempt to define the underlying factors influencing the ephemerality of EBA/MBA sites: the first is depopulation, and the second is increased mobility, leading to ephemeral, non-permanent sites (Lillios, 2020, p. 247). Some have interpreted the abandonment of the Chalcolithic lifestyle as part of an intentional social strategy aiming to maintain local sociocultural stability through mobility, with communities adopting a semi-nomadic lifestyle (Blanco-González et al., 2018, p. 42; Lillios, 2020, p. 249; Valera, 2015, p. 419). Overall, the low-lying pit sites characteristic of the EBA/MBA in Iberia's southwest have changed our understanding of this period. An exceptional example of this site-type is Torre

Velha 3 (Serpa, Beja) at which 600 subterranean features were identified, containing evidence of domestic life and mortuary deposition (Alves et al., 2012; Lillios, 2020, p. 249).

While lowland pit sites appear in the southwest throughout the Bronze Age, upland sites dating to the EBA/MBA are often part of a longer occupational sequence either extending back to the Chalcolithic or forward into the LBA. In the Sierra Morena mountain range of Spain, there are several well-researched Bronze Age upland settlements that began emerging in the EBA/MBA period, though radiocarbon dates from these sites typically stem from the 1980s/1990s and thus were not initially calibrated. Taking this into consideration, researchers have determined that occupation seems to be evident at the upland terraced site of El Trastejón, for example, from 2200 to 850 BCE (Pérez et al., 2011). However, this site had two key periods of occupation – the first dating to 1600 – 1200 BCE, the second aligning with the LBA, dating to 1200 – 800 BCE (Pérez et al., 2011). Prior to the first major period of occupation, there seems to have been an abandonment of structures on the upper terrace of the site, but during it, the ceramics coincide with those characteristic of southwestern pit sites (Pérez et al., 2011). El Trastejón is also enclosed by a perimeter wall, but the chronology of the wall is unknown; the authors, looking to similar sites in the southwest (such as Outeiro do Circo) have determined that the wall likely dates to the LBA (Pérez et al., 2011).

2.3.4 Late Bronze Age

In the context of the Iberian Peninsula, the term “Late Bronze Age” refers to a variable and regionally distinct cultural pattern. In the southwest, the period refers to the material remains of communities inhabiting the region ca. 1200 – 800 BCE. The LBA of the Alentejo is poorly understood due to the few comprehensive excavations (Mataloto, 2012, p. 186). Considering

Iberia more widely, knowledge of the peninsula from ca. 1300 BCE is sporadic (Lull et al., 2013, p. 611; Díaz-Guardamino, 2014, p. 334). Mataloto (2012) has already provided an overview of the raw data from various settlement sites in the region, cross-examining these with gold finds and thus presenting a general interpretation of settlement organization and society during the first millennium BCE. Therefore, the aim here is not to reiterate, but to consider the wider southwest, looking to the Sierra Morena mountain range in Spain, in addition to the Beja region of Portugal due to the presence of several significant southwest LBA sites.

Settlement data are currently the primary source of information on the LBA for the left bank of the Guadiana (Alentejo region), as no funerary/ritual sites dating specifically to this period have yet been identified (Soares, 2005, p. 141). In turn, during the Late Bronze Age, a seemingly new type of settlement emerged, in contrast to the primarily ephemeral pit sites of the previous periods – larger (over approximately 10 ha) hilltop settlements, located in areas with good visibility of the surrounding landscape, some with enclosing walls (Mataloto, 2012; Serra & Porfírio, 2017, p. 227; Soares et al., 2012). Examining first the Alentejo, it is also clear that some of the open, lowland settlements of earlier periods continued to be occupied during the Late Bronze Age, with overlap occurring – though there was possibly a shift in site-use to metallurgical production (Serra & Porfírio, 2017, p. 227).

In the area surrounding the Sierra Morena mountain range, located near the Rio Tinto copper mines, a hub of approximately 30 hilltop sites have been identified (Lillios, 2020, p. 248). Some sites, such as El Trastejón, are massively terraced and "fortified" with oval huts and evidence of copper smelting (Lillios, 2020, p. 248). Others, such as Atalaya, located 300 m away from El Trastejón, have been interpreted as watchtowers due to their defensive bastions and a lack of artifacts (Lillios, 2020, p. 248). Another significant Bronze Age settlement in the area is

La Papúa – it is located on a hilltop across an area of approximately 14 ha and two large bastions at the main entrance to the site have been identified (Sanjuán, 1999, p. 342). While there is a pointed demographic increase and concentration of populations within a smaller number of large sites in the Sierra Morena area from ca. 1700 BCE onwards, this thesis will demonstrate that similar processes may have occurred in the Alentejo at a later time, closer to the Late Bronze Age of the region (ca. 1200 BCE) (Sanjuán, 1999, p. 340).

Overall, the emergence of the southwest LBA is characterized by the construction of fortified hilltop settlements, large in comparison to previous EBA/MBA occupations. We also see the appearance of stone stelae, depicting anthropomorphic "warrior" figures, alongside depictions of weapons, chariots, and personal objects such as mirrors and combs (Figure 2.2). Similar objects of adornment and utility, such as bracelets, necklaces, fibulae, daggers, and chisels have also been found in the southwest, believed to be from the LBA (Almeida, 2012; Mataloto, 2012). Unfortunately, many these objects are either decontextualized, or were unsatisfactorily recovered and recorded in the nineteenth century (Almeida, 2012; Mataloto, 2012). The rise of large-fortified upland sites, in addition to the appearance of warrior iconography, suggests new kinds of social organization concerned with defense.

In the past, stelae were studied for their iconography, with little attention given to their context (when available), nor their raw material sourcing, thus leaving much unknown about the communities that constructed these monuments (Díaz-Guardamino et al., 2019, p. 6111). Recently, the de-contextualized stelae of the southwest have been reinterpreted as multifunctional monuments acting as landmarks and memorials to the ancestors – seemingly revered warriors or heroes – related to the "elites, 'houses', or kin groups" of the Late Bronze Age (Díaz-Guardamino et al., 2019, p. 6111-6112).

An important 10th century BCE find, known as the Ría de Huelva hoard, should also be mentioned (Lull et al., 2013, p. 613) (Figure 2.3). The hoard contained 400 bronze pieces of fairly consistent tin content, and comprised of "carp's tongue *[lengua de carpa]* swords and solid-hilted swords, spearheads, ferrules, and Sicilian and Cypriot-type fibulae", with isotopic analyses indicating metal sources from up to five regions, including the Sierra Morena, and possibly Sardinia (Lull et al., 2013, p. 611). There are also other cases of pre-colonial connections and exchange toward the end of the LBA of the Iberian southwest (Ortiz, 2012, p. 468-469).

Figure 2.2 Examples of LBA stelae (50-100 cm in size) from southwest Iberia at the Museo Arqueológico Provincial de Badajoz, Spain. 2019.

Figure 2.3 Sample of Huelva Hoard from the Museo de Huelva, Spain. 2019.

While it is important to note that pit field sites of the earlier Bronze Age periods often have evidence of Late Bronze Age occupation, the seemingly open and ephemeral settlements of these earlier periods appear to have changed in function with the emergence of the Late Bronze Age (Serra & Porfirio, 2017, p. 227). The ways in which these sites functioned is not entirely clear, but some suggest that the data indicates that some of these sites were dedicated to metallurgy, as attested at the lowland site of Misericórdia 2 (Beja) by the presence of crucibles (Serra & Porfirio, 2017, p. 227). This discovery, along with others at similar open lowland sites such as Martes (located in the Serra d'Ossa microregion), suggests that metallurgy took place at both lowland and upland settlements, but cannot determine with any sense of certainty that they were exclusively dedicated to the production of metal (Serra & Porfirio, 2017, p. 227).

Smaller upland sites have been investigated in the Central Alentejo, such as the site of Rocha do Vigio 2 (Monsaraz) (Mataloto, 2012). Excavation of the site revealed three overlapping LBA oval hut structures (Mataloto, 2012). The final phase of occupation was determined through radiocarbon dating and placed the hut between the late 10th century and early 8th century BCE (Mataloto, 2012). Ceramics found at the site are typical of LBA typologies of southwest Iberia, including large S-shaped vessels with elongated handles; though no ornate burnished ceramics were found (Mataloto, 2012). The site has been interpreted as a small metallurgical settlement located on the outskirts of the Monsaraz mountains settlement network (Mataloto, 2012). The poorly published settlement of Ratinhos (Moura) also provides insight into this site-type. The site is 5 ha in size and seems to have been established in the 16th c BCE; the site encompasses several walls and platforms protruding from the surrounding landscape (Mataloto, 2012). Several circular, domestic huts have also been identified in addition to artifacts typical of the LBA, such as burnished ceramics, *adocchio* fibulas, ivory bracelets, and ceramics with incised decorations (Mataloto, 2012).

The site of Outeiro do Circo is a recently excavated LBA site located atop an elongated hill, fairly low in altitude (275 MASL) but with a significant visual domain over the surrounding landscape (Serra, 2014, p. 77). The site has a defensive wall delimiting the site (described as a defensive system with bastions, moats, and a double-wall section) approximately 17 ha in size, making it one of the largest identified settlements of this period in the Iberian Peninsula (Serra, 2014, p. 77). Several lowland sites have been identified within 7 km of Outeiro do Circo – the primary investigator of the site has theorized that the wall indicates sovereignty of the community living in the surrounding landscape, with lowland villages exploited into providing essential resources (Serra, 2014, p. 77, 87). Considering the regional level, Outeiro do Circo is

hypothesized to have been a powerful site that imposed itself on a network of smaller villages that controlled important areas of crossing along the Guadiana and Cobres rivers (Serra, 2014, p. 87). Researchers theorize that the Guadiana River acted as a border, creating tensions between neighbouring chiefs whose villages competed for control of land, routes along the rivers; all of which are associated with the exploitation of raw materials, such as copper (Serra, 2014, p. 87). At the moment, it is difficult to assert whether sites were permanent, temporary, or seasonal (Serra, 2014, p. 83).

Due to a lack of dating, we are not able to identify the exact time when the large, walled, hilltop settlements of the LBA were abandoned. In fact, it seems that these sites had a fairly regular history of occupation from the Bronze Age onward, as Iron Age material culture is often identified at such sites (Mataloto, 2004, p. 126). The warrior iconography that emerges in the southwest during the end of the MBA and throughout the LBA suggests a newfound concern for symbolic warriorship and defence. During this time, large-fortified upland sites also appear, suggesting major shifts in settlement organization, with these sites located atop the highest ridges of mountain ranges in the region, providing increased visibility and control over significant routes of passage in the mountains' valleys and close to nearby copper sources.

2.4 Discussion

Generally, the late prehistory of the Iberian Peninsula is fairly undertheorized and post-processual approaches are sporadic, with some key exceptions (e.g. Boaventura, 2011; Lillios, 2008). When discussing social organization during the late prehistory of the southwest, there are several areas of controversy. During the LN/Chalcolithic, while it appears that fortified upland sites such as VNSP were also habitation sites, it remains unclear whether ditched enclosures such

as Perdigões, were as well. Further investigation into the potential for domestic occupation of ditched enclosures and upland walled sites is needed. More generally, the role of ditched enclosures remains unclear – how did they function and shape social organization? What were their roles in the building of identities? Did these sites act as a place where goods and ideas were exchanged at a large scale? How might have gatherings at these aggregational centres reverberated throughout the wider region? What was the cosmological significance of these sites? Additionally, the occupational sequence of ditched enclosures remains unclear – some ditches are found to be recut while others appear abandoned thus prompting the question: why were certain areas of these sites abandoned while other parts remained in use? The discovery of ditched enclosures remains fairly recent in the Iberian southwest, thus formulating a myriad of areas for further research with the potential of shaping new generations of archaeologists. This thesis considers the long-term implications of earlier periods of activity in the region in shaping the LBA, and thus addresses some of the questions listed above.

One period that has generated ambiguity, but also a great deal of interest, is the end of the Chalcolithic and its transition into the Early Bronze Age, as this marks the appearance of Bell Beakers in the Iberian southwest. More widely, this period encompasses much larger debates regarding the significance of Beakers, their origins, and whether they reflect the arrival of new people. In regard to the region in question, it is generally agreed that rather than Bell Beaker sites existing, there are sites where Bell Beakers are present, and many of these sites seem to re-use upland walled Chalcolithic sites post-abandonment. However, some argue for continuous occupation and reconfiguration of the sites rather than abandonment and reoccupation.

Another area of research that has garnered attention recently is the cause of the Chalcolithic “collapse” toward the end of the period. This period sees an abandonment of

fortified occupations with a lack of architectural monumentality and a lack of construction. Sites become ephemeral during the transition into the EBA, with low-lying pit sites more recently considered the norm for this period. There are many unanswered questions about the Chalcolithic societal collapse and the transition into the EBA. For example, were open-air pit sites seasonal in nature? Did the collapse lead to depopulation or just an increase in mobility, as evidenced by non-permanent sites? Was there long-term or a moment of demographic/societal devastation or was this collapse an intentional social strategy to maintain local stability through mobility or abandonment? Is the lack of data during this period an epistemological illusion, particularly in the Estremadura? Overall, there is a lot of potential for research and the reinterpretation of antiquated theories for this period, especially with the increased detection of pit sites, encouraged by CRM work in the Alentejo. The Chalcolithic collapse and the nature of lowland, ephemeral sites of the EBA/MBA are further discussed in Chapter 5.

The LBA is perhaps one of the most poorly understood periods in question throughout all of Iberia (Lull et al., 2013, p. 611). In the Alentejo and the Spanish Extremadura, the Bronze Age sees the emergence of large, walled, hilltop settlements (Berrocal- Rangel & Silva, 2007; Soares et al., 2012). In some areas, these settlements are located at the highest peaks of mountain ranges. In the Central Alentejo, the placement of LBA settlements atop the natural bedrock of schist-covered mountains means there is a lack of stratigraphy. Additionally, the role and nature of lowland sites during the LBA is unclear – it seems they were used for metal production, though there is evidence of such activities at upland sites as well, both in the Sierra Morena of Spain and in the Monsaraz mountains of Portugal. The possibility of seasonal occupation at both upland and lowland sites must also be taken into consideration; at the moment, it is impossible to tell if distinct communities lived in the uplands and lowlands, or if (as previously theorized at the

site of Outeiro do Circo) upland populations controlled those living in the plains, thus indicating the presence of chiefdom-type social organization.

Generally, this period appears to bring about an increase in architectural investment (compared to the EBA/MBA) and the concentration of populations within a smaller number of large sites (compared to the LN/Chalcolithic) – such is the case in the Sierra Morena. Additionally, the LBA "warrior" stelae remain poorly understood due to their lack of provenance and a focus on iconographic studies. However, recent research programs have encouraged new approaches to the study of these monuments, encompassing raw material sourcing and a focus on the communities that constructed and used them (e.g. Díaz-Guardamino 2019; 2019b). Naturally, early studies of the LBA in the southwest were influenced by the archaeological reality in southeast Spain, specifically the nature of the El Argar/Argaric culture (ca. 2200 – 1500 BCE) and traditional cultural-historical and Marxist interpretations of such sites. Large-fortified upland settlements also appear in the LBA, suggesting a new political order or class based on defence and warriorship; the significance and role of the stelae and the evidence (or lack thereof) of a "warrior" society or class are discussed in Chapter 5.

2.5 Summary

This chapter presented the archaeological background of southwest Iberia's late prehistory. The first section discussed the theoretical trajectory of Iberian archaeology for those unfamiliar with the political history of Spain and Portugal and state of the field throughout the Peninsula. The subsequent section presented the archaeological context of study for those unfamiliar with the region and/or the periods in question, presenting trends in settlement organization from the LN/Chalcolithic to the LBA. The next section outlined prevalent theories

in regard to social organization and settlement organization throughout these periods, presented areas of controversy, and articulated areas for further research – some of which are covered in the context of this thesis.

CHAPTER 3: METHODOLOGY

3.1 Introduction

The previous chapter provided the archaeological context of this study, discussing southwest Iberia's late prehistory for those unfamiliar with the region and periods in question, discussing trends in settlement organization from the Late Neolithic to the Late Bronze Age. Thus, the chapter presented areas of debate, constraints of certain theories, and formulated areas for further research – some of which will be covered in the following chapters.

This chapter introduces the methodology applied in this research project and consists of two parts. As this thesis considers the long-term to contextualize social organization during LBA, the first part of this chapter discusses the means by which settlement patterns were identified in the region, from the Neolithic/Chalcolithic to the LBA. This was achieved through the creation of a settlement database for the Serra d'Ossa microregion, located in the Central Alentejo of Portugal. A geographic information system [GIS] was used to plot and interrogate a corpus of previously published data from the region, allowing for the qualification and quantification of shifting settlement patterns as a means of detailing the influence of potential fluctuating aspects of socioeconomics and environmental conditions throughout the chronology in question.

The second part of this chapter presents the methodology used to survey the emergence of the LBA at the site-level, thus introducing the techniques and approaches applied during fieldwork over two seasons of excavation and survey at the Late Bronze Age hilltop settlement of Castelo Velho da Serra d'Ossa [CVO].

With the presentation of these methodologies, this thesis aims to provide a transferable methodological framework with applicability in varying regions. While studies of Iberia's late

prehistory tend to be very microregional or site-level in scope (there are exceptions), this approach provides a means by which to successfully undertake such short-term research while also contextualizing the data and allowing for its eventual insertion into wider discussions of European late prehistory more generally and applicability to varying social theories.

3.2 Database Sources

The regional dataset that forms this study's analytic basis has been gathered from a variety of archaeological work carried out in the Central Alentejo (roughly encompassing the Évora district), focusing on the modern municipalities of Alandroal, Arraiolos, Borba, Estremoz, Évora, Redondo, and Vila Viçosa. This area has been recognized as the Serra d'Ossa microregion.

In Portugal, the collection of archaeological data is undertaken under the approval of the *Direção-Geral do Património Cultural* [DGPC] (Directorate-General for Cultural Heritage), a government organization. The DGPC acts as a regulating body for all archaeological work carried out in Portugal and has defined four categories that are representative of the primary sources of data collected and managed. Category (A) refers to multiannual archaeological research projects; Category (B) refers to projects aiming for archaeological awareness and heritage education; Category (C) includes preventative work along with the maintenance and conservation of preserved sites; and Category (D) encompasses emergency work undertaken at sites in danger of destruction (Decreto-Lei no. 164/2014, 2014, artigo 3, p. 5635).

As is the case in many parts of the world, archaeology conducted by CRM companies produces a vast amount of data each year (Birch, 2010, p. 47). Therefore, it is essential that the often raw, uninterpreted archaeological data are not only reported and made publicly available,

but also analyzed and synthesized by researchers with wider interpretive schemes (Birch, 2010, p. 47). This project aims to contribute toward this goal.

The settlements in the thesis database originate from four sources. The first is the database stemming from Dr. M. Calado's PhD dissertation *Menires do Alentejo Central* (2004), kindly provided by Dr. M. Calado and R. Mataloto; an extensive catalogue listing all Neolithic and Chalcolithic sites in the research area.

The second source was the database stemming from R. Mataloto's Master's thesis *"Monte" da Idade do Ferro na Herdade da Sapatoa* (2004), which catalogues all of the Late Bronze Age and Iron Age sites in the region.

The third source supplemented the former two – Portugal's national database of archaeological sites, the *Portal do Arqueólogo*. This registry is maintained by the DGPC and contains information on both academic research projects and CRM literature. While applying for a permit to conduct archaeological work, valid for one year, researchers and professional archaeologists working in Portugal are required to provide a plan for publicly disclosing the archaeological work to the community (Decreto-Lei no. 164/2014, 2014, artigo 7, p. 5636-5637), with projects falling under Category (A) subject to annual progress reports and a final report within one year from the date of completion of archaeological work (Decreto-Lei no. 164/2014, 2014, artigo 8, p. 5637-5638). Results are thus required to be published in a monograph or article within five years of the completion of fieldwork and made available to the archaeological community (Decreto-Lei no. 164/2014, 2014, artigo 17, p. 5639).

Not all publications have been added to the portal, particularly those prior to the digitization project which began in 2013 (Direção-Geral do Património Cultural). In order to access certain datasets and geographic coordinates of the entries, users are required to apply for

access, which was granted for this project. Many sites are still missing from the database and the degree of information provided for each entry varies significantly – some submissions only include site name and location, while others have a description of materials and landscape, but no coordinates. These lacunae have been noted in the database.

The fourth resource consists of the several applicable *Cartas Arqueológicas* – these are publications listing all known archaeological sites within a given municipality and published by the various municipalities that fall within the borders of the Serra d'Ossa microregion (Calado, 1996; Calado & Mataloto, 2001; Calado & Roque, 2013). These were referenced to confirm and clarify citations from the previous sources.

There was a significant gap in the data as there were few long-term research projects with the goal of understanding social organization in the LBA of Iberia's southwest; and this has long been acknowledged (Lull et al., 2013, p. 605; Sanjuán, 1999, p. 338; Santos et al., 2008, p. 84). In turn, alongside the use of academic, municipal, and CRM data, this thesis draws upon the results of the author's fieldwork in the region. In 2018, B. Viseu partnered with R. Mataloto to initiate the Castelo Archaeological Project at the LBA site of Castelo Velho da Serra d'Ossa in order to shed light upon the LBA, a hitherto poorly represented period in the region's archaeological history.

3.3 Database Construction and Content

The methodological basis of this study involved the creation of a database in Microsoft Excel (later exported into ArcMap 10.5) containing entries for all settlement sites in the Serra d'Ossa microregion from the Neolithic/Chalcolithic to the LBA. The database consists of eight

fields: name, location, date, size, type, *concelho* (municipality), work undertaken at the site, and associated bibliographic references. These fields are detailed below:

(1) Name

Sites were labelled according to their designated name originating from the various sources consulted. In Portugal, sites are typically labelled according to their assigned name and/or CNS (*Código Nacional de Sítio*). Site names were favoured over their assigned CNS identification as the latter is not available for every site – only those in the *Portal do Arqueólogo*, which presents its own set of issues.

(2) Location

The exact location of the settlements in question were provided through the various sources consulted. Many of the coordinates were originally presented in the EPSG (European Petroleum Survey Group) system which associates code numbers with a respective cartographic system. For example, the coordinates in question were in EPSG 20790 which refers to the Hayford-Gauss Datum Lisboa military coordinate system (Madeira, 2010). All coordinates were then converted to the Universal Transverse Mercator [UTM] coordinate system.

(3) Date

Each site was accorded one of the four following chronological designations: (a) Neolithic/Chalcolithic [5500 – 2200 BCE], (b) Chalcolithic [3000 – 2200 BCE], (c) Early/Middle Bronze Age [2200 – 1700/1700 – 1200 BCE], and (d) Late Bronze Age [1200 – 800/700 BCE]. These designations were imposed through an initial reference to the DGPC

registry and other datasets, but often required further clarification through more detailed consideration of the original reports.

Sites under the category '(a) Neolithic/Chalcolithic' are composed of settlements that were originally divided into three distinct categories – Neolithic/Chalcolithic, Late Neolithic/Chalcolithic, Early/Middle Neolithic; Chalcolithic. These sites were rather unsatisfactorily consolidated into a single chronological group as it was rarely possible to determine more specific dates within these temporal ranges on the basis of material culture reported (often surface material, with manual ceramics known to occur within more than one Neolithic and/or Chalcolithic period). Settlements of this nature were identified through survey of the region, during which architectural data, manual pottery, and other finds such as stone tools were discovered, thus indicating the site contained Neolithic and/or Chalcolithic occupation, with specific distinction between the two not always possible. As previously discussed, the chronological focus of this study is that of the Late Neolithic/Chalcolithic into the Late Bronze Age. In turn, sites categorized as Neolithic/Chalcolithic were included as not to exclude potentially significant areas of Chalcolithic occupation.

Settlements labelled as '(b) Chalcolithic' refer to those sites appearing to have distinctively Chalcolithic materials and architecture, though periods of earlier and later occupation may have existed at the sites.

There were some settlements categorized under '(c) Early/Middle Bronze Age' though few are known in the research area. The Early and Middle Bronze age are bundled in the context of this study as there is limited data on these periods in the research area, with many interpreting them as a transitionary period between the Chalcolithic and the Late Bronze Age.

The final designation, '(d) Late Bronze Age' refers to settlements with clear evidence of occupation dating to the LBA. Some of these sites also have earlier and later periods of occupation.

(4) Size

Some of the sites included in the database contain information on site size, as provided through the various sources consulted. Many listings do not provide this information, but in the cases where such information is available, site size is listed in hectares [ha].

(5) Type

Most sites were categorized as either 'upland' or 'lowland' based loosely on Calado's (2004) and Mataloto's (2004) characterizations of settlements in the region. These categorizations have little to do with metres above sea level [MASL] but are instead conceptualized with reference to their location within a specific landscape and based primarily on the presence of surface materials and architecture.

Type – Lowland Sites

'Lowland' sites are thus defined as habitats located in the region's plains, valleys, and atop low hills and slope areas, without natural defensibility and generally located on soils with relatively high levels of agricultural production (Calado, 2004). Although there are different iterations of lowland sites at each chronological period, they can typically be grouped into two distinct subcategories: open vs. fortified.

During the LN/Chalcolithic, *open lowland* sites refer to those settlements in the plains and on low slopes, without evidence for "defensive" or "fortified" architecture. These sites also lack natural defensibility and make up the majority of lowland sites during this period.

During the Bronze Age, open lowland sites share many of the same characteristics in terms of placement in relation to the natural landscape. These sites also lack defensive/fortified architecture and are most typically interpreted as pit sites (*campos de hoyos*) in the wider southwest.

Fortified lowland sites typically refer to the ditched enclosures of the LN/Chalcolithic, with some containing evidence of EBA occupation. Interpretations of these sites vary; some argue for non-domestic function, but were included in the study, nevertheless.

Type – Upland Sites

'Upland' sites are located in places with evident natural defensibility on top of mountains, hills, or low spurs while still at an elevated point within the context of the surrounding plain. Upland sites existed during both the LN/Chalcolithic and BA periods. This thesis identifies three subcategories of upland sites, though not all subcategories are present at each chronological period. The three subcategory groups are: *open*, *fortified*, and *large-fortified* upland sites.

The majority of LN/Chalcolithic settlements are considered *open upland.* These sites are located in naturally defensible areas but lack evidence of enclosure walls. Calado (2004) suspects that other sites during this period may have enclosing systems of walls as indicated by microtopographic evidence, indicated by soil surface variation. If this is the case, upland sites with enclosing walls would fall under the following subcategory, fortified upland sites.

During the BA, open upland sites appear primarily during the LBA. These sites are fairly small (1-2 ha in size) and are characterized by evidence for metallurgical production (e.g. Monsaraz Mountains). In some places (e.g. Sierra Morena), these sites have been interpreted as watchtowers for large-fortified upland sites, discussed below.

Fortified upland sites typically have a series of defensive structures, such as walls, surrounding the site. These sites are located in areas with natural defensibility but are not located particularly high up in terms of MASL. During the Chalcolithic and the BA, these sites have defensive structures in place, such as at the Chalcolithic site of São Pedro and the LBA site of Outeiro do Circo.

Large-fortified upland sites primarily date to the LBA, though there is evidence of both earlier (EBA/MBA) and later (IA) occupation at some of these sites. These sites are distinct from fortified upland sites in that they are significantly larger (over approximately 10 ha), are located on the highest points in a region's landscape (according to absolute MASL), and have defensive structures the site. These sites are colloquially identified as LBA hilltop sites; and their emergence are the subject of investigation in this thesis.

*(6) Concelho (*municipality*)*

The research area in question is the Serra d'Ossa microregion located in the Central Alentejo of Portugal. The municipalities (*concelhos*) of Alandroal, Arraiolos, Borba, Estremoz, Évora, Redondo, and Vila Viçosa encompass this region, though the research area does not cover the full extent of all of these municipalities. In the database, location of sites within their municipality is provided in order to offer a general understanding of locale and for further consultation in the municipal archaeological publications.

(7) Work undertaken at the site

When available, information on the nature of research undertaken at each site was included in the database. Potential categories of work include survey, excavation, and construction monitoring (often referred to as "machining"). Most sites in the database have only been surveyed but oftentimes this provides substantial information on site chronology and size – enough for the purpose of this study. Some sites have been excavated through archaeological research programs, field schools, and rescue projects prior to construction work destroying the site. Others were discovered through construction monitoring; these were also included in the study.

(8) Associated references

Citations to references for each site were provided when such information was made available; this is not always the case as many sites have been identified but remain unpublished.

3.4 Visualizing the Database through GIS

The thesis database was used to create several maps using ArcGIS's ArcMap 10.5. These maps plot all of the sites detailed in the database, with specific symbology used to indicate type and chronological designation, thus providing a visual tool with which to define initial impressions of site placement as influenced by factors such as elevation, geology, soil quality, and access to water resources at each chronological period.

The maps consist of several layers. The World Imagery base map was provided by ESRI. The digital elevation maps [DEMs] were originally sourced from the Advanced Spaceborn Thermal Emission and Reflection Radiometer Global Digital Elevation Model Version 2 dataset

[ASTER GDEM2], provided by Dr. J. Williams (2017). The geological and mineral source maps of Portugal at a scale of 1:150,000 were provided by the Laboratório Nacional de Energia e Geologia, I.P. [LNEG]. Layers presenting the hydrology of Portugal were provided by OpenStreetMap. All maps were then projected into WGS 1984 UTM Zone 29N. These maps were then overlaid in order to aid in conducting a long-term analysis of settlement patterns and social organization.

3.5 Excavation and Recording of the LBA site of Castelo Velho da Serra d'Ossa

3.5.1 Introduction

This section details the excavation methods applied at Castelo, here being the one case study in the Serra d'Ossa microregion, and one of the few in the southwest, where there is available data to discuss this site-type. These site-specific data will be integrated with the long-term landscape information, as site-specific excavation data are fundamental to approaching questions related to the characterization of communities and their sites. A distinct lack of small-scale settlement or domestic data has previously led to insufficient interpretations and characterizations of the period based primarily on the presence of walls surrounding these sites and the iconography found on the 'warrior' stelae of the period. In turn, this section outlines the methodologies applied in the collection of site-level data by discussing the work undertaken at the LBA site of Castelo as this period is poorly represented in the region. In the following chapters, this work will be contextualized in the settlement history of late prehistoric populations of Iberia's southwest.

3.5.2 Identifying Castelo Velho da Serra d'Ossa

The earliest reference to ancient occupation in the mountains, at both Alto de São Gens and Castelo Velho, stems from the late 16th century, cited in a mid-18th century letter written by Friar Henrique de Santo António, a member of the Hermits of the Serra d'Ossa. The walled site of Castelo is located atop the second-highest elevation of the Serra d'Ossa mountain range, approximately 640 metres above sea level (Figure 3.1). The site, 14 ha in size as determined by its wall, is located across the length of a prominent ridge measuring 1200 m in length and 100 to 150 m in width (Mataloto, 2012, p. 190). The site's location atop the mountain, adorned with jutting shale outcrops and bedrock platforms, is also surrounded by deep valleys, thus making it the most inaccessible of the microregion's mountain villages (Mataloto, 2012, p. 190-191). Approximately 200 m down the mountain slope is a natural pathway called Meio Mundo (or "Half World"), allowing for the control of passage through the mountain and access to nearby fertile soils (Mataloto, 2012, p. 190).

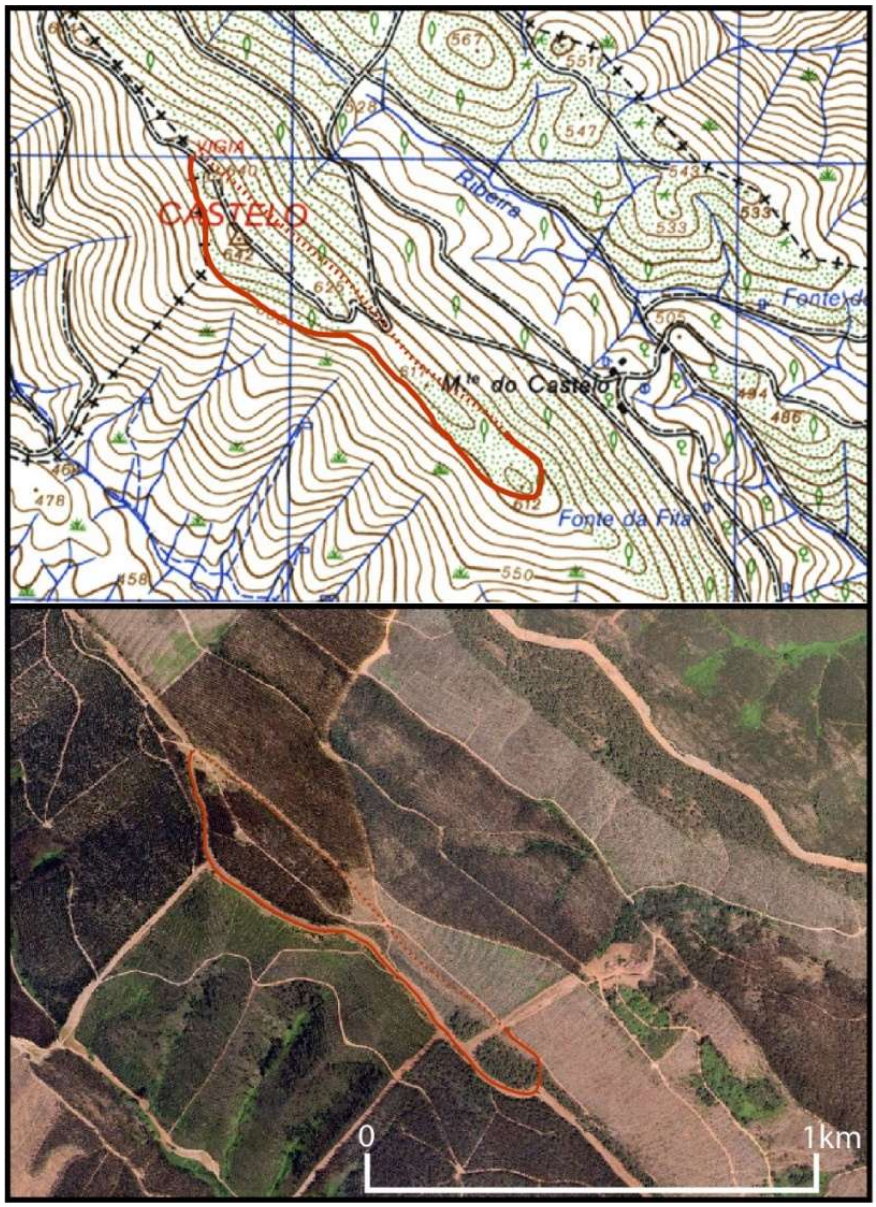

Figure 3.1 Location of Castelo Velho da Serra d'Ossa

The Castelo Archaeological Project was planned in 2017 with a five-year research plan to investigate the site of Castelo Velho da Serra d'Ossa [CVO] (which translates to "Old Castle of the Serra d'Ossa"), located near the town of Redondo in the Central Alentejo region of Portugal. The project is coordinated by R. Mataloto, B. Viseu, and G. Bispo, with the first two years of fieldwork undertaken in the summers of 2018 (three weeks) and 2019 (four weeks).

3.5.3 Excavation Methods

Excavation was undertaken with the support of professionals, field school students, and volunteers coming from North America, the UK, Portugal, and Hong Kong. The open area method of excavation was utilized, with screening undertaken in sensitive contexts and soil samples preserved for future study. Every layer or stratigraphic unit [SU] is individually registered on the basis of visible changes between deposits. Each layer is subsequently photographed (Panasonic LX-15, 24MP) and drawn by the excavators. Additionally, elevations are taken and added to the drawing. A context sheet is also completed, with the layer added to the sector's matrix. Each SU is assigned a unique number, generally in ascending order as each unit in the sector is identified and recorded. At the end of the season, the georeferenced layers are placed on a master plan of the site. Aerial photography of the site was undertaken, though structures are partially obstructed by the presence of overgrown eucalyptus trees.

Brief, small-scale work at the site in the early 2000s, under the direction of R. Mataloto, identified several structures along the main road that cuts through the site. At this time, the focus of excavation was in areas where ceramic sherds in connection were exposed at the surface level and at risk of destruction.

Three sectors were opened in 2018 – the Castelo Archaeological Project's first season of excavation (Figure 3.2). These excavation areas only represent a very small percentage (< 1%) of the site area the walls. Sector 1 [S1] is located off the main road at the NW end of the site. A 6m x 6m trench (partly obstructed by bedrock and a eucalyptus tree) was opened at the top of a low slope, cut by the opening of an old access road. The cut was also cleaned and recorded as it revealed archaeological remains. The platform was revealed in 2018 was recorded and removed

in 2019. S1 was extended to 10m x 6m in 2019 and several structures were uncovered toward the end of the season.

Sector 2 [S2] is located directly on the main road, just SE of S1. A 7m x 6m trench was opened at S2, as large schist slabs were partly visible at the surface. S2 was covered with tarp and backfilled at the end of the 2018 season and was not reopened in 2019.

Sector 3 [S3], located south of S2 along the main road received the most attention. A trench of 13m x 5m was opened at S3. This location was selected as a faint outline of a circular hut was visible at the surface. Subsequent excavation revealed a very large circular or oval hut constructed atop the bedrock with two distinct periods of construction. S3 was extended in 2019 to 15m x 7m so as to begin excavation within the hut.

In 2019 a new area of excavation was opened dubbed Sector 4 [S4], as horizontally placed schist slabs were partly visible at the surface, similar to S2. The opened trench was 4m x 4m in size. S4 was covered with tarp and backfilled following excavation.

Figure 3.2 Location of CVO Sectors 1 to 3

Excavation at Castelo was authorized by both the DGPC and the landowner, currently held by The Navigator Company, a pulp and paper company. The land encompassing Castelo has been safeguarded since the early 2000s which has prevented the planting and harvesting of eucalyptus, allowing for a sustainable practice that respects the cultural heritage of the Serra d'Ossa. In 2019, representatives of Navigator toured Castelo and recorded aerial footage of the site.

3.5.4 Laboratory Methods

The top layer, where the stratigraphy is unpreserved, is assigned a SU number of [00]. For example, The SUs of S1 are expressed by CVO[00], with subsequent stratigraphic layers assigned in ascending order by identification and recording – CVO[01], CVO[02], CVO[03], etc.

The organization of SUs for S2, S3, and S4 is similar, with the SU numbers starting in the thousands. For example, Sector 3's top layer is expressed as CVO[3000] with subsequent layers assigned as CVO[3001], CVO[3002], and upward.

Ceramic finds from the day are washed. All finds (diagnostic and non-diagnostic) are recorded in the site's catalogue and subsequently added to the laboratory database at the end of each season. Non-ceramic finds and diagnostic ceramics are assigned individual artifact numbers. Diagnostic ceramics encompass rims, shoulders, handles, bases, decorated, unique sherds, and sherds in connection (even if a distinctly diagnostic characteristic is not visible); sherds in connection are glued and receive a single artifact number. All non-diagnostic sherds from a single SU are counted, weighed, labelled, and re-bagged. Diagnostic sherds are assigned a unique artifact number, weighed individually, labelled, and re-bagged separately from the SUs non-diagnostic finds. For example, a rim from Sector 3, layer/SU 3010 is recorded and labelled as "CVO[3010].10".

3.6 Summary

The methodological approach outlined in this chapter may seem like a departure from established approaches in Iberian late prehistoric studies, in that it combines the proven potential of long-term diachronic studies (which are less common in the region) studies with short-term excavation data in order to establish a workable framework for the area ca. 3500 – 800/700 BCE. Iberia has the potential to forefront many debates regarding the emergence of pre- and proto-urban societies; optimistically, the application of this methodological framework will aid in the contextualization of Iberia more widely and assert its position in European and Mediterranean prehistoric studies.

This chapter presented the methodology utilized in this project. The first part considered the long-term with the aim of identifying settlement patterns from the LN/Chalcolithic to the LBA. This was achieved by creating a settlement database and GIS for the microregion in question.

The second part relates directly to the emergence of the LBA at the site-level and introduces the Castelo Archaeological Project and the excavation and laboratory methods applied in the study of the site. Overall, the aim of this chapter was to introduce the methodology applied to the study, with the following chapters detailing the data and analysis.

CHAPTER 4: DATA AND RESULTS

4.1 Introduction

The previous chapter introduced the methodology applied in this research project which consisted of two parts. The first detailed the means by which long-term settlement patterns were to be identified in the region and led to the creation of a regional database and the use of GIS to plot and interrogate previously published data. The second described the methodology applied in the excavation of the LBA site of Castelo Velho da Serra d'Ossa, which allowed for an in-depth, site-level study of the period.

This chapter outlines the data utilized in this research and presents the results of the methodologies detailed in the previous chapter, discussing what was achieved through the use of GIS, in addition to the excavation at Castelo, and how the two methods correlate and the results they have produced.

4.2 Landscape of the Serra d'Ossa Microregion

4.2.1 Environment and Climate

The Serra d'Ossa microregion, located in the Central Alentejo, is a landlocked area that is approximately 2000 km^2 in size, consisting of tall mountain ranges and deep valleys. Generally, within the microregion, areas of higher elevation tend to have sub-Mediterranean conditions. Lower areas, with a maximum elevation of 350 m, tend to experience Ibero-Mediterranean conditions corresponding with the Guadiana basin (Calado, 2001, p. 19). The valleys experience both sub-Mediterranean and Ibero-Mediterranean conditions (Calado, 2001, p. 19).

Climate is known to have changed around much of the world ca. 2200 BCE due to the 4.2ky BP aridification event. Within the context of the Central Alentejo, there is a significant gap

in terms of available paleoenvironmental data. Calado (2001) has argued that the main climatic factors (topography and the direction of the prevailing winds) of the Serra d'Ossa microregion are fairly stable, meaning that the fundamental relations influencing climate seem to have remained much the same since late prehistory (p. 18). However, the wider southwest was impacted by the 4.2ky BP event, with evidence of heightened aridification during this time, although it was not nearly as significant as in other parts of Iberia, such as the southeast and the La Mancha region of Spain (Blanco-González et al. 2018, p. 59 – 60),

4.2.2 Bedrock Geology and Hydrology

In terms of geomorphology, the Serra d'Ossa microregion lies on the Messejana fault, a major tectonic structure in Iberia – this created the peneplains/rolling hills characteristic of the Alentejo (Calado, 2004, p. 26; Villamor et al., 2012). Metamorphic (schist/shale) and igneous (granite, quartz) rock form the base of the region's geology, along with the presence of carbonate rock, such as limestone (Blanco-González et al., 2018, p. 36).

In the Central Alentejo, between Évora and Arraiolos, there is a nodal point where the hydrographic basins of southern Portugal's three primary rivers converge (rivers Tejo, Guadiana, and Sado) (Calado, 2001, p. 18, 70). Within the Serra d'Ossa microregion, only the Tejo and Guadiana are represented by tributaries, with the latter extending into the microregion itself (Calado, 2001, p. 18). The primary hydrographic basins represented in the area are the Degebe, Lucefecit, Asseca, Almadafe, Tera, and Divor rivers (Calado, 2001, p. 22-27).

The predomination of shale (particularly on the mountains) makes groundwater resources limited with yields below 50m3/day/km2 and soils with fairly low agricultural potential; primarily useful for pastoralism and hunting (Calado, 2001, p. 23, 26). These areas also have a

major disadvantage in terms of land-use capacity due to their steep slopes (Calado, 2001, p. 26). There were once many water sources on the mountains of the Serra d'Ossa, generally with reasonable rates of flow; however, the planting of eucalyptus trees in the mid 20th century has had harmful effects on these natural resources (Calado, 2001, p. 21). In the areas where carbonate rocks, granite, and quartz predominate, underground water yields are equally as minimal but proximity to fresh water sources in these areas allow for agricultural productivity (Calado, 2001, p. 26).

4.2.3 Soil Quality, Subsistence, and Resources

The soil in the Serra d'Ossa microregion is very acidic, meaning faunal, botanical, and bioarchaeological remains rarely survive, whereby radiocarbon dates are scarce in certain parts of the southwest (Blanco-González et al., 2018, p. 32; Calado, 2004; Day, 2013; Lillios, 2020, p. 200). Areas of higher elevation tend to have sub-Mediterranean conditions. Soil in the uplands, especially on the mountain ridges and surrounding slopes, is particularly thin, making agriculture very limited. Today, many of these areas are used as eucalyptus plantations. The dominant species, prior to the planting of eucalyptus were zambujeiro/wild olive tree (*Olea europaea var. sylvestris*), maritime/cluster pine (*Pinus pinaster*), stone pine (*Pinus pinea*), Portuguese oak (*Quercus faginea*), and cork oak (*Quercus suber*) (Calado, 2001, p. 18-19).

Lower areas, with a maximum elevation of 350m, tend to experience Ibero-Mediterranean conditions coinciding with the Guadiana basin (Calado, 2001, p. 19). In the Guadiana basin, the primary species are the zambujeiro and cork oak. The valleys experience sub-Mediterranean and Ibero-Mediterranean conditions, lacking Portuguese oak and pine trees but maintaining the same species as the previous in addition to the cade juniper (*Juniperus*

oxycedrus) (Calado, 2001, p 19). Generally, soils in the lowlands are deep and fertile, with good agricultural potential (Calado, 2001). Today, agricultural production in the lowlands comprises primarily of cork and vine.

Subsistence data from southern Portugal during the LN/Chalcolithic are extremely fragmented (Valente & Carvalho, 2014). Due to a combination of poor preservation, recovery, and reportage, the scarce palaeobotanical record and the irregularity of the available zooarchaeological data have led to limited interpretations for subsistence practices during this period (Valente & Carvalho, 2014). Additionally, there is a patchy representation of sites – investigations of ditched enclosures are favoured over excavations of small-scale rural settlements, for example (Valente & Carvalho, 2014). In turn, "a priori theoretical assumption dominates over empirically supported arguments on crucial aspects [related to subsistence] of the Neo-Chalcolithic time period" (Valente & Carvalho, 2014, p. 226). Overall, subsistence is often assumed on the basis of scarce available data or data from comparable contexts in Iberia.

This significant gap in the archaeological record means that our understanding of subsistence practices is limited for the LN/Chalcolithic and virtually non-existent for the Bronze Age. Sporadic botanical evidence and faunal remains have been identified throughout the periods in question, with archaeological, palaeobotanical, and zooarchaeological studies undertaken. In spite of this, subsistence studies are limited, with current data not indicative of the extent to which domestic versus wild species were consumed or the role of the 'Secondary Products Revolution' in the area (Valente & Carvalho, 2014).

It has been argued that "'absence of evidence' cannot be considered 'evidence of absence'" thus meaning that the southern Portuguese data should be interpreted in its broader Iberian context, which points to agriculture being a part of Early and Middle Neolithic

subsistence practices, with the limited archaeological, palaeobotanical, and faunal data supporting this statement (Valente & Carvalho, 2014, p. 236). Data from the Estremadura and Alentejo indicate that from the Late Neolithic onwards there was a decrease in wild species, though this is heavily dependent on the type of site (i.e. larger aggregational sites) (Valente & Carvalho, 2014, p. 237). Generally, it appears that hunting was widespread from the Late Neolithic onwards, becoming increasingly important with the emergence of the Beaker phenomenon (Valente & Carvalho, 2014, p. 237).

Palaeobotanical data from the Estremadura indicate the presence of domesticates such as wheat, barley, and fava, in addition to wild plants such as acorn and olive trees during the LN/Chalcolithic (Lillios, 2020). Faunal data from both the Estremadura and Alentejo have indicated the presence of ovicaprids, swine, cattle, deer, boar, and aurochs (Lillios, 2020; Valente & Carvalho, 2014, p. 237). The domestication of ovicaprids, swine, and cattle appear to have been well-established by the LN/Chalcolithic (Valente & Carvalho, 2014, p. 237).

One study considered three primary faunal collections from the Alentejo's Late Neolithic (Juromenha [located in the Serra d'Ossa microregion], Moinho de Valadares, and Perdigões) and determined that hunting played a more important role in the Alentejo than it did in the Estremadura, with red deer making up 22-36% of the collections (Valente & Carvalho, 2014, p. 233). Swine were numerous (17-49%) in the Alentejan collections (their status of wild, domestic, or tamed is unclear), ovicaprids were the most represented domesticate (28-35%), and bovines appear to have been very limited (0-14%) (Valente & Carvalho, 2014, p. 233). Data from the Chalcolithic does not change the overall picture: swine, ovicaprids, and bovines were represented, with a decrease in wild game at some sites but an increase in such at others,

highlighting the apparent variability of subsistence practices according to site-type during the Chalcolithic (Valente & Carvalho, 2014, p. 234).

Contexts that have been identified as "Beaker Chalcolithic", representative of the period encompassing the second half of the 3rd millennium BCE into the early 2nd millennium BCE along with the presence of Beaker ceramics (i.e. end of the Chalcolithic and transition into the EBA), determined that ovicaprids, bovine, and swine were all present, but that there was a significant increase in wild game (Valente & Carvalho, 2014, p. 236)

Generally, from the Bronze Age of southern Portugal are extremely limited. While ceramic finds such as large storage vessels, storage pits, and agricultural implements such as scythes and sickles have been identified at Bronze Age settlements, the palaeobotanical evidence is practically non-existent, and the faunal data are scarce. The BA pit site of Torre Velha 12, located in the Alentejo, demonstrated that ovicaprid and cattle husbandry played an important role in subsistence, with a low representation of swine and limited hunting activities (of primarily rabbits and hares) (Senra et al., 2019). However, as the data is so scarce and limited to very few sites, an interpretation of subsistence throughout the Bronze Age periods is nearly impossible to present with any certainty.

Theoretically, availability of key raw materials exploited by prehistoric communities could have influenced settlement location. However, in the Serra d'Ossa microregion, it appears that raw material resources were primarily "locally" sourced (Mataloto et al., 2017). Concerning lithic sources, studies of the vast lithic assemblage from the fortified upland Chalcolithic site of São Pedro indicate that most analyzed artifacts (84%) were made from unclassifiable jasper and siliceous schist fragments (Mataloto et al., 2017, p. 157). It is also important to note that 87.2% of the assemblage was locally sourced (Mataloto et al., 2017, p. 157). Amphibolite – used to

make polished stone tools during the Chalcolithic – is well represented in the Degebe basin, south of the Serra d'Ossa mountain range (Calado, 2001, p. 21).

Turning to metal sources – with copper known to have been used by communities in the region from the Chalcolithic – the Central Alentejo is not particularly rich in copper sources, although there are several occurrences in the Serra d'Ossa microregion, with copper veins located at various points on the mountain range, in addition to a large vein existing along the left bank of the Tera stream, stemming from the abandoned Mostardeira mine (Calado, 2001, p. 21; Mataloto et al., 2017, p. 107). Mineral occurrences in the microregion consist primarily of copper and iron; tin is found to the north of the microregion, in Elvas. Bronze alloy is not known from the southwest until the second quarter of the second millennium BCE, aligning with the MBA (1700-1200 BCE), with widespread production of tin bronze occurring during the LBA (1200-800/700 BCE) (Valério et al., 2014; Valério et al., 2018, p. 255)

4.3 Long-term: Settlement Data and Results

4.3.1 Introduction

This research examines settlement data from 205 sites located in the Serra d'Ossa microregion of the Central Alentejo (Table 4.1). These sites date from the Neolithic to the Bronze Age. Certain sites are registered twice in the case that their occupational sequence overlaps with other chronological periods included in this study (e.g. Evoramonte, which dates from the EBA to the LBA).

This data was then added to a database and interrogated using GIS, with the site's height (in MASL), location in the context of the wider landscape, and proximity to natural resources taken into consideration. This data was then used to inform the research about the region's wider

chronological and geographic context. In order to detail the emergence of the LBA in the region, archaeological data from two seasons of excavation at the site of Castelo Velho da Serra d'Ossa was also considered, with the results informing the research about emerging themes and patterns of settlement organization during the LBA, discussed in depth in Chapter 5.

Table 4.1 Sites of the Serra d'Ossa Microregion (Neolithic/Chalcolithic - LBA)

	Neo/Chalcolithic	EBA/MBA	LBA
Open Lowland	61	0	10
Fortified Lowland	3	1	0
Lowland Total	**64**	**1**	**10**
Open Upland	110	0	10
Fortified Upland	2	0	4
Large-Fortified Upland	0	1	3
Upland Total	**112**	**1**	**17**
Total # of Sites:	**176**	**2**	**27**

Overall, this section presents the data and results acquired through the construction of the thesis database and maps, in addition to excavation at the large-fortified upland site of Castelo. Interpretations and characterizations of both the long-term settlement data and the short-term excavation data will be discussed in-depth in the following chapter (Chapter 5).

4.3.2 Neolithic/Chalcolithic

During the Neolithic/Chalcolithic in the Serra d'Ossa microregion, there are a total of 64 lowland sites and 112 upland sites (Figure 4.1). Of the 64 lowland sites, 61 were categorized as open lowland sites, while three (Malhada das Mimosas, Juromenha 1, and Águas Frias) of the 64 were identified as fortified lowland sites, as they are ditched enclosures. 110 of the 112 upland sites were considered to be open upland, while two (São Gens 1 and São Pedro) of the 112 were

fortified upland sites. With the exception of the fortified lowland and fortified upland sites, most sites are under 2 ha in size.

There are significant differences in open versus fortified sites for both the lowland and upland subcategories during the Neolithic/Chalcolithic. However, it is important to note that sites considered fortified are almost always those that have been excavated to some extent. The categorization of a site in both lowland and upland settings as 'open' appears to be an epistemological illusion as the majority of these sites were identified through survey, with no further archaeological work undertaken to determine as to whether they were enclosed by ditches or walls. In turn, many of these sites have been identified on the basis of ceramic and lithic finds, with little to no architecture visible at the surface. Therefore, the lack of available data for these unexcavated sites has influenced the disparity between sites subcategorized as either open or fortified. However, Calado (2004), who conducted the survey of the region, suspects that many of the open upland sites have fortified "defensive systems" as identified by microtopographic evidence (p. 37), and more recently by aerial photography and geophysics.

During this period, there are several clusters of settlements in the region. The majority of sites are located to the east. Many of these settlements appear to be located near the region's mountain ranges, along the natural paths created by their valleys, and are located on either low slopes and hills or in the plains. There is also a large cluster of Chalcolithic lowland sites located along the west bank of the Guadiana River, a major hydrographic feature of the southwest. Interpretations of these long-term settlement patterns will be discussed in-depth in the following chapter (Chapter 5).

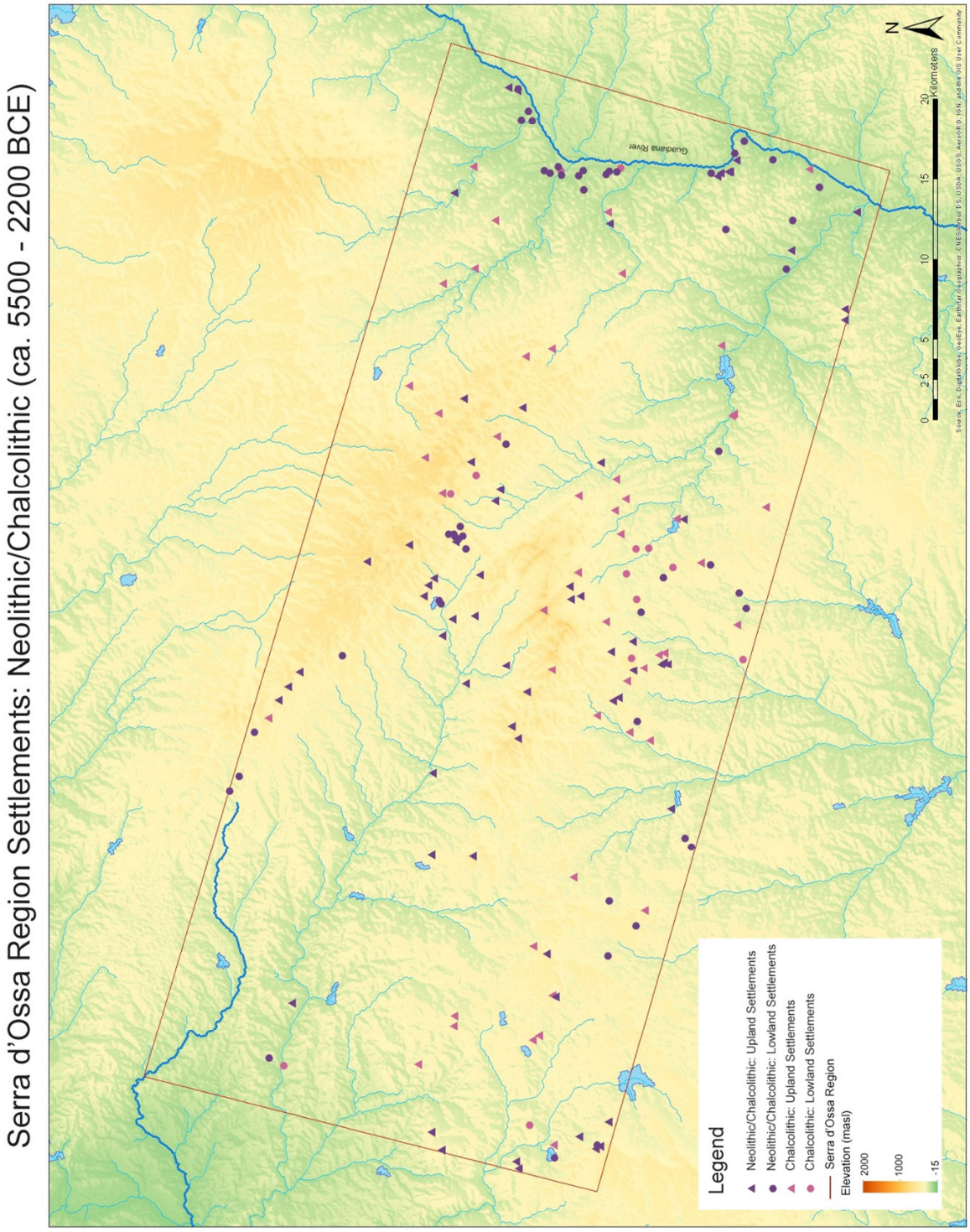

Figure 4.1 Serra d'Ossa Region Settlements: Neolithic/Chalcolithic (ca. 5500 - 2200 BCE)

4.3.3 Early/Middle Bronze Age

During the EBA/MBA in the Serra d'Ossa microregion, there are only two known sites that appear in the literature – Evoramonte and Malhada das Mimosas 2 (Figure 4.2). On the face of it, this suggests a striking population decrease (or aggregation), from the preceding 176 sites of the Neolithic/Chalcolithic. Lowland pit sites (*campos de hoyos*), now characteristic of this period in the southwest have not yet been identified in the Serra d'Ossa microregion. Malhada das Mimosas 2 is a fortified lowland site – a ditched enclosure – dating to the Neolithic/Chalcolithic with evidence of later occupation during the Early Bronze Age. Evoramonte is a large-fortified upland site with evidence of occupation from the EBA to the LBA. This follows the southwest trend, with upland sites dating to the EBA/MBA often part of a longer occupational sequence extending into the LBA (a phenomenon found in the Sierra Morena of Spain, for example). In turn, both of these sites are rather large in size, though their size aligns with their earlier and later occupational sequences and is not necessarily representative of their EBA/MBA occupation. Additionally, both sites present periods of continuous occupation, rather than isolated EBA/MBA occupation.

It should be noted, however, that the apparent lack of EBA/MBA sites might be illusionary, due to a regional research bias that has focused on upland sites and searched for 'Argaric' equivalents (i.e. of the El Argar, a BA "culture" of southeast Spain – cf. Lull et al., 2011), leading to a neglect of earlier Bronze Age periods, a situation which will also be discussed in Chapter 5 (Mataloto et al., 2013, p. 306; Pérez et al., 2011, p. 138, 152). The most apparent example of this is found in the Portuguese Estremadura, where fifty radiocarbon dates once reflected human occupation in the region from the Mesolithic, Neolithic, and Chalcolithic periods; though not a single date covered an archaeological context dating to the first three

quarters of the second millennium BCE – the available radiocarbon dates stopped at the end of the third millennium and only appeared again during the Late Bronze Age (Pérez et al., 2011, p. 138, 152). Additionally, it is important to note that a clear date for the end to the Chalcolithic and start of the EBA has not yet been determined with any sense of certainty. Characterizations of EBA/MBA settlement patterns will be discussed in the following chapter (Chapter 5).

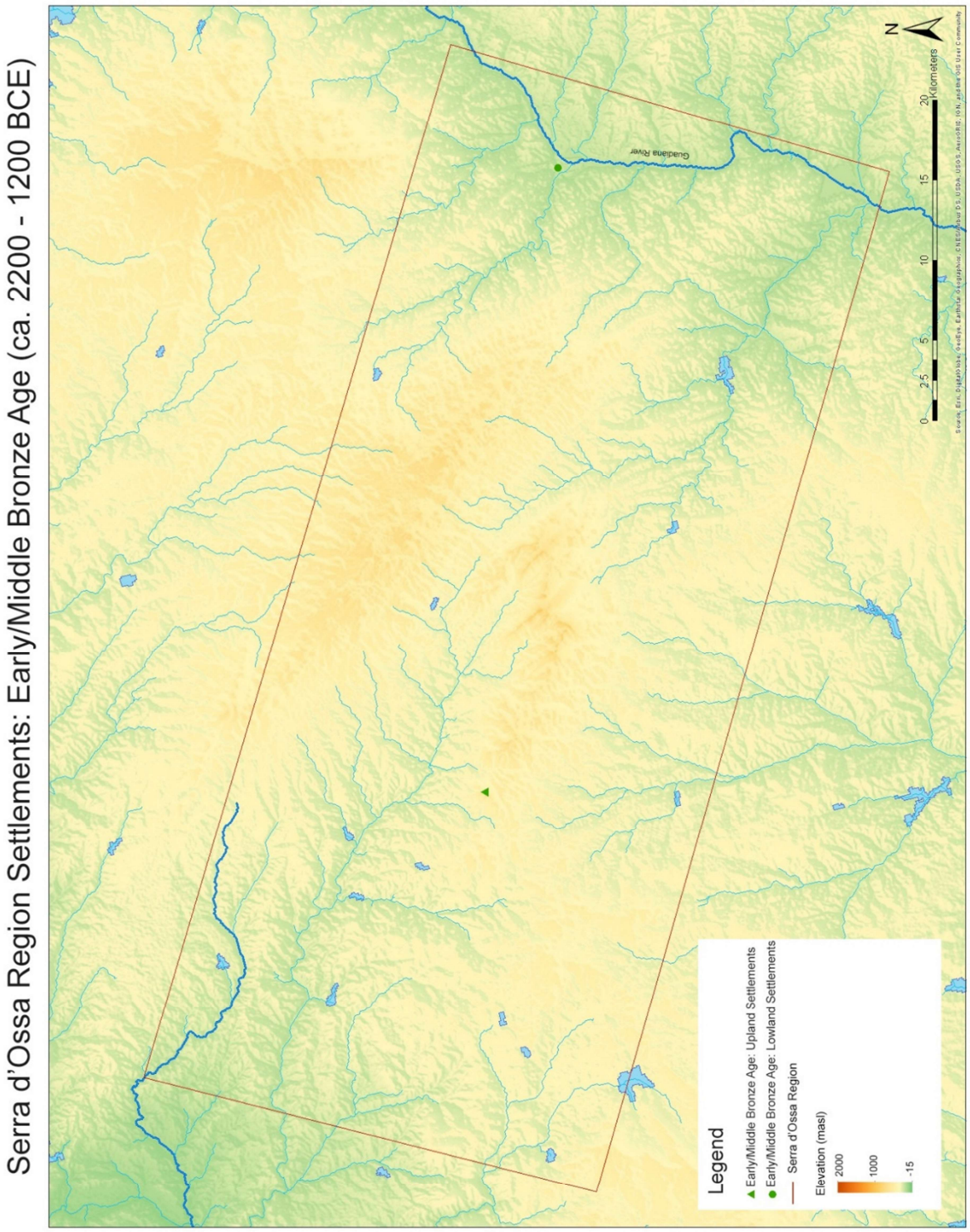

Figure 4.2 Serra d'Ossa Settlements: Early/Middle Bronze Age (ca. 2200 - 1200 BCE)

4.3.4 Late Bronze Age

In the Serra d'Ossa microregion there are 10 lowland sites and 17 upland sites dating to the LBA, with very little published for the majority of them (Figure 4.3). This would appear to be a significant increase in the number of sites and/or people than in the preceding EBA/MBA. All of the lowland sites have been characterized as open and are typically under 1 ha in size. There are ten open upland sites, four fortified upland sites, and three large-fortified upland sites.

Survey at the open upland LBA sites of Martes and Fonte Ferrenha, located in the Serra d'Ossa microregion, suggest that metallurgy took place both in open and fortified upland settlements (Serra & Porfírio, 2017, p. 227). These sites are typically under 2 ha in size.

Four fortified upland sites of the LBA have been identified in the Serra d'Ossa microregion but are poorly published. A wall has been identified at the fortified upland site of Espinhaço do Cão, located on a hill less than 2 km (as the crow flies) south of Castelo, along with an LBA ceramic assemblage (elongated nub handles, ornate burnished ceramics) aligning with those at Castelo. These sites are also typically under 2 ha in size.

Three large-fortified upland sites have been identified in the region of study – Evoramonte, São Gens, and Castelo Velho da Serra d'Ossa (Castelo). These sites are significantly larger than other sites from their chronology, are located in strategic places at the highest elevations in the Central Alentejo, and are surrounded by walls or natural defensive circuits (Mataloto, 2012). The extent and position of these sites are unique to the LBA. Interpretations of the settlement data of the LBA will be discussed in-depth in the following chapter (Chapter 5).

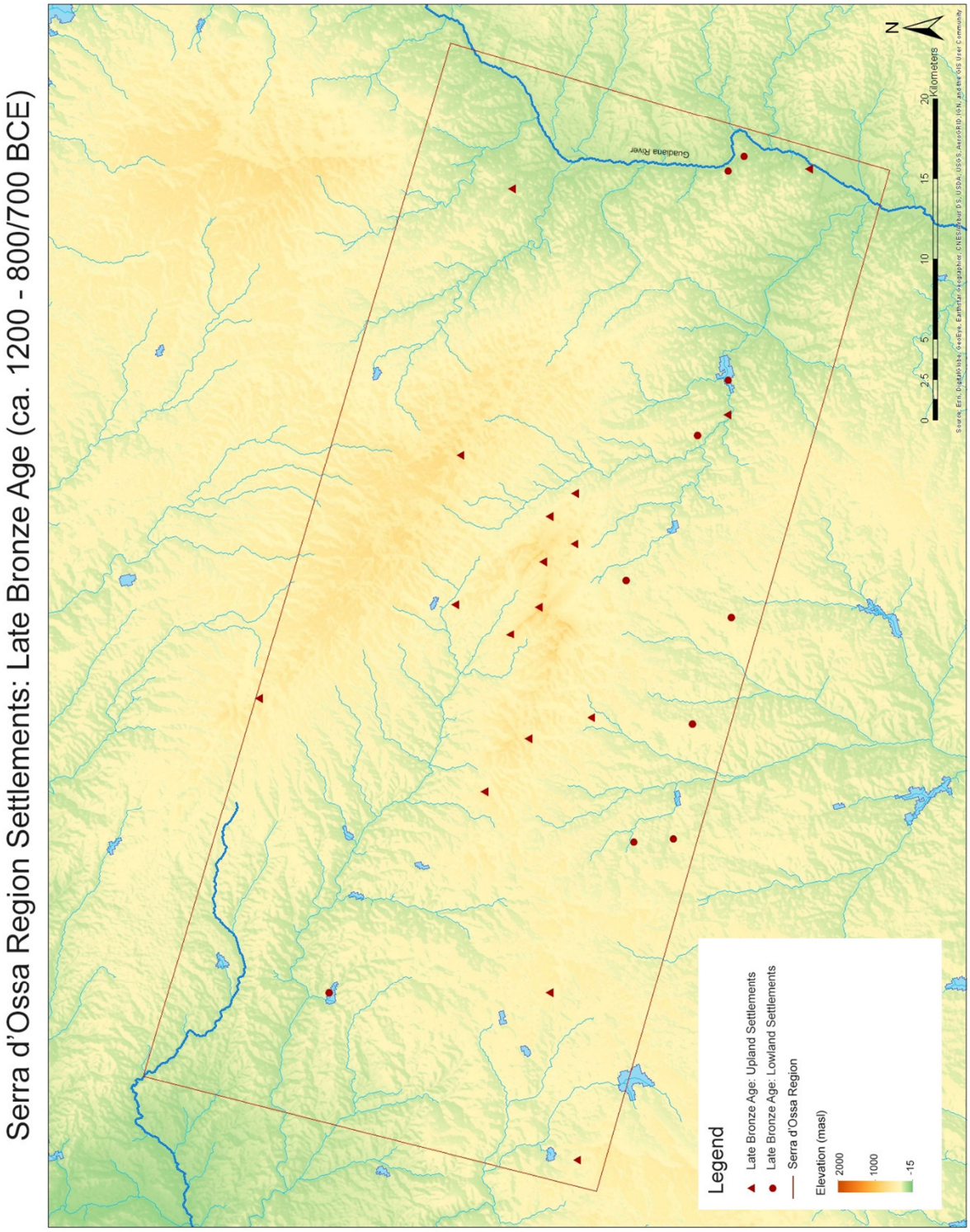

Figure 4.3 Serra d'Ossa Region Settlements: Late Bronze Age (ca. 1200 – 800/700 BCE)

4.4 Site-Level: Excavation Data and Results

This section presents an overview of the results of two years of excavation at the LBA site of Castelo, located atop the Serra d'Ossa. The project is coordinated by R. Mataloto, B. Viseu, and G. Bispo, with fieldwork undertaken in the summers of 2018 (three weeks) and 2019 (four weeks). The data provided in this section represent the one case in the microregion where there are available data to discuss this site-type, and one of the few excavated LBA sites in the wider southwest. Results from excavation have revealed what may be the largest LBA hut in the southwest, thus adding to our understanding of social organization during this period. In turn, these data aims to present a better characterization of settlement during the LBA of the microregion and the wider southwest. Interpretations of the period have primarily been based on the size of these settlements and the presence of walls surrounding them, in addition to iconography depicted on stone stelae and special finds. The data presented here, in the context of long-term settlement patterns of the Serra d'Ossa microregion aims to reconceptualize interpretations of the LBA and to approach questions regarding prehistoric place-making and settlement aggregation.

4.4.1 Sector 1

Work at Sector 1 [S1] consisted of two areas – the trench (6m x 6m, later expanded to 10m x 6m, partly obstructed by a tree) and the cut (revealed by the opening of an old access road). The cut, which was partly visible prior to work at the site, was extensively cleaned and recorded, thus revealing a sizable structure consisting of overlapping horizonal schist slabs stacked atop the mountain's natural bedrock (Figure 4.4). The preserved part of this structure is

5.4 m across and 1.4 m in height. Ceramics forms typologically ascribable to the Late Bronze Age were recovered from the cut.

Figure 4.4 CVO, Sector 1 – The Cut

Excavation in S1 revealed a stone platform consisting of horizontally placed schist slabs, which was recorded in 2018 (Figure 4.5). Initial layers (including the platform proper and a small deposit located at the northwest corner of the trench) revealed primarily Iron Age ceramic forms, with BA forms appearing in subsequent layers. The deposit (CVO[02], [03]), set against the stone structure, continued past the level of excavation, and possibly continues under part of the stone structure (CVO[04]). However, large schist stones prevented further excavation.

The sole metal artifact from Castelo was a bronze chisel, found in the top layer of S1 among other Iron Age forms.

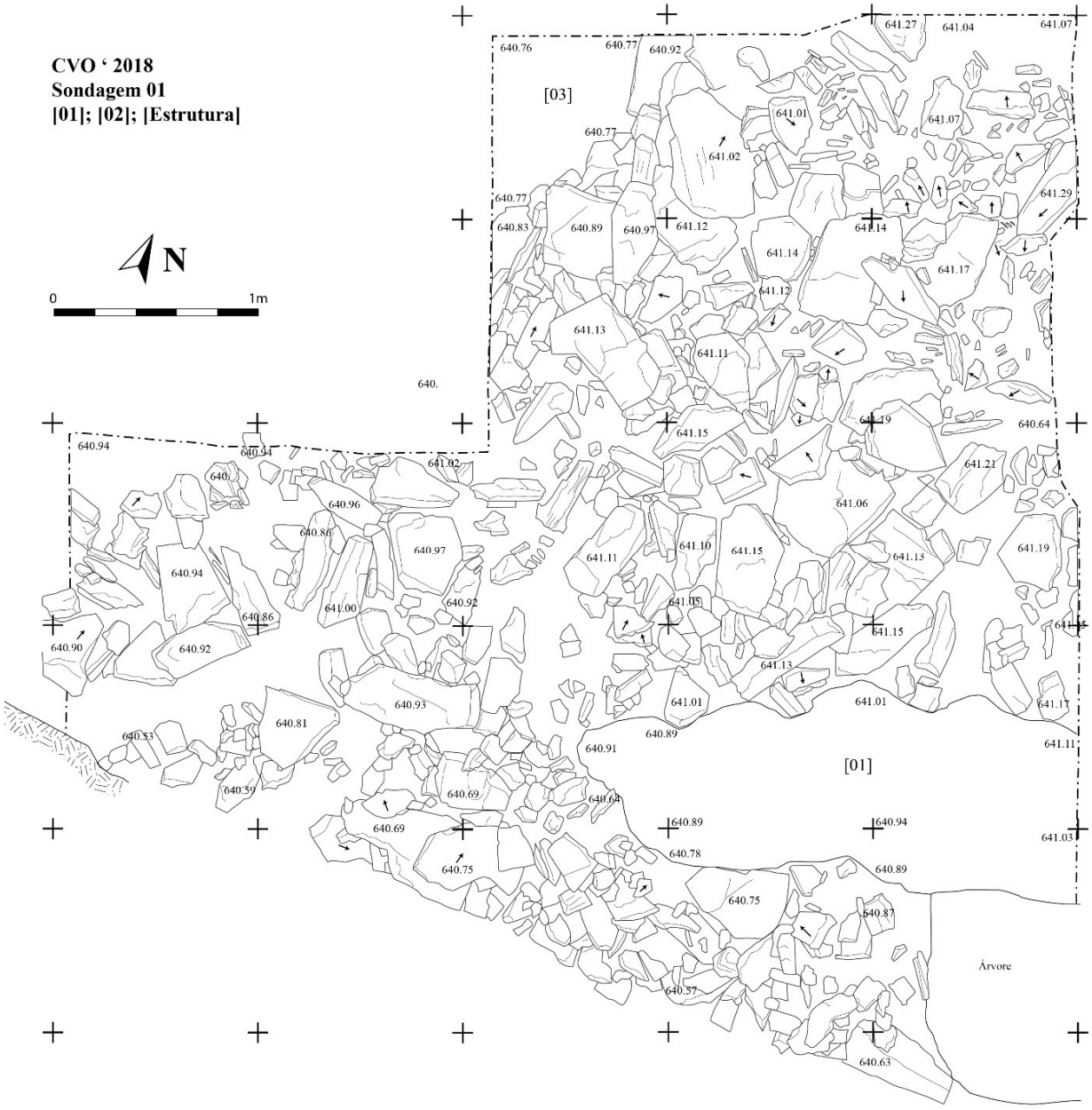

Figure 4.5 CVO[04] – Structure

The S1 trench was expanded northwards in 2019, to 10m x 6m. Beneath the platform, excavation revealed several layers dating to the Late Bronze Age, identified by ceramic types consistent with the period, such as burnished decoration (no ornate burnished sherds have been identified in S1), brushed finishing (*escovilhados*), and some pre-firing incised decorations, in addition to two indeterminate linear structures uncovered at the end of the 2019 season (Figure 4.6). A total of 1176 artifacts (16.9 kg) were recovered from Sector 1.

Figure 4.6 CVO[23] left, [33] right – Two Indeterminate Linear Structures

4.4.2 Sector 2

Excavation at Sector 2 consisted of a 7m x 6m trench and revealed a platform consisting of horizontally placed schist slabs (Figure 4.7). Ceramic typologies consistent with the Late Bronze Age were recovered, such as those with ornate burnished decoration (Figure 4.8). A total of 217 artifacts (2.2 kg) were recovered from Sector 2.

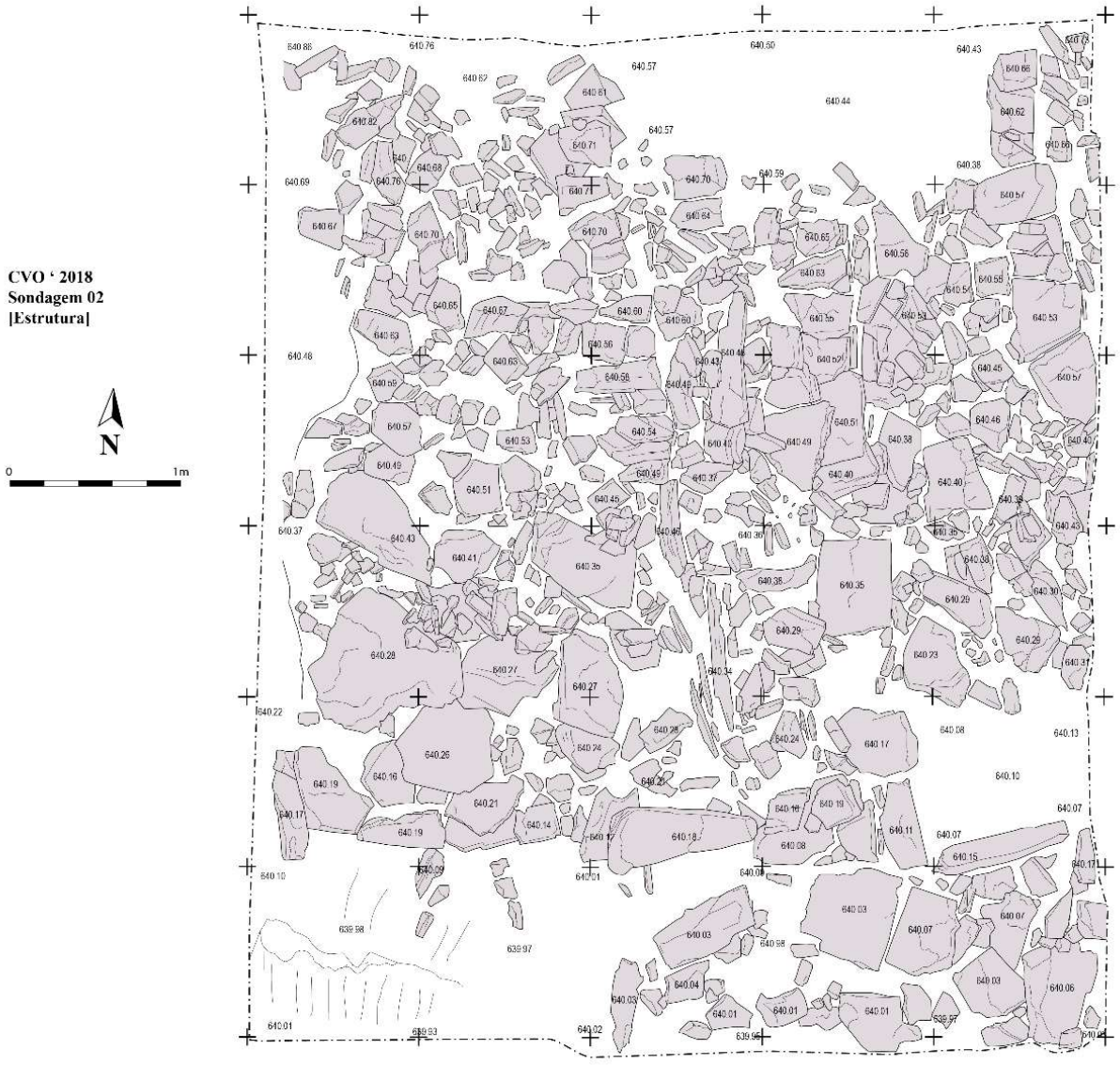

Figure 4.7 CVO[2004] – Structure

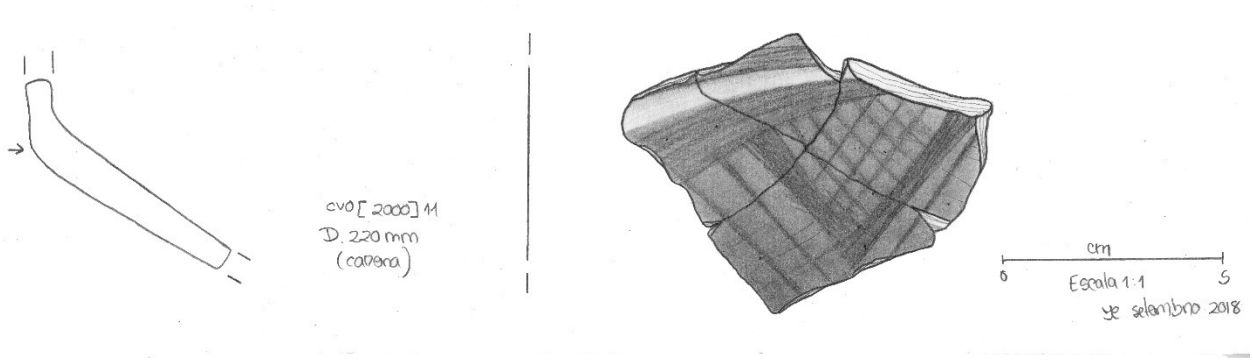

Figure 4.8 CVO[2000].11 – Shoulder with Ornate Burnished Decoration

4.4.3 Sector 3

Excavation at Castelo revealed a large hut (*cabana*) structure preserved along a main access road, with an interior of up to 176 m² in size with a circular shape assumed (Figure 4.9). LBA huts in southwest Iberia are typically circular or oval in shape, fairly small (3 to 5 m in diameter) and consist of dry-stone wall foundations, with the structure made from primarily perishable materials (Cardoso et al., 1998, p. 11; Senna-Martinez, 1995). Circular or oval in shape, the S3 hut can safely be identified as one of the largest known LBA *cabanas* in Iberia's southwest.

The entire extent of the hut has not yet been excavated, but it is expected that much of the structure has been massively destroyed due to the eucalyptus plantation on the west side of the road. The foundation of the hut consists of two major phases of construction – the earlier defined by a narrow line of vertically placed schist slabs slotted into the bedrock, and the later defined by a wider line of horizontally placed schist slabs atop the bedrock (Figure 4.10).

Figure 4.9 Sector 3 – Aerial View of the Hut. 2018.

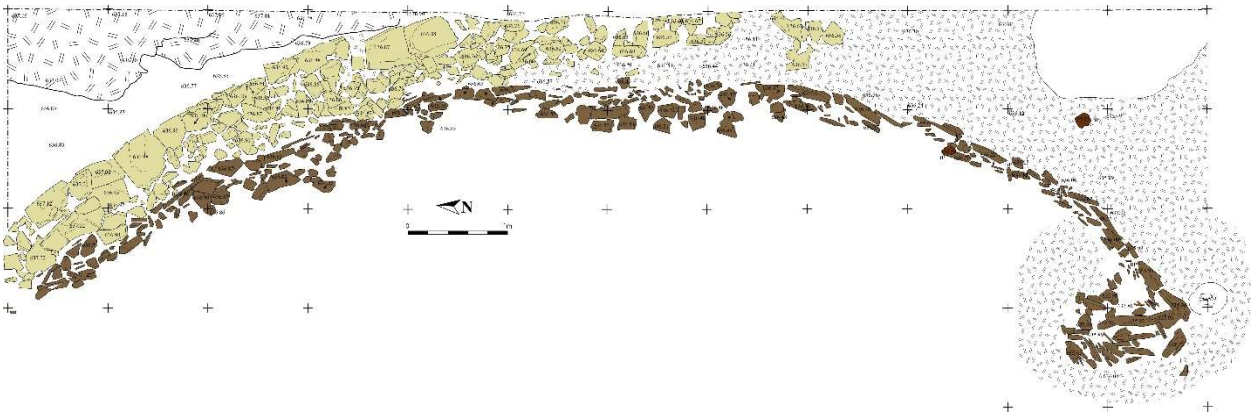

Figure 4.10 Sector 3 - Two Phases of the Hut. 2018.

The interior of the hut contains a complicated chronology, evidenced by overlapping walls, post holes, and ceramic finds typical of the LBA (ornate burnished – Figure 4.11, brushed, and incised decorations, elongated nub handles), in addition to Iron Age ceramic forms.

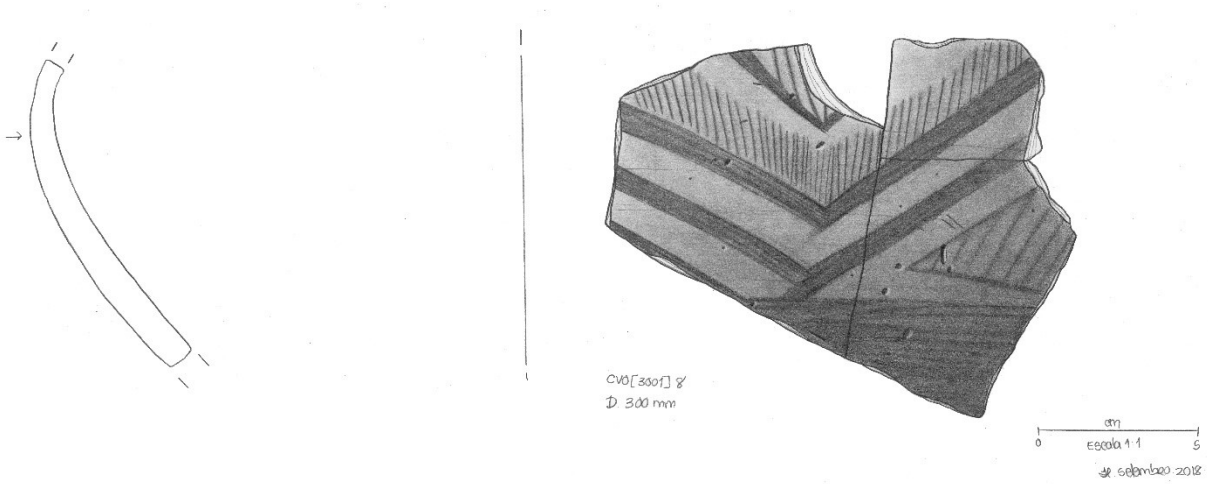

Figure 4.11 CVO[3001].8 – Shoulder with Ornate Burnished Decoration

Post holes and remains of what may be part of a smaller structure – perhaps an interior hut/dividing walls or a support system for the larger hut – are architecturally similar to the earlier base structure, though their full extent is not perceptible due to their fragility (Figure 4.12).

A large post hole (CVO[3029]) marks the entrance to the hut, located at the southeast end. The entrances of LBA huts are typically oriented toward the rising sun, though a functional explanation is often applicable, with southeast entrances located downhill thus minimizing the entrance of water and sediments, considering the placement of the hut (Cardoso et al., 1998, p. 17).

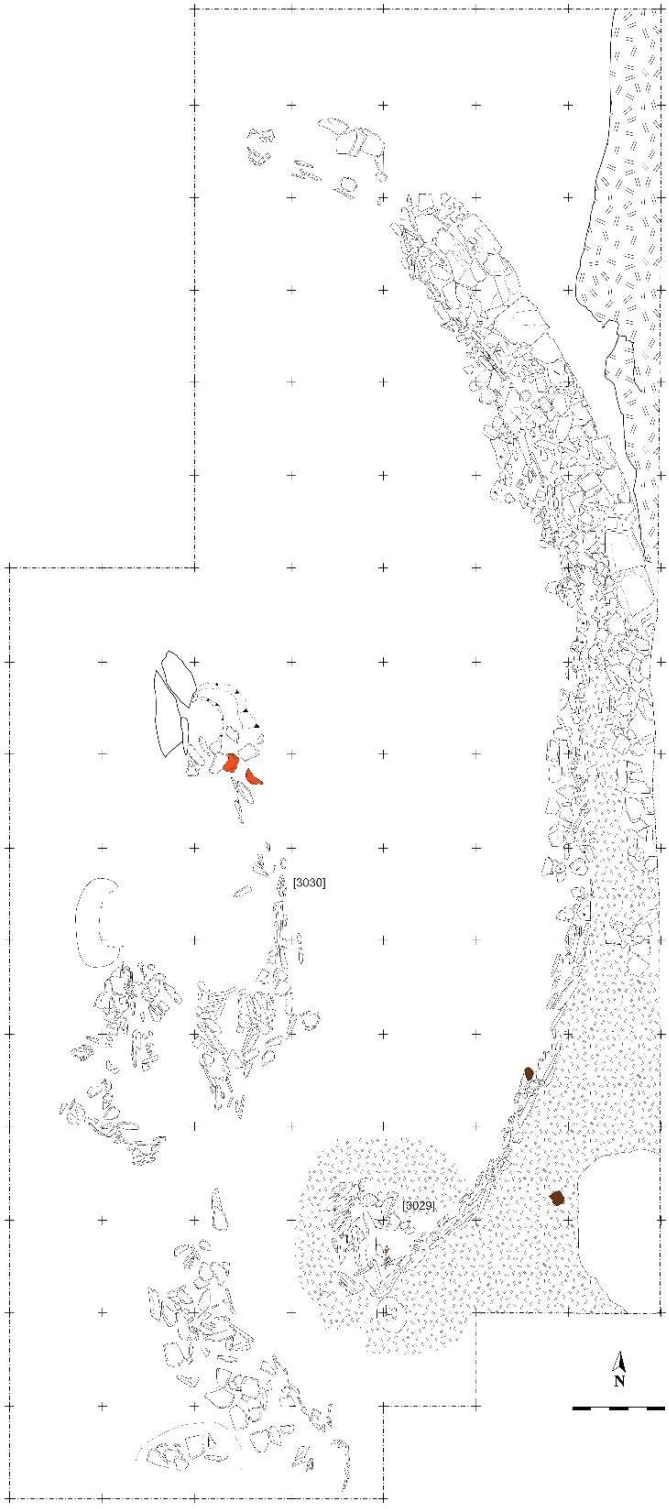

Figure 4.12 CVO Sector 3 Plan – including interior hut structure [3030] and entrance post-hole [3029].

Hearths have been found both within and outside LBA hut structures and usually have a clay surface layered over a foundation of ceramic sherds (usually burnished) and small stones (Senna-Martinez, 1995). A hearth (CVO[3024] – clay layer, [3025] – ceramic sherd/stone layer) was identified within one of the smaller hut structures (CVO[3030]), though a large eucalyptus tree has been planted atop it thus partially destroying it.

An adjacent SU (CVO[3010]) consisting of many ceramic sherds in connection (a total of 454 diagnostic artifacts were recovered from this layer, in addition to 917 body sherds) was identified, indicative of a dedicated cooking and/or storage area (Figure 4.13). A total of 6847 artifacts (128.1 kg) have been recovered from Sector 3.

Figure 4.13 CVO[3024] – Hearth, Clay Layer

4.4.4 Sector 4

Sector 4, opened in 2019 as an indeterminate structure, was partly visible at the surface, along the main access road. Excavation revealed a structure consisting of horizontally placed schist slabs (Figure 4.14). The slabs were smaller in size than that down the access road at S2, though the two structures are architecturally similar. The ceramic assemblage consisted of LBA forms, primarily with burnished (ornate and simple), brushed finishing, and some pre-firing incised decorations. A total of 84 artifacts (0.98 kg) were recovered from Sector 4.

Figure 4.14 CVO Sector 4 – Indeterminate structure

4.4.5 Fieldwalking

Survey of the east and west slopes around the area of excavation is challenging due to the presence of old eucalyptus trees and their fallen leaves, leading to a slippery surface and poor

visibility of the ground. Several structures and ceramic sherds have been identified, south along the road of the excavation area, including indeterminate linear structures and possibly other hut structures. Additionally, the site's surrounding wall has been identified at several points across the mountain, particularly in areas along the mountain's several access roads.

Survey has discovered several cup-marks, located on a natural ridge/platform on the east slope, near the area of excavation. These cup-marks, suspected to align with the Bronze Age occupation of the site, have been photographed and recorded (Figure 4.15). Additionally, carvings have been identified atop a rock on the west slope. These carvings have been photographed and will be recorded next season.

Figure 4.15 Cup Marks (*covinhas*) at Castelo

4.4.6 Summary

This section presented the results from excavation at the large-fortified upland LBA site of Castelo, the one excavated example of such a site in the microregion and one of the few excavated LBA sites in the wider southwest. This section aimed to present the small-scale excavation data, particularly the associated architecture and material culture. In the following chapter, these data will be discussed in the context of the long-term settlement patterns in attempt to better characterize the LBA of the Iberian southwest, thus approached with regard to themes of place-making and settlement aggregation

4.5 Summary

This chapter outlined the acquisition of data utilized in the research in addition to the results of the methodologies detailed in the previous chapter. The results from a long-term perspective revealed the widespread organization of settlements amongst prehistoric communities in southwest Iberia from the Neolithic to the Bronze Age. Initial impressions formed from these data will inform the analyses described in the following chapter, considering patterns and trends throughout the Serra d'Ossa's late prehistory.

From a short-term, site-level perspective, results from the excavation at Castelo presented detailed information on a period previously underrepresented in the Central Alentejo – the Late Bronze Age. Reflecting on the wider chronological context of the Serra d'Ossa microregion, the following chapter will present a theory of social organization for the LBA, drawing on the data from Castelo, and considering the interrelated theories of place-making, aggregation, and middle range societies. The publication of these data intends to contribute toward an increased

understanding of the LBA across the wider southwest, as minimal settlement data are available for this period, particularly in modern southern Portugal.

CHAPTER 5: DISCUSSION

5.1 Introduction

The previous chapter outlined the data and results from the two methodologies applied in the thesis –long-term settlement data and the short-term site-level data. Analysis of the long-term data produced initial impressions of settlement organization from the Neolithic/Chalcolithic to the LBA, thus providing the temporal context for the emergence of the LBA. Assessment of the short-term data presented a test-case for large-fortified upland settlements of the LBA, a site type currently underrepresented in the region's literature. To reiterate, this research aims to consider and answer the following questions:

(1) Applying a long-term chronological perspective situated in a microregional context, referencing the wider region when data are unavailable, what factors/processes underpinned and drove any shifts in settlement, natural and/or social, amongst communities in the southwest Iberian Peninsula during the LN/Chalcolithic to the Late Bronze Age (ca. 3500 – 800 BCE)?

(2) Examining a shorter period of time (the LBA) within the microregion of study, while also reflecting on the wider chronological context, how are themes of place-making and settlement aggregation manifested in the LBA of the Serra d'Ossa microregion and how might this test-case relate to what is happening in the wider southwest during the LBA?

This chapter presents a discussion, examining the methodologies applied and data/results from the previous two chapters in light of the archaeological background presented in Chapter 2. This chapter highlights the results of research and develops an outline of social organization and structure during the LBA in the Serra d'Ossa and wider southwest, highlighting the significance of settlement in both place-making and aggregational processes. Additionally, this chapter

illustrates the value of long-term, diachronic analyses and how they inform and enhance site-level research.

5.2 Late Prehistoric Settlement Trends in Southwest Iberia: the Serra d'Ossa Test Case

While the previous chapter and distribution maps quantitatively presented settlements in the Serra d'Ossa microregion, these were static points on a Cartesian plane, decontextualized from their social/cultural meaning and human perspective (Barrett, 1994, p. 12-24; Brück & Goodman, 1999, p. 6). Having applied this long-term chronological perspective to the study area, several patterns of settlement emerged amongst prehistoric communities from the LN/Chalcolithic to the LBA. Potential factors and processes influencing these patterns, both natural and social, are considered in this section. These observations are considered in the context of the wider southwest.

5.2.1 LN/Chalcolithic Settlement Patterns in Context

As represented in the Serra d'Ossa microregion, there were many settlements during Neolithic/Chalcolithic that began to disappear toward the end of the Chalcolithic and throughout the EBA, thus culminating in the establishment of the large-fortified upland sites that emerged during the LBA. Considering the wider southwest, the LN/Chalcolithic is characterized by the emergence of increased social complexity, expressed through apparent demographic expansion as evidenced by an increased number of settlements and the various kinds of site diversification (namely fortified upland, fortified lowland, open upland, and open lowland) well represented in the Serra d'Ossa microregion. Furthermore, while most material culture was likely made within the region from locally available resources (as observed at the local site of São Pedro), the

Chalcolithic brought about an intensification of supra-regional networks of exchange allowing for the trade of raw materials (i.e. ivory, variscite, gold, marble, limestone, flint, quartz, cinnabar, sea/estuarine shells), eventually deposited at ditched enclosures (Mataloto et al., 2017; Valera, 2015, p. 409; Valera, 2017, p. 201).

Generally, the development of metallurgy marks the start of the Chalcolithic (ca. 3000 BCE), with the production of utilitarian objects such as chisels and awls, in addition to weapons like arrowheads and daggers (Valério et al. 2016). The site of São Pedro, located in the Serra d'Ossa microregion, is a significant source of data for Chalcolithic metallurgy in Portugal, with copper sourced locally (Mataloto et al., 2017). More widely and in the microregion of study, these periods also saw the emergence of monumental architecture (i.e. the local fortified upland site of São Pedro and the ditched enclosure site of Juromenha 1) and the continued construction of megalithic monuments, which are scattered throughout the local landscape (Valera, 2015). While this 'period' witnessed a number of new socioeconomic developments, it is evident that the Late Neolithic/Chalcolithic period of the Iberian southwest did not see the emergence of a state-level society, as once theorized in the Iberian southeast (Díaz-del-Río, 2011, p. 40; Sanjúan & Murillo-Barroso, 2013).

During this period, access to raw materials appears not to have been a defining factor of site distribution, as these materials were easily obtainable throughout the microregion. Most sites were located in areas with good agricultural and pastoral potential and were also close to water resources. While some sites were fortified during this period, either by ditches or by walls, they were not located at the highest points in the microregion, thus prioritizing accessibility over defensibility.

5.2.2 The "Collapse" of Chalcolithic Society

The shift from 176 sites in the Neolithic/Chalcolithic to two sites in the EBA/MBA suggests that this region experienced a major disjuncture in settlement organization and demography towards the end of the third millennium BCE (even when one allows for the likely underrepresentation of EBA/MBA sites due to research biases). While this collapse and decrease in anthropic signatures has long been acknowledged (cf. Blanco-González et al., 2018, p. 57; Valera, 2015; Valera et al., 2019, p. 9), this study has for the first time qualified and quantified these changes with settlement data from the Serra d'Ossa microregion.

While it might be tempting to explain this major Chalcolithic disjuncture with reference to climatic shifts (ca. 2200 BCE) or the appearance of the Beaker phenomenon (ca. 2650 BCE), the data does not concur. The start of the collapse predates the 4.2ky BP event (Blanco-González et al., 2018), and the latter appears not to have had a major impact on Chalcolithic settlement organization, with beakers found in Chalcolithic contexts, perhaps created to suit the need for increasingly diversified forms of ideological representation (Valera & Basílio, 2017; Valera et al., 2019). Due to the early appearance of these novel ceramic vessels (and their associated burial practices and other forms of material culture), they have typically not been associated with the incursion of outsider populations (Cardoso, 2014, p. 56; Valera et al., 2019). Recent aDNA evidence has supported this interpretation as Beaker contexts in Iberia do not share genetic similarities with Eurasian steppe populations, with genetic similarities associated primarily with preceding populations of Iberia (Olalde et al., 2018, p. 5).

Both sociocultural and environmental conditions must be taken into consideration when considering the collapse of Chalcolithic communities. The Serra d'Ossa microregion, along with the wider southwest, experienced a major shift in terms of site visibility and potentially

demographics, toward the end of the third millennium BCE, aligning with the region's second half of the Chalcolithic and transition into the EBA. While the global 4.2ky BP aridification event broadly aligns with this shift chronologically, it appears to have not been a leading cause for this shift. One study of the Iberian southwest during this period, conducted by Blanco-González et al. (2018), utilized radiocarbon dating, isotopic values ($\delta^{13}C$), and palynological data to explore the paleoenvironmental conditions of the region's late prehistory (p. 4). According to Blanco-González et al. (2018), "In the Southwest [Iberian Peninsula], demographic discontinuity is observable, yet climate and the 4.2ky BP event appear not to be contributing causes since the decrease in anthropic signatures pre-dates the climate change" (Blanco-González et al, 2018, p. 57). With the scarcity of data from the southwest, it remains difficult to identify the impact of this climatic event, which given that it lasted decades is likely to have had a not insignificant impact upon regional subsistence practices. Additionally, the subsistence data is very scarce throughout these periods (Table 5.1), meaning that increased identification of sites and further environmental studies are needed to identify and understand this impact.

Table 5.1 Detailing Subsistence, Lithic, Ceramic, and Metal Production, Iconography, and Burials in Southwest Iberia from the Late Neolithic to the Late Bronze Age

	Late Neolithic	Chalcolithic	Early/Middle Bronze Age	Late Bronze Age
Subsistence	• Animal husbandry and farming • Preference for terrestrial goods • Domesticated animals: ovicaprids, pigs, cattle • Some hunting of wild game: deer, boar, aurochs, mussels • Plant and cereal production (domesticates of wheat, barley, fava; wild acorn) • Grinding stones, groundstone tools indicating plant and cereal production	• Animal husbandry and farming • Preference for terrestrial goods • Domesticated animals: ovicaprids, pigs, cattle • Some hunting of wild game: deer, boar, aurochs, mussels • Plant and cereal production (domesticates of wheat, barley, fava; wild acorn) • Emergence of plates indicating consumption of solid, grain-based foods • Grinding stones, groundstone tools indicating plant and cereal production	• Animal husbandry and farming • Preference for terrestrial goods • Domesticated animals: ovicaprids, pigs, cattle • Some hunting of wild game: deer, boar • Plant and cereal production • Scythe implements, grinding stones, groundstone tools, large storage vessels indicating plant and cereal production (wheat, barley, fava)	• Animal husbandry and farming • Preference for terrestrial goods • Domesticated animals: ovicaprids, pigs, cattle • Some hunting of wild game: deer, boar • Plant and cereal production • Scythe implements, grinding stones, groundstone tools, large storage vessels indicating plant and cereal production (wheat, barley, fava)
Lithics	• Polished tools: adzes, hammers, axes, hoes • Chipped tools: scythe/sickles, blades, bladelets, geometric microliths • Schist/shale, flint, amphibolite	• Polished tools: adzes, hammers, axes, hoes • Chipped tools: scythe/sickles, arrowheads, blades, bladelets • Schist/shale, flint, amphibolite	• Strikers and elements of sickles/scythes (quartzite pebbles)	• Elements of sickles and denticulates
Ceramics	• Simple vessels • Spherical forms with hemispherical and globular shapes, deep and adorned with handles • Simple carinated forms • S-shaped vessels • Decorated ceramics (incised, small nub handles)	• Carinated & s-shaped forms disappear, plates/*pratos* emerge, cups (*copos*) • *Folha de accacia* decorations, *pratos de bordo almendrado* , *copos* • End of Chalcolithic - emergence of Beaker forms	• Interruption of Chalcolithic forms • Carinated forms • Burnished ceramics (simple)	• Open forms • Carinated bowls with medium and high carination • Large storage vessels of coarse wares • Burnished (simple and ornate), brushed, and incised decoration

Table 5.1 (continued) Detailing Subsistence, Lithic, Ceramic, and Metal Production, Iconography, and Burials in Southwest Iberia from the Late Neolithic to the Late Bronze Age

Metals	• N/A	• Utilitarian tools - awls, axes • Production: crucibles, prill, slag, ore • Small-scale production and low skill level • Copper, arsenic	• Utilitarian • Bronze alloy processing • Moulds for flat axes • Production: crucibles, prills, slag, ore • Copper with tin impurities, binary bronzes with 10% tin content • Some gold finds (decontextualized decorated rolled sheets, jewelry, etc.)	• Production: crucibles, prills, slag, ore, moulds • Bronze alloy processing • Copper with tin impurities, binary bronzes with 10% tin content • Variable tin content with low amounts of iron • Awls, spearheads, fibulae, rings, earrings/pendants, swords
Iconography	• Schist plaques • Anthropomorphic figures (ivory, bone) • Zoomorphic figures (ivory, bone) • Cup-marks • Variscite (turquoise/green stone - beads, pendants)	• Schist plaques • Anthropomorphic figures (ivory, bone) • Zoomorphic figures (ivory, bone) • Decorated ceramics (Bell Beaker - end of Chalcolithic) • Cup-marks • Variscite (turquoise/green stone - beads, pendants)	• Stone stelae (from MBA) • Cup-marks	• Stone stelae • Ornate burnished ceramics • Brushed and incised ceramics • Cup-marks
Burials	• Collective burials • Burials encompassing all sorts of individuals • Burials in ditched enclosures, caves, rock-shelters, hypogea, tholoi, dolmens	• Collective burials • Burials encompassing all sorts of individuals • Dehumanization; old bodies pushed aside to make way for new • Burials in ditched enclosures, caves, rock-shelters, hypogea, tholoi, dolmens	• Individual burials • Re-use of older tombs • Burials in pits, artificial caves/hypogea, dolmens, cists, occasionally in necropolises/cemeteries • Bodies in fetal position • Epicampaniforme - Horizonte da Ferradeira, Horizonte de Montelavar	• Individual burials • Re-use of older tombs • Burials in pits, artificial caves/hypogea, dolmens, cists, occasionally in necropolises/cemeteries • Bodies in fetal position

While the southwest was undoubtedly impacted by the 4.2ky BP event, with evidence of increased aridification during this time (Blanco-González et al. 2018, p. 42, 59), it appears that primarily sociocultural factors were driving these shifts in settlement organization. SCDRD analysis determined that there was a peak in human activity ca. 3000-2500 BCE followed by a decline in dated human activity ca. 2500 BCE, thus predating the 4.2ky BP event (Blanco-González et al. 2018, p. 42). However, reverberations of the event, experienced quite remarkably in other parts of Iberia such as the southeast and La Mancha of Spain (Blanco-González et al. 2018, p. 60), might be represented in the southwest by the collapse of supra-regional trade networks for raw materials, and indirectly, in the movement of people and ideas.

The social and cultural factors that influenced shifts in settlement during this period are varying. In the southwest, aggregational centres and their various functions – domestic and/or ritual – appear to represent an increase in social complexity with people appearing to have come together at these sites, depositing goods, special items, animal bones, and human remains into ditched enclosures. The potential ritual function of the sites and the collapse of long-distance trade networks, involving the movement of raw materials for the production of special goods (i.e. ivory, variscite, etc.), may have led to an inability to procure certain raw-sourced materials. This shift, in addition to others like the emergence of Bell Beaker forms and its accompanying package, including a move to individual burials (as opposed to the collective ones of the earlier period), may have challenged the social *status quo* of local Chalcolithic lifeways. The collective nature of these societies and their unprecedented size implies demographic growth which in turn, may have eventually been politically incapable of social organization at that scale, thus leading to conflict amongst competing factions, though potentially non-violent in character as the archaeological evidence does not provide clear evidence for violent conflict.

In sum, it is argued that the Chalcolithic "collapse" was not the direct result of an incursion of outside populations, nor the result of significant climatic shifts, with these changes appearing to predate the 4.2ky BP event and subsistence practices apparently consistent from the Neolithic to the end of the Bronze Age, though the data is very scarce. Instead, it seems that residual effects of the climatic event (such the collapse of supra-regional trade networks), ineffective organization and maintenance of increasingly complex and large populations, the emergence of potential belief-based conflicts (social/ritual) represented by the collapse of the collective ethos thereby contributed toward the breakdown of Chalcolithic society.

5.2.3 Early/Middle Bronze Age Settlement Patterns in Context

Characteristically Chalcolithic ways of life seem to disappear during the EBA, with some continuity into the MBA. In the southwest, the EBA/MBA is a period underrepresented archaeologically, partly due to research bias, but there is nevertheless a case of massive restructuring. Fortified occupations of the LN/Chalcolithic are eventually abandoned, there is little architectural monumentality, and the construction of positive structures is scarce (Blanco-González et al., 2018, p. 37; Lillios, 2020, p. 247; Mataloto et al., 2013, p. 322; Valera, 2015, p. 417). During this period, settlements appear to have been fairly ephemeral, due to populations undertaking less architectural investment, with the period more recently characterized by the presence of open-air pit sites/*campos de hoyos* (Deus et al., 2009; Lillios, 2020, p. 249; Santos et al., 2008, p. 84; Serra, 2014b, p. 280; Valera, 2015, p. 417). Overall, there appears to be an increase in movement perhaps encouraged by aridification caused by the 4.2ky BP, though the subsistence data are extremely scarce.

There are only two known EBA/MBA sites in the Serra d'Ossa microregion. This shift, from 176 sites in the Neolithic/Chalcolithic to two in the EBA/MBA, represents significant social restructuring, and the possibility of abandonment (Lillios, 1993). While there is an apparent invisibility of archaeological sites dating to the EBA/MBA in the region, it is also possible that this definition of settlement simply does not fit in the context of data from this period, as is the case during the EBA in southern England, for example (Brück, 1999, p. 55). Our modern, Western categorization of human practice and presupposition of the importance and role of a house may be obscuring the data. As settlements are typically identified according to the presence of archaeological materials, it is important to note that artifacts can exist within both ritual and domestic spheres – ontologically, this dichotomy and distinction may not have been as important and prominent to the individuals of the EBA/MBA in the Iberian southwest (Antunes et al., 2012, p. 278; Brück, 1999, p. 56; Soares et al., 2009).

The emergence of pit sites during this period in the wider southwest is indicative of the kind of site-type that may be present in the Serra d'Ossa microregion but has simply not yet been identified there due to a lack of archaeological work encouraged by development and the installation of pipelines, which has occurred in neighbouring regions. This is very likely as it is archaeologically clear that all Neolithic/Chalcolithic populations did not simply aggregate to two sites during the BA of the microregion. If this is the case, it is important to note the characterization of pit sites, which appear to have blurred lines between burial and living spaces, with pits serving different purposes often in close proximity to each other (Serra & Porfírio, 2017b, p. 44). Ceramics, loom weights, grinding stones, and anvils, all related to the quotidian and agricultural production, have been identified at such sites (Serra & Porfírio, 2017b, p. 45).

Whether an epistemological illusion or not, the Bronze Age clearly marks a transition to certain ways of life – the palaeobotanical and faunal data is too scarce to determine the nature of subsistence practices with any sense of certainty, but it appears that metal production continued (with the introduction of tin content, though very minimal) and perhaps unsurprisingly, the production of lithics likely diminished due to the production of metals, while new ceramic forms are introduced, with the Beaker phenomenon now replaced with more local forms, with carinated and simple burnished types prominent.

The various symbolic representations of earlier periods disappear, such as schist plaques and ivory anthropomorphic and zoomorphic figurines, with a relatively poor iconography in the EBA until the emergence of "warrior" stelae in the MBA. Burial practices also changed post-collapse; individual burials introduced with the emergence of the Beaker phenomenon continued, though there was an increased re-use of megalithic tombs, with individuals believing in their mythological significance, or claiming ancestral lineage to the original occupants of the area (Mataloto, 2007).

5.2.4 An Early Move to the Uplands?

EBA/MBA occupation is poorly represented in the southwest due to two primary factors. The first relates to possible ephemerality of settlements, with the village-based agriculturalist lifeways of the Neolithic/Chalcolithic peoples now replaced by increasingly mobile ways of life, as evidenced in a lack of architectural investment and an increase in the use of seasonal pit sites. This shift likely occurred due to a combination of increased aridity and political instability from group size. The second is due to the soil quality and geology of upland sites. This thesis postulates that in the Serra d'Ossa microregion, EBA/MBA populations established seasonal

non- or semi-permanent settlements in the uplands, at sites typically associated with their suspected LBA occupations, previously acknowledged in other parts of Iberia (Mataloto et al., 2013; Soares & da Silva, 2016). It is possible that EBA/MBA periods of occupation are masked by LBA sites. As large-fortified upland LBA sites, such as Castelo, sit nearly directly atop the bedrock, this thesis postulates that previous EBA/MBA occupation would be virtually obscured, with later inhabitants making way for the construction of new buildings and the disposal of archaeological material. This theory of EBA/MBA occupation existing at LBA is supported by the evidence at Evoramonte.

Evoramonte has an overlap of occupational floors and fireplaces, associated with nearby residential structures constructed of perishable materials (Mataloto, 2013). The nature of these structures and their overlap throughout the Bronze Age seems to favour the possibility of seasonal occupation between lowland and upland sites (Mataloto, 2013). However, the site's primary researcher argues that at sites such as Evoramonte and even the LBA site of Castelo, where there is evidence of extensive delimitation structures, multiple productive activities, and an abundance of ceramics – all located on the highest ridges of the mountain range, far from basic needs such as water and agriculturally productive fields – there is an implication of prolonged occupancy at these sites (Mataloto, 2013, p. 227). While this is possible, this thesis expands this theory, considering the results of excavation at the LBA site of Castelo.

Populations might have undertaken an early move to upland locations following the Chalcolithic collapse and the emergence of the Beaker phenomenon; this is archaeologically visible at the site of Evoramonte and remains a possibility at other such sites, due to the lack of distinctly EBA/MBA sites during this period. Although these upland sites have been primarily identified as LBA, the preservation of stratigraphy is often poor due to the soil quality of these

mountain ridges, with the LBA occupation of Castelo partly visible at the modern surface due to its placement nearly directly atop the bedrock in many contexts. In turn, it is possible that populations during EBA/MBA periods occupied these upland sites seasonally, with construction becoming more permanent as time went on, thus resulting in the construction and maintenance of large-fortified upland sites of the LBA.

5.2.5 Late Bronze Age Settlement Patterns in Context

In the LBA, there is a significant increase in the number of sites and wider variety of site-types. In the Serra d'Ossa microregion, there are 27 sites that date to the LBA, compared to only two from the EBA/MBA. This increase in the number of sites is perhaps more comparable to the Neolithic/Chalcolithic, in that groups of individuals were living at more permanent sites throughout the microregion, rather than indicative of population aggregation during the EBA/MBA and subsequent dispersal during the LBA. Populations of the LBA appear to be settling down into perennial habitation sites with greater architectural investment, a process that results in greater archaeological visibility compared to the preceding EBA/MBA periods. A key characteristic of the LBA is the establishment of clearly defensive (walled) or defensively-minded large upland sites.

While pit sites of the earlier BA periods often have evidence of LBA occupation, these seemingly open and ephemeral settlements are suggested to have become more permanent with the emergence of the LBA (Serra & Porfírio, 2017, p. 227). Open sites, both lowland and upland in nature, seemed to have functioned in varying ways, all of which are not entirely clear. Data from the southwest indicates that some of these pit sites were later dedicated to metallurgy, as

attested at the site of Misericórdia 2 in Beja by the presence of crucibles (Serra & Porfírio, 2017, p. 227).

There is little published on open upland and lowland LBA sites identified in the region of study, but rescue work in Serpa, Beja identified an LBA settlement known as Entre Águas 5, located in near a small stream (Valério et al., 2013, p. 439). The location of the settlement suggests it was seasonal in nature, as the area would become partially flooded during the winter (Valério et al., 2013, p. 439). At the site of Martes, located in the Serra d'Ossa microregion, a socketed handle crucible was discovered; the closest example of this crucible type was discovered at Entre Águas 5 and is typical of the Eastern Mediterranean (Calado & Mataloto, 2001; Valério et al., 2013, p. 440). This find suggests Martes might have functioned in a similar manner to Entre Águas 5, though further archaeological investigations are needed at the site. Data from Entre Águas 5 and other sites from the period indicate domestic levels of metallurgy (Valério et al., 2013, p. 439).

In the Serra d'Ossa microregion, some of the smaller fortified upland settlements located near the large-fortified upland settlements might be interpreted similarly to those in the Sierra Morena region of southwest Spain, where such sites are suspected to have functioned as watchtowers for the nearby large-fortified settlements in the area. However, further archaeological investigation is required to determine this with any sense of certainty.

Understanding the relationship between lowland and upland sites remains a difficult task. It is without doubt that those living in the large-fortified upland communities interacted with those in the lowland. Due to a lack of agriculturally productive lands on the mountaintops, it is likely that communities left these settlements in order to farm in places with easily accessible water, source clayey soils, and retrieve copper ores for metal production. Water resources,

hunting, and animal husbandry were likely sufficient atop the hill with space for animals like sheep and goat to graze. This differs from the current state of the Serra d'Ossa, which is now covered in eucalyptus but in prehistory, would have been covered with olive and cork trees. However, the extent of transit between large-fortified upland sites and all others remains unclear as there is simply insufficient data. It does appear that due to the extent of these sites and the effort required to construct and maintain them, they may have become increasingly permanent in the LBA, though this will be discussed in detail in the following sections.

5.3 Place-Making and Settlement Aggregation in the LBA? From the Microregional to the Site Level

This section initially considers the Serra d'Ossa microregion more widely and proceeds to narrow focus to the site-level data from the LBA settlement of Castelo in order to reflect on processes of place-making and potentially aggregation at settlement contexts in the LBA, considering the wider southwest context. Thus, a theory for social organization and structure during the LBA is presented.

5.3.1 Making Place: Southwest Iberian "Warrior" Stelae and the Re-use of Megalithic Monuments

As previously outlined, there is a general tendency to focus on landscapes with prehistoric monuments when discussing the concept of place-making in prehistory (Brück & Goodman, 1999, p. 10). These kinds of studies tend to prioritize questions regarding power structures and cosmological beliefs, often ignoring aspects of every day social life (Brück & Goodman, 1999, p. 10). However, settlements are equally as significant, as they reflect the

quotidian nature of existence, arguably providing more information about individuals and their agency in the construction of places. In turn, this section will initially discuss place-making as reflected in the construction and re-use of monuments in the LBA, thus considering settlements in the following section.

During the LBA of the Serra d'Ossa microregion, place-making is evident through both contemporary and past monument construction and use. During this period, megalithic burial sites were re-used – in some areas of the southwest, this encompasses cists and tumuli; in others (such as the Serra d'Ossa microregion) this includes megalithic burial monuments like dolmens (Mataloto, 2005, p. 121; Mataloto, 2007; Oliveira, 1995). The re-use of burial monuments played an important role in the diverse spatial structuring and identity formation of populations (Diaz-Guardamino et al., 2019b, p. 89; Mataloto, 2005, p. 123). This theory is also reflected in the construction of "warrior" stelae that emerged during this period.

In terms of social organization, the Late Bronze Age has long been defined by the emergence of a new culture associated with a concern for defensiveness and warriorship, as represented by the appearance of warrior iconography on stone stelae in the region, and the emergence of large-fortified upland sites. During the LBA, power appears to have become partly influenced by warfare and celebration of warriors, which could be a significant underlying factor in the construction of large-fortified upland sites.

While no stelae have been identified in the Serra d'Ossa microregion, they have been found in neighbouring regions and remain a defining characteristic of the period across the entirety of the southwest. These standing stones typically depict a "warrior" figure alongside weapons and personal objects, such as combs, mirrors, and chariots (Castro, 1995). The purpose of these stelae is unclear – some have argued that they were erected as memorials to the dead;

other hypothesized that these stelae acted as signposts for geographical features, or as roadside markers defining territorial boundaries (Díaz-Guardamino, 2014). Unfortunately, the vast majority of stelae are without context, thus making their study problematic.

However, a recent study of de-contextualized Iberian stelae (Mirasiviene and Setefilla stelae as a test case) has reinterpreted them as multifunctional monuments made by local artisans, functioning as landmarks and memorials to the ancestors – seemingly revered warriors or heroes – related to the "elites, 'houses', or kin groups" of the LBA (Díaz-Guardamino et al., 2019, p. 6111-6112). The authors determined that these monuments were erected in places of symbolic significance, in the liminal places near water, burials, and natural pathways (Díaz-Guardamino et al., 2019, p. 6111-6112). In turn, the placement of stelae provided a medium through which Bronze Age individuals incorporated natural elements of the landscape and their ontologically perceived space into their production of place.

The study determined that stelae were frequently placed near settlements with evidence of LBA occupation, though they are not usually studied in connection to these sites (Díaz-Guardamino et al., 2019, p. 6113). The authors determined that stelae were located between 0.8 to 1 km from known LBA/IA settlements, securely dated by the presence of associated ceramic assemblages (Díaz-Guardamino et al, 2019, p. 6113, 6138).

Study of the engravings themselves revealed locally sourced and manufactured stones, as is the norm in the southwest, with the engraving undertaken by non-specialist local artisans using technical solutions tailored to suit their needs, with each community engaging in their own tradition, but reproducing broadly shared iconographic concepts (Díaz-Guardamino et al., 2019, p. 6136-6138). These broadly shared iconographic elements represent a concern for the ancestral past and are reflected in the re-use of megalithic monuments, such as dolmens. Overall, LBA

populations appear to have placed a great deal of importance upon the collective memory of mythical or ancestral figures, perhaps believed to have occupied the same lands and buried in nearby dolmens. While stelae were associated with certain large-fortified upland sites, their construction was local and non-specialized thus potentially indicating the existence of kin or extended-kin social organization during this period, rather than stratified or even chiefdom-based levels of society; the site-level data presented in the following section expands this theory.

5.3.2 Settlements and Social Organization: Place-Making and Aggregation?

The "warrior" stelae and the re-use of megalithic monuments during the LBA superficially indicate a chiefdom-type society, leading many to unsatisfactorily attempt to fit the sparse available settlement data of the southwest within this context, even though such data stands in contrast to these theories (c.f. Senna-Martinez, 1995; Serra, 2014). Places and monuments of assumed cosmological significance seem to indicate a degree of reverence and respect held for the past inhabitants of a lived space, potentially ancestral or mythological in character. The LBA settlement data suggests a middle-range type population organization with a form of settlement aggregation undertaken as an adaptive mechanism, discussed below (Birch, 2013, p. 3). The following sections will interpret the available settlement data in the Serra d'Ossa microregion, thus forming a theory of social organization during the LBA.

The Late Bronze Age saw a significant change in the region's social landscape; and it is during this period that theories of settlement aggregation might be pertinent. For example, it is clear that the Serra d'Ossa microregion experienced a major shift in settlement during the periods in question, from 176 sites dating to the Neolithic/Chalcolithic, to only two known sites dating to the EBA/MBA. The data from these two EBA/MBA sites make it clear that not all communities

moved to and aggregated there – this is not archaeologically visible. Instead, it seems semi-nomadic lifestyles were likely adopted, and ephemeral domestic sites (such as pit sites/*campos do hoyos*) became the norm. However, while the beginning of the Bronze Age is characterized by semi-nomadic populations/ephemeral groups, the Late Bronze Age in the region sees a move into significantly larger, more easily defensible hilltop settlements by the LBA, and by extent, the reestablishment of perennial, higher-investment settlements.

However, the degree to which a theory of settlement aggregation fits in the context of Late Bronze Age southwest Iberia is limited. While it is tempting to assume the dispersed populations of the EBA/MBA suddenly came together and constructed large-fortified upland settlements during the LBA, there is little available evidence to support this theory and the reality appears to be a lot more complicated. It is without doubt that there was some form of populations coming together or "aggregation" during the LBA, but does not fit the coalescence model recently outlined in archaeological studies (e.g. Birch, 2010). Instead, what appears to be occurring in the Serra d'Ossa microregion is a slow, long-term process of periodic or episodic aggregation with populations coming together, perhaps during certain times of the year, or when necessary (such as periods of instability in the wider region). These populations may have otherwise been fragmented but generally consisted of groups of individuals that were part of a distinct culturally, ancestrally, or mythological-tied community within the microregion (Conkey, 1980, p. 612). Birch states that regions that have undergone a form of aggregation might not always fit within a coalescent society model, and LBA southwest Iberia certainly does not fit within such a model as the scarcity of data required significantly hinders any such attempt (Birch, 2010; 2013). However, this theory provides useful criteria regarding the processes that coalescent societies often undertake and will be considered here (Table 5.2).

Table 5.2 Case Study: Coalescence at Castelo?

PROCESSES TYPICALLY EXPERIENCED BY COALESCENT SOCIETIES: EVIDENCE OF SETTLEMENT AGGREGATION AT CASTELO (SOUTHWEST IBERIA).
Kowalewski, 2006, p. 117 in Birch, 2013, p. 10-11

#	PROCESSES	CASE STUDY: CASTELO VELHO DA SERRA D'OSSA
1	Larger settlements	**Yes** • 14 hectares in size
2	Presence of multiethnic/multilingual populations	**Unknown** • No evidence of culturally distinct groups occupying the site
3	Fortification of sites	**Yes** • Site located at one of the highest peaks of the mountain range • A wall surrounding the extent of the site has been identified
4	Production intensification/changes in social practice of production	**Yes** • Intensification of ceramic production evidenced by comparatively large amounts of ceramics identified • Emergence of ornate burnished ceramics, a technique requiring a degree of skill involved in surface treatment application
5	Trade intensification	**Unknown** • No evidence of supra-regional trade as goods appear to be locally produced
6	Integration of community through rituals/corporate kin groups/clan systems	**Unknown** • No evidence of community integration at Castelo aside from apparent aggregation • More generally, integration perhaps best indicated by re-use of dolmens and construction of stelae; sense of shared ancestry/mythological beliefs
7	Domestic architecture encouraging community	**Yes** • Significantly large hut indicating larger familiar units • Large artificial platforms with little archaeological material – settlement meeting place?

Table 5.2 (continued) Case Study: Coalescence at Castelo?

8	Communal egalitarian ideologies/rituals	**Yes** • Large hut with evidence for ceramic and metal production, areas possibly delineated by interior walls • Construction and maintenance of walled settlement wherein the settlement becomes a form of monumentalism, which is lacking in the BA but characteristic of the Neolithic and Chalcolithic
9	Migration myths	**Unknown** • Possible, but unlikely • Re-use of dolmens may indicate believed, long-term ancestral connections with the surrounding land • Communities that once identified as a whole during the LN/Chalcolithic (indicated by ritual contexts) and dispersed during the EBA/MBA seem to have come together at more permanent sites in the LBA, thus resulting in the creation of ancestral myths at a small-scale – i.e. individuals and groups coming from the region around the Serra d'Ossa mountain range, living in and around this location; some migrating to larger, fortified sites; sense of common ancestral unity, connections to place
10	Collective leadership (discouragement of centralized hierarchy)	**Yes** • No evidence of centralized hierarchy, chiefdom, or stratified-type society at Castelo – most likely middle-range societies in the region; highly variable • Middle-range societies may exhibit slight social and wealth differentiation, indicated by the presence of a large hut and several smaller (unexcavated) huts throughout the site • Middle-range societies can partake in both immediate (characteristic of egalitarian societies) or delayed return systems, the former making power and wealth accumulation difficult
11	Culture-based macro-regionally	**Yes** • Production of ornate burnished ceramics widespread in the southwest during the BA; evident at Castelo by the presence of ornate burnished ceramics and the production process (by the presence of a burnishing stone) • There is a southwest "culture" that is macro-regionally based, represented by the presence of stelae (locally produced with varying techniques but sharing common motifs) • Re-use of megalithic monuments widespread during the southwest LBA

Data from the large-fortified upland LBA site of Castelo reflects many of the criteria for coalescent societies (e.g. Birch, 2010, 2013; Kowalewski, 2006). The site is significantly larger than those of preceding periods, it is fortified and there is evidence of changes in the social organization of production, the domestic architecture seems to indicate an encouragement of community and egalitarian ideologies, and LBA southwest culture does appear to be regionally based. However, the archaeological reality is that detailed excavation data for the LBA is limited and problematic in the southwest due to a lack of radiocarbon dating, which is often difficult to undertake due to organics surviving poorly because of soil acidity in many parts of the region, thus relying heavily on scarce charcoal finds (Blanco-González et al., 2018, p. 32; Calado, 2004; Day, 2013; Lillios, 2020, p. 200). This issue is particularly evident in the Serra d'Ossa microregion, as large-fortified upland settlements are located in areas where the geological formation consists primarily of schist/slate. Given these circumstances, it remains difficult to determine with any sense of certainty the exact chronology of such sites.

The intra-site data from Castelo indicates that the settlement was occupied at various points in prehistory. However, the complicated chronology of these various periods of occupation is impossible to determine without radiocarbon dating. For example, the large hut at Castelo (Sector 3) presents a complex chronology, as there are very clearly at least two major phases of Bronze Age construction as indicated by the architecture – the earlier defined by a narrow line of vertically placed schist slabs, and the later defined by a wider line of horizontally placed schist slabs (Figure 4.12). The earlier structure is similar in construction to the ovular structure/*cabaña* E1 at the cut C30 of El Trastejón in southwest Spain (Pérez et al., 2011, p. 64-54).

In the hut, there are several post holes from various undefined periods of construction, in addition to smaller, possibly oval/circular inner huts or dividing walls. These small inner huts/walls are architecturally similar to the large hut's inner base, though their full extent is imperceptible due to their fragility. However, it is important to note that a hearth characteristic of the LBA (with LBA type ceramics) was uncovered within one of these smaller structures. Overall, the hut presents a complex chronology meaning that without reliable radiocarbon dates, it remains impossible to determine with any sense of certainty if these interior structures, located within the main structure, were constructed at the same time as the inner wall; or if they were constructed prior to the large base of the outer hut (Figure 4.14).

El Trastejón was once the only settlement with fairly large stone architecture in all of the southwest for the first half of the second millennium BCE (Balsera et al., 2015, p. 146-147). However, the accuracy of the radiocarbon dates from the site have long been criticized due to the possibility of the old-wood effect (Balsera et al., 2015, p. 147). While radiocarbon dates are unavailable for Castelo, with two charcoal samples collected during the 2019 season to be sent for dating in the next year, many architectural features appear to be similar. In turn, this might indicate that certain parts of LBA sites of the Serra d'Ossa are older than originally believed, dating to the MBA, or that the LBA occurred earlier in the Sierra Morena of Spain than in the Serra d'Ossa of Portugal.

While examples of settlement aggregation without social integration exist, such examples assume contemporaneous occupation of multiple previously dispersed groups at a single occupational site, like a hill (e.g. Wallace & Lindeman, 2013). The degree of social integration at Castelo – a fairly integral element of settlement aggregation – is unclear. While it is possible to define a broad regional southwest LBA culture, the data does not allow for the assumption of

continuous or simultaneous occupation of previously dispersed groups or individuals at Castelo, considering both the area of excavation and survey data from other parts of the site. Therefore, it is perhaps most useful to assume that the occupational history of the site consisted of some form of populations coming together at various points in time. However, it appears that this was most likely a long-term episodic settlement process, with structures accumulating over time, constructed by individuals or groups of individuals, with simultaneous occupation of the various structures unlikely – an example of this phenomenon has been identified at the Northern Archaic settlement at Agiak Lake, located in northern Alaska (Wilson & Rasic, 2008, p. 128).

The nature of Castelo's LBA occupation suggests prolonged occupancy due to its location, fortification, and presence of multiple productive activities (Mataloto, 2013). However, the current data suggests that it may have either been occupied seasonally, or year-round for shorter periods of time, though once again, without absolute dates this is impossible to determine with any sense of certainty. These individuals or groups of individuals may have shared a common belief system or ancestral identity, though underwent limited social integration, perhaps coming together at times when it was necessary – whether functionally, or ritually, or both.

The relationship between the S3 hut and the platforms identified in S1 and S2 is unclear – they appear to be broadly contemporary, as LBA and IA material appear in both contexts, but it is very possible that they were constructed and used at different points of time throughout the Bronze and Iron Ages, thus indicating the existence of a pull-factor that attracted individuals and groups to the site.

Functionally, the site provides a secure, defensive location with significant land for grazing and gathering. However, the site does have an element of inconvenience, as agriculturally productive fields are located at the mountain range's base, valleys, and plains with

water limited atop the mountain. This is perhaps why there is no evidence of Neolithic or Chalcolithic settlements atop the highest peaks of the Serra d'Ossa, though it is important to note that there are both settlements and megalithic monuments scattered throughout the region's lowlands and uplands.

The pull-factors of Castelo likely encompassed both functional and ritual elements. It is possible that large-fortified upland sites were occupied by a percentage of communities in the wider region, either year-round or seasonally, and acted as a communal meeting place or aggregational social/ritual centre at times. This is archaeologically represented by the site's fortification wall (implying restricted access), the extensive platform construction at the site, and the presence of the massive hut. The size of the site itself is indicative of the wall's likely symbolic nature – it is far too large an area to defend.

Rather than considering the occupants of Castelo and other large-fortified upland sites (namely São Gens and Evoramonte) as culturally distinct from those at other upland and lowland sites in the Serra d'Ossa microregion, the factors influencing the organization and construction of said sites must be taken into consideration. The placement of large-fortified upland sites nearly atop the mountain's natural bedrock explains why sherds of large storage vessels have been identified at these sites, as opposed to storage pits found in the lowlands; the effort that would be required to dig into the natural bedrock meant that goods were likely stored in vessels instead.

There is evidence of domestic levels of metallurgical production at both upland and lowland sites during the LBA. At Castelo, multiple crucibles have been identified, thus indicating metallurgical production at the site. Castelo presents many examples of ornate burnished pottery, which appears during this time throughout the wider southwest, along with other decorated forms and finishes, such as incised and brushed patterning (Soares, 2005; Soares

et al., 2012, p. 272). A burnishing stone identified within the S3 hut at Castelo indicates that the production of burnished ceramics was undertaken at the site. Generally, the shift toward a concern for decoration might indicate a shift in priorities – during previous periods, such as the EBA/MBA, individuals living seemingly semi-nomadic lifestyles appear not to have been concerned with the decoration of ceramics. However, during the LBA, these forms become commonplace, thus indicating an increase in dedication and expertise, as ornate burnished ceramics in particular require a degree of technical skill and time dedicated to their production, though they have been proven to not be correlated with social distinction (Osório, 2013, p. 404-406).

Sites of aggregation typically see a reorganization and revision of pre-existing sociopolitical relationships/affiliations, practices, and structures (Birch, 2013, p. 13). It is possible that groups surrounding certain large-fortified upland sites believed that they shared common ancestry (represented on stelae and by the re-use of older megalithic monuments) but still lived in semi-permanent kin or extended kin-based arrangements, rather than chiefdom-type or territory-based arrangements theorized elsewhere in the southwest (e.g. Almeida, 2012; Serra, 2014; Soares, 2009; Soares & da Silva, 2016). It appears that shared mythologies and genealogical figures became central to the occupants' identity, thus resulting in moments of aggregation. The emphasis shifts from the household to the wider community, resulting in shared architecture (platforms, fortification walls), production, and consumption.

Additionally, the lack of distinctly LBA sites of ritual character in the Serra d'Ossa should be noted. It has already been argued that human actions are always both symbolic and practical in nature, meaning that the symbolic is closely intertwined with the quotidian (Brück & Goodman, 1999, p. 10). In Late Chalcolithic Sardinia, there is an enclosure of settlements, thus

suggesting that ritual and sociopolitical institutions were closely intertwined, with settlements assuming the role of monumental forms, which were represented by megaliths in earlier periods (Hayden, 1999, p. 122). A similar interpretation might be applied to the LBA of southwest Iberia; the element of enclosure at large-fortified upland sites is thus indicative of the monumental role and ritual importance of these places. Rather than a dichotomy between social and ritual, functional and spiritual, it appears that these sites were "made places" throughout later prehistory, pull-factors heavily reliant on the ontological lifeways of the individuals inhabiting the lands (Soares et al., 2009). In turn, it is possible that spatial or local contiguity became increasingly important during the LBA, perhaps more so than strictly kinship and descent (Hayden, 1999, p. 122).

This thesis identifies three possibilities for social organization at Castelo. The first hypothesizes that aggregational events (i.e. people coming together) may have been near-constant, with the site providing a place where goods were exchanged, relationships were maintained amongst inhabitants of the wider Serra d'Ossa microregion, and rituals were carried out; some individuals or groups may have lived within the walls, whereas others may have lived in the valleys and plains. While it is important to note the limited data for lowland sites in the microregion, considering the wider southwest, there appears not to have been a cultural distinction between these groups, thus suggesting ties closely related to local contiguity, place-making, and shared mythological/ancestral heritage and resulting in these varying individuals coming together throughout the year for several purposes. The second possibility suggests that the site was occupied seasonally, based on ecological, economic, or ritual factors affecting other potential areas of occupation thus placing a need or importance of living atop the mountain's highest peaks. The third theory suggests that the site was always occupied by certain individuals,

but underwent additional moments of aggregation during periods of social, political, or economic stress, suggesting that certain individuals always lived within the site's walls and those dwelling in other parts of the wider region also aggregated to the site when a threat arose – whether this was economically-driven, based on cosmological beliefs, or motivated by conflict with the wider southwest and abroad.

5.4 Summary

Overall, it appears that individuals living in the southwest during the LBA may have placed importance on shared mythical and/or ancestral figures. This phenomenon is represented by the making of places through the construction of stelae (placed within close range of settlements) and the re-use of older monumental sites (such as dolmens). This collective identity, broadly based regionally but closely tied to local "places", resulted in the construction of new types of monumental sites – large-fortified upland settlements. These sites represent the ontological perspective of the region's inhabitants – rather than separate the quotidian from the cosmological, individuals of the BA in Iberia's southwest appear to have not interpreted these as a dichotomy, but instead saw them as closely intwined.

The construction of large-fortified upland settlements like Castelo – namely the fortification walls, platforms, and large domestic spaces – and its re-use throughout the Bronze and Iron Ages suggest a degree of importance placed upon the site. The occupational history of the site is unclear due to a lack of radiocarbon dating, and it is currently impossible to determine whether some level of long-term ancestral occupation occurred, or even if the site was simultaneously occupied by groups across various domestic spaces that were not socially integrated, but shared a culture that was based regionally. It is possible that different peoples

engaged in activities in these communal spaces; and the identification of different groups based on ceramic production techniques is a potential avenue of research. The S3 hut at Castelo is a palimpsest of occupation, representative of the overlap that large-fortified upland sites appeared to have undergone, thus highlighting their long-term biographies and significance as a place but obscuring the particulars of occupation length and contiguity. Although BA occupation at sites such as Castelo, Evoramonte, and São Gens suggest a degree of permanence due to their many functional and ecological challenges, it is important to remember that long-term sociocultural attachment to a place can outweigh such concerns (Brück & Goodman, 1999, p. 9). Consequently, it is possible that while such sites were deemed important socially, culturally, or ritually, they did not represent places of continuous occupation, and instead provided a place to aggregate when needed.

CHAPTER 6: CONCLUSION

6.1 Limitations

There are many limitations in the study of southwest Iberia's late prehistory, but three primary issues will henceforth be discussed: the practical, bureaucratic challenges of conducting research in the region, theoretical hurdles directly related to the data quality, and agricultural intensification thus threatening the archaeology of the Alentejo.

To begin, the DGPC's *Portal do Arqueólogo* is an invaluable source for information on the archaeology of Portugal. However, in-depth examination of site data at the microregional level exposes its limitations; there are many sites missing from the database, many entries are lacking critical information, thus resulting in the conclusion that while the *Portal* is a good starting point, additional research is always necessary. An important source for additional information is the *Carta Arqueológica* of the various municipalities under investigation. Additionally, although work undertaken by CRM companies is comparably well-published in Portugal and of particularly high quality (i.e. not always simply site reports, but part of larger interpretive research programs), many projects remain unpublished. Overall, these challenges relate to the Portuguese side of the Iberian Peninsula. Looking across the border to Spain, different kinds of bureaucratic challenges arise, as archaeological work and data are handled by the country's seventeen autonomous regions, and not all of these regions provide an online database of archaeological sites, thus making a holistic study involving several regions of Spain and Portugal a challenging task to undertake.

The second limitation in the study of southwest Iberia's late prehistory relates to the theoretical hurdles faced, directly influenced by the systems of academic patronage at Iberian institutions and the quality of data from certain regions and time periods, such as the southwest

BA. In turn, current political and academic systems have led to much of the field being traditionally stuck in narrow-minded frameworks, although it is important to note that this has improved in the last decade (Blanco-González, 2015, p. 1241).

The third limitation is related to the ability to conduct research in the region. More broadly, there are always limitations when conducting archaeological research – while the DGPC is accommodating, it is not always possible to obtain permission from private landowners to conduct fieldwork. However, an increasingly significant limitation for research in the Alentejo region of Portugal is directly related to an increase in intensive farming and agricultural practices. The sustainability of agriculture is at risk in the Alentejo, with poor water management undertaken and little protection for its native ecosystems and biodiversity (Carvalho, 2020; Pinto-Correia et al., 2020). Additionally, archaeological sites are being illegally destroyed in the region due to an intensification of agriculture and a lack of protection for these sites, a more recent case involving the destruction of a Neolithic dolmen at an almond plantation near Évora (Dias, 2020; "Plantação de amendoal provoca destruição de anta," 2020). These trends are concerning in spite of efforts by local movements to raise awareness of these threats.

6.2 Future Directions

Several broad methodological concepts used in this thesis can be applied in other areas of the Iberian Peninsula, and similar such studies in the context of other microregions of the southwest would undoubtedly produce interesting comparative results. Perhaps most importantly, the southwest of Iberia, particularly southern Portugal and the Alentejo, are lacking in certain fundamental methodological elements for archaeological study. Studies in the region must solidify the chronological data by undertaking radiocarbon dating whenever possible.

Additionally, soil samples should be preserved at all archaeological sites for potential future studies if their study is not currently possible due to budgetary or resource restraints. A consideration for late prehistoric architecture and sampling of building materials is also a potential future area for study that would undoubtedly generate insightful results.

Additionally, it has long been acknowledged that the BA is one of the most poorly understood periods in question throughout all of the Iberian Peninsula (Lull et al., 2013, p. 611), meaning that further research programs encompassing elements of fieldwork and survey would only enhance our current understanding of the period. Further studies of already excavated materials from BA contexts may advance our knowledge of the period in the southwest. Additional research considering both monumental/ritual sites and their relationship with settlements would only improve our understanding of these periods, though these kinds of studies may be too large in scope for an MA thesis. A comparative study of materials at lowland and upland BA sites in connection with large-fortified upland sites in the Serra d'Ossa microregion would help us interpret the relationship between these sites and the individuals that used them – fieldwork at the nearby site of Martes would undoubtedly be a good candidate for such work. Additionally, non-traditional, post-processual approaches to study would provide various interesting avenues for research of periods where there is a sufficient amount of available data (e.g. Boaventura, 2011; Lillios, 2008; Mataloto, 2012).

6.3 Concluding Remarks: The Importance of Long-term Multi-spatial Studies

The approach outlined in this research involved a long-term analysis of intra-site and microregional data from the Serra d'Ossa microregion, providing a test-case best understood in the context of wider regional settlement patterns. Settlement pattern studies approached from the

regional level are common, but such studies risk generalizing the past and the various processes and circumstances that shaped prehistoric societies. The well-established Serra d'Ossa microregion was selected and examined from multiple chronological perspectives, thus allowing for a more nuanced understanding of the emergence and nature of the southwest Iberian LBA.

The multi-temporality of a place must be embraced in order to understand the negotiation that occurred between a community's collective memory in the construction of LBA society (Díaz-Guardamino, 2019b, p. 71). In turn, the Serra d'Ossa microregion, examined from the LN/Chalcolithic to the LBA, appeared to have followed generally southwest settlement trends. The collapse of the Chalcolithic lifestyle during the second half of the third millennium BCE and the emergence of the Bell Beaker package during this period and into the early second millennium BCE resulted in the dispersal of populations across the microregion, leading to the emergence of ephemeral sites during the EBA/MBA.

A broader consideration and understanding of Castelo Velho da Serra d'Ossa's chronological and geographic context thus enhanced the intra-site data, resulting in the emergence of several hypotheses for social organization during the LBA of the Serra d'Ossa microregion and Iberia's southwest more widely. While is it undoubtable that populations came together during the LBA in order to construct the large-fortified upland settlements that emerged during this period, the settlement data challenges previous theories for social organization of these populations. By acknowledging and identifying moments of aggregation and disaggregation in the microregion throughout preceding chronological periods, it becomes apparent that the LBA was not necessarily the result of an event of large-scale population aggregation influenced by scalar stress or other proxies, but was perhaps more on par with the type of aggregation experienced during the region's Chalcolithic, with the site providing a place

for the occasional coming together of populations, when necessary. The LBA saw the emergence of a middle-range type social organization with settlement architecture becoming more permanent and domestic architecture appearing to accommodate larger groups. There appears to be long-term episodic use of the site, with the nuances of occupation thus far impossible to determine due to the absence of fine-tuned site-specific radiocarbon chronologies and lack of data pertaining to seasonality of occupation.

During the LBA, there appears to be a lack of stand-alone funerary, ritual, or cosmological sites and monuments in the microregion, unlike the Neolithic and Chalcolithic periods. The absence of such sites is widespread during the LBA in the southwest, thus suggesting that dichotomic interpretations of "settlement versus monument" or "domestic versus ritual" is not applicable to the period in question. Instead, it appears that during the LBA, individuals placed monumental importance on sites that are typically identified as settlements, thus resulting in the construction of comparably vast domestic places. These sites likely attracted long-term, episodic use throughout the Bronze Age and eventually became increasingly permanent due to their importance manifested in oral traditions, memories, and durability (Díaz-Guardamino, 2019b, p. 71).

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