

Necrogeography in Southwest Peloponnese

A GIS-based study of the spatial distribution of Bronze Age tumulus and tholos tombs in Messenia

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ABSTRACT

This article examines the complex relationship between mortuary landscapes and human activity in southwest Messenia during the Middle and Late Helladic periods (c. 2050–1190 B.C.). Using Geographic Information Systems (GIS) analyses, the study investigates the spatial distribution and factors influencing the placement of tumuli and tholos tombs in the Messenian landscape. The results reveal distinct functions of MH tumuli as visible markers on the landscape, forming a network of landmarks connecting communities with shared values and beliefs. In contrast, LH I-II tholoi were strategically placed along movement routes, marking areas of interaction and control, or atop pre-existing MH tumuli, also reflecting competing ideologies and a shift in symbolic power. During LH III, tholoi were located closer to settlements, emphasizing the social significance of political and territorial motivations. The study highlights the agency of mortuary landscapes in shaping cultural narratives and underscores the role of geopolitical control over land in selecting burial sites. The integration of GIS analyses enriches our understanding of past societies' perception of death and their connection to the landscape.

INTRODUCTION

Cemetery location, indirectly influenced by the prevailing values and beliefs circulating within a community, functioned as a monumental landmark, symbolizing collective identity and reinforcing the salient norms of mortuary practices (Zikidi 2022). Over long periods of time, the chosen location was consistently imbued with new ideas and meaning through its use, generating a deep cultural significance, which surpassed its designation as merely a *space* of deposition in the landscape, making it a significant social *place* (Tuan 1977, 4; Nuttall 2021, 30–1). The landscape agency of these monumental burial grounds (Robb 2004) formed a parallel *heterotopic* geography (Foucault 1971, 1984), where the physical (burials, tombs, space, etc.) and the conceptual (circulating norms, beliefs, etc.) were constantly interacting and intersecting, reforming the meaning of the practices undertaken within.

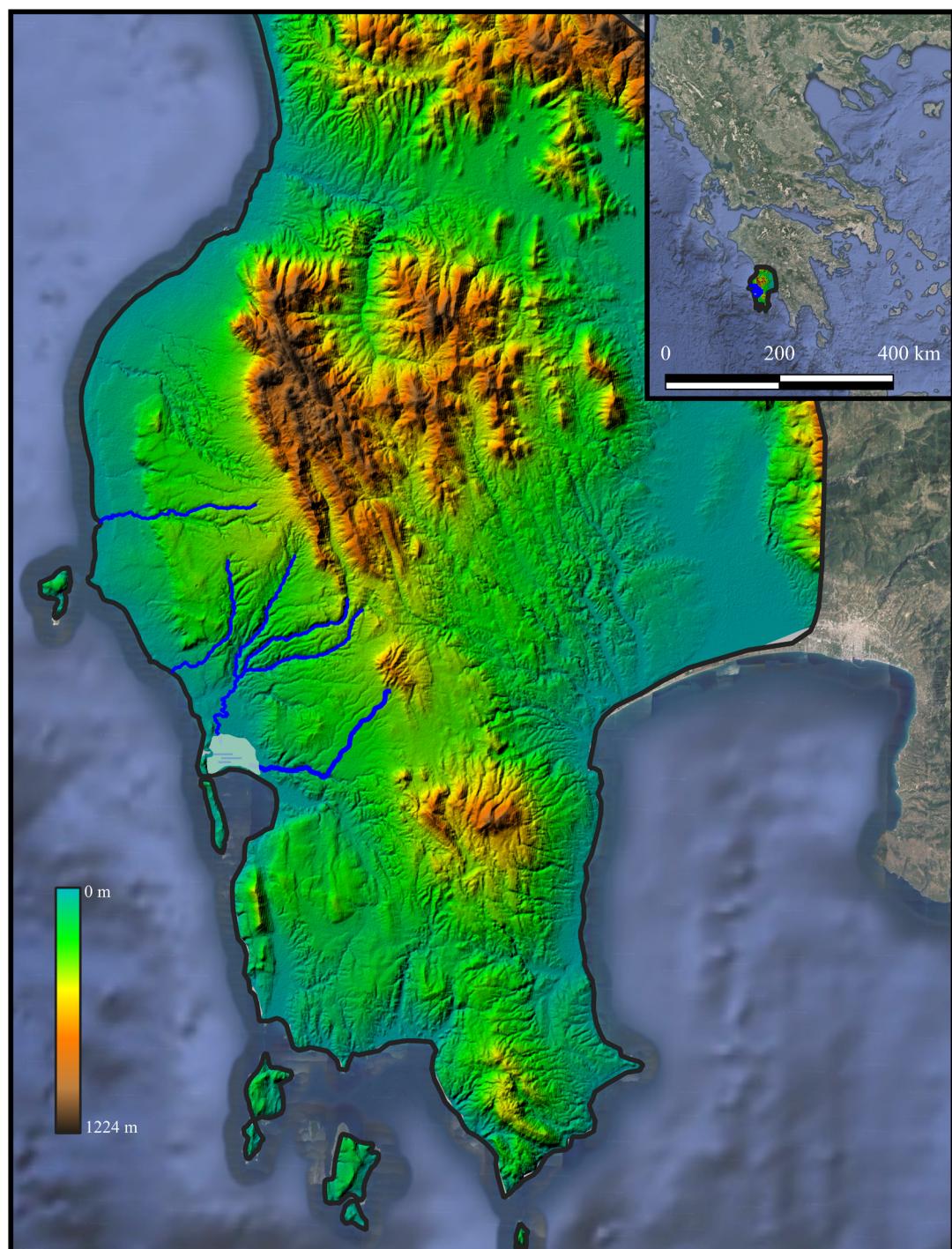
Several scholars have emphasized the essential role that the burial of the dead plays in shaping institutions (Serres 1987; Casey 1997; Ariès 1974; Heidegger 1962), contributing to the creation of monumental places and conveying meaning through the mortuary landscape. Necrogeography, or the “geographical study of burial practices” (Kniffen 1967, 427; Semple and Brookes 2020), aims to interpret mortuary landscapes as “areal phenomena, genealogical records, and reflections of established practices and cultural values” (Kniffen 1967, 426). Naturally, from an archaeological standpoint, the scope of necrogeographical studies is more limited than it is for anthropologists, sociologists, or anthropogeographers; nonetheless, archaeological evidence still provides ample opportunities to examine mortuary data and mortuary landscapes within their social, cultural, and political context.

In this context, Messenian Bronze Age tumuli have been described as places of extended ritual and mortuary performance, where acts of burial inscribed or re-inscribed a connection to a place, a lineage and a community (Forsén 1992; Hielte-Stavropoulou 2001; Müller Celka 2012). The often deliberately organized landscape of a tumulus had a spatial logic that echoed the idealized notions of connection to the region, while their correlation with older spaces of habitation enhanced these associations and triggered interpretations about continuity, memory and descent (Korres 2012; Merkouri and Kouli 2012; Müller Celka 2012; Sarri and Voutsaki 2012; Weiberg and Lindblom 2014; Zikidi 2022). Later tholos tombs, mainly perceived as commemorative mortuary structures, were assessed less on their placement in the natural and anthropogenic landscape, and more on their language and conventions as commemorative power structures, focusing on design, style, association, performance, and materiality of monuments (Boyd 2002; Cavanagh and Mee 1998; Korres 1976, 1979; Papadimitriou 2009, 2016). In both cases, interpretation of the formation and role of mortuary landscapes circled around the premise of how the structures imbued meaning to the specific landscape, disregarding the role of the landscape in shaping human action.

However, archaeological research has highlighted the reciprocal relationship between the mortuary landscape and human activity, and scholars have argued that the placement and design of tumuli and tombs were influenced by the landscape itself, as well as social and economic factors (Schiffer 1976; Olivier 1999; Merkouri and Kouli 2012; Müller Celka 2012). Drawing upon the previous discussion, this paper discusses (a) the spatial distribution of tumuli and tholos tombs in the southwest Messenian landscape from the Middle Helladic (MH) to the end of the Late Helladic (LH) period, and (b) the factors that led communities to choose specific locales (Boyd 2002, 16). Analysis aims to pinpoint factors that played a role in the decision-making process of the mortuary landscape, investigating the spatial arrangement of tumuli and tholos tombs in relation to each other and to other features of the landscape, as well as the impact of the landscape on human movement.

MATERIALS AND METHODS OF ANALYSIS

With a rich tradition of archaeological research in Messenia (Valmin 1938; McDonald and Hope Simpson 1961; 1964; 1969; McDonald and Rapp 1972; Davis and Bennet 2017), selection criteria were deemed necessary to facilitate this analysis. Tombs were selected if they had been excavated or identified by previous field-walking survey projects in Messenia (see Catalogue). Settlements were chosen based on their size, with preference given to those over two hectares in size. This size was determined either by the architectural remains of the settlement (Ano Englianios and Iklaina) or the reported size of the ceramic scatter of the settlement (Beylerbey, Merzini-Platanos and Paleochori). While slightly below the two-hectare size limit, Katarachi (Koukounara) was included due to the concentration of mortuary monuments in its immediate vicinity. The incorporation of more rigorously documented data, such as that obtained in the *Pylos Regional Archaeological Project* (PRAP; Davis and Bennet 2017), alongside less detailed accounts of earlier survey work and rescue excavation does result in a heterogeneous representation of the region, however, disregarding the less detailed data is not an acceptable alternative either. While the chosen selection criteria present a comprehensive view of MH–LH III Messenia,



Data Sources: SRTM and Google Satellite

0 200 400 km



Legend

- Area of Study
- Gialova marshland
- Ravine

Fig. 1. Map of southwestern Peloponnese outlining the area of study, with elevation and ravines, with its general position within Greece shown inset..

it is acknowledged that future work in the area may greatly alter the dynamic of our knowledge in this region (e.g., the unexpected importance of Iklaina, not entirely predicted through site survey: cf. McDonald and Hope Simpson 1961, 241; or trial excavation: Marinatos 1954, 308–11).

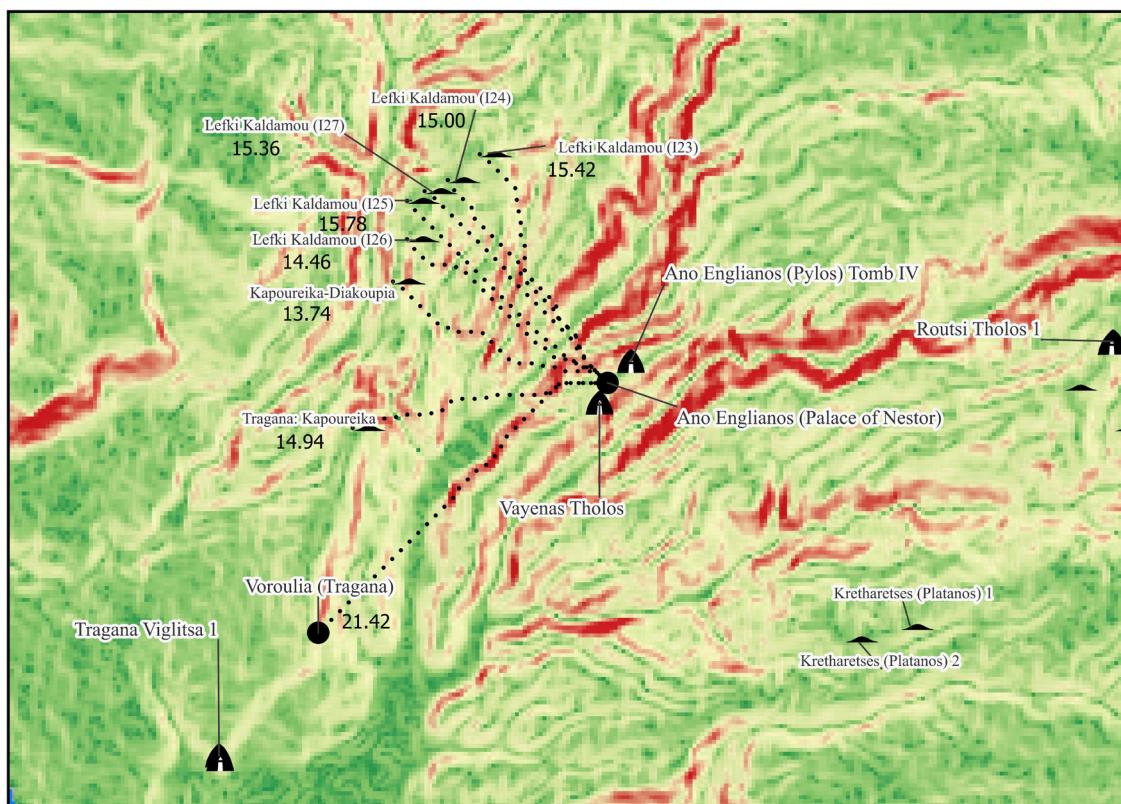
The present study employs a Geographic Information System (GIS), specifically the freely available QGIS, to conduct in-depth computational analyses. The integration of computational methods in Greek archaeology has become increasingly more common in recent years (e.g., Farinetti 2011; Déderix 2015), offering valuable insights into the analysis of digitally reconstructed landscapes through diverse methodologies. The method used here included entering geospatial information for each site, including latitude, longitude and elevation values, into the GIS software. The locations were ascertained by georectifying the original published distribution maps, ensuring consistency with the descriptions of the sites therein. To further verify and improve data quality, satellite imagery was utilized. However, precise geospatial details for some sites remain unpublished, thus the points used here should be considered indicative rather than definitive. These sites were plotted over an SRTM (Shuttle Radar Topography Mission) digital elevation model (DEM) raster of Messenia (Fig. 1). Viewshed and least cost path analyses were then performed.

Viewshed analysis calculates areas of visibility from a specific location, based on the landscape and elevation values informed by the DEM raster. For this analysis, a series of key locations were chosen as individual points representing specific settlements or cemetery groups. The Messenia DEM was used as the input layer, with the point of interest (site) as the observer location and an observer height of 1.7 "DEM units" (representing the maximum height of a human observer) and a target height of 1 "DEM unit" set as parameters. A height of 1 m was selected as a reasonable compromise to account for the presence of medium-sized vegetation, such as shrubs, plants and bushes, thus providing a more phenomenologically grounded approach. However, it is acknowledged that taller vegetation, undoubtedly present in prehistoric times, would have affected visibility. Incorporating such variable vegetation heights into the viewshed analysis is not feasible without homogenizing all vegetation at a uniform height, an approach that would yield inaccurate results. The maximum distance from observer to compute visibility was set to 5 km, a reasonable threshold to visibly discern landscape features (i.e., mounds). The resulting raster shows the areas visible from the chosen location, with two resulting parameters: "Visible" for locations directly within the area covered by the viewshed raster, and "Invisible" for areas out of sightlines from the original site or obstructed from view by landscape features or vegetation.

Least cost path analysis determines specific paths through the landscape, based on the slope gradient of the DEM raster, and pinpoints those of least cost to the traveler. This analysis uses a cost surface raster generated using 'Tobler's hiking function' (Tobler 1993) based on the Messenia DEM, which allocates a time-based cost for each degree of slope. This function allows for a more anthropocentric estimation of least cost paths (Kantner 2012; Lothrop et al. 2018; Rosenswig and Martínez Tuñón 2020). This cost surface is inputted as the "Cost raster layer", with a point of interest as the "start-point layer" and a shapefile containing all of the sites used in the analysis as the "end-point(s) layer". This method calculates the path of least cost from the chosen point to the entire study area database. The values generated come in the form of a time cost (minutes), based on travel through the landscape on foot (Table 2).

DISCUSSION OF RESULTS

The results of the viewshed analysis (Table 1) suggest that MH tumuli were deliberately positioned to be *visible* from neighboring contemporary settlements and serve as marks *on* the landscape. The higher estimated cost values for physical movement between MH tumuli and possible MH settlements (Fig. 2) indicate that access to these sites was not as important as visual communication, thus further highlighting the importance of their function on the landscape as mnemonic indices (Galanakis 2012, 220; Zikidi 2022, 291). While the relational importance of the tumuli with the past initially imbued these spaces with meaning, it was their continuous



Data sources: SRTM. Made using QGIS 3.28.4
 Slope analysis: GDAL. Least cost analysis: QGIS.

Slope gradient

Flat (<2°)
Undulating (2-8°)
Rolling (8-15°)
Moderately Steep (15-30°)
Steep (>30°)



0 1 2 km

Legend

- Least cost paths
- LH I sites
- ▲ MH tumuli (incl. possibles)
- ▲ LH I tholoi

Fig. 2. Least cost path values of travel between Ano Englianós and the Lefki Kaldamou tumuli. The least cost path values are in minutes on foot.

function as indices of memory visible on the landscape that sustained their importance (Zikidi 2022, 170), while the continuous reformation of some of these spaces, such as Agios Ioannis Papoulia (Korres 1980, 134–38), aimed to enhance and maintain them as monuments.

Several tumuli, such as Voidokoilia, the Tumulus of Giorgopoulos, Agios Ioannis Papoulia and Chandrinou-Kissos, are visible from associated settlement sites, indicating areas of human activity (Fig. 3). Among them, Voidokoilia is especially notable, as it can be seen from both inland and out to sea and its landscape syntax may have had a significant impact on visitors sailing past into Navarino Bay and further north to Romanou. Voidokoilia bay itself appears to have been formed in the Classical period (Kraft et al. 1980, 194). The mound is hidden from view on the coastal approaches from both the north and south, only being visible once passing Voidokoilia. The sudden appearance of the burial mound, and its later tholos inheritor, could have been a powerful experience for those sailing by and served to mark the space or territory. These sites, along with others in the lower coastal plain around the Bay of Navarino, create a network of visible landmarks that would have helped to define the spaces of action in this region, forming tumulus complexes (areas with multiple inter-visible tumuli in close proximity) (Fig. 4).

Table 1. Results of the Viewshed analyses. The table denotes the origin of the viewedshed (From), its tomb type, sites that are visible from that location (Visible) and sites that are close to being visible (Possibly visible), as well as their date of construction.

From	Type	Visible	Type	Possibly visible	Type	Construction	
Voidokoilia	Tumulus	Gialova: Paleochori	Habitation			early MH	
		Voidokoilia: Divari	Tumulus				
		Osmanaga	Tholos				
		Korifasion Portes	Habitation				
Voidokoilia	Tholos	Gialova: Paleochori	Habitation			LH I	
		Voidokoilia: Divari	Tumulus				
		Osmanaga	Tholos				
		Korifasion Portes	Habitation				
Peristeria 3	Tholos	Peristeria 1	Tholos			late MH/LH I	
		Peristeria 2	Tholos				
		Kokorakou Mound	Tumulus				
Kaminia 1	Mound	Kaminia 2	Mound			late MH	
Routsi 1	Tholos	Tumulus of Giorgopoulos	Tumulus	Papoulia	Tholos	late MH/LH I	
		Agios Ioannis Papoulia	Tumulus	Kretharetces	Tumulus		
		Pisaskion Mavroudha	Tholos	Tumulus of Kalogeropoulos	Tumulus		
		Ano Englianios	Habitation		Iklaina Panagia		
					Lefki Kaldamou		
					Litharolakka		
Papoulia 1	Tholos	None		Ag. Ioannis Papoulia	Tumulus	LH IIIA	
Ano Englianios	Habitation	Tragana: Kapoureika	Tumulus	Pisaskion Mavroudha	Tholos	MH	
		Litharolakka	Tholos				
		Kapoureika-Diakoupia	Tumulus				
		Lefki Kaldamou	Tumulus				
		Routsi	Tholos				
		Tumulus of Giorgopoulos	Tumulus				
Tumulus of Kalogeropoulos	Tumulus	Iklaina Panagia	Tholos				
Tourkokivouro	Tholos	None		None		LH IIIA	
Lefki Kaldamou	Tumulus	Ano Englianios	Habitation	Litharolakka	Tholos	MH?	
		Volimidia	Chamber	Vayenas	Tholos		
		Routsi	Tholos				
		Tumulus of Giorgopoulos	Tumulus				
		Kretharetces	Tumulus				
Fties 1	Tholos	Livadthi	Tholos	Gouvalari 1 & 2	Tholos	LH II	
		Gouvalari Mound A, B and 2	Tholos	Gouvalari Polla Dendra	Tholos		
		Koukounara Akones	Tholos	Chandrinou Koumbe	Habitation		
		Kaminia 2	Tholos	Chandrinos Ag. Athanasios	Tumulus		
				Kaminia 1	Tholos		
				Soulinari: Tourlidhitsa	Tholos		
		Chandrinou Kissos	Tumulus	Platanovrysi	Tholos		
Koryfasio Haratsari (Osmanaga)	Tholos	Korifasion Portes	Habitation	Pisaskion Mavroudha	Tholos	late MH	
		Tragana Viglitsa	Tholos	Romanou Golf Course	Tholos		
		Tragana: Kapoureika	Tumulus				
		Kapoureika-Diakoupia	Tumulus				
		Lefki Kaldamou	Tumulus				
		Kato Englianios	Tholos				
		Ano Englianios	Habitation				
		Voidokoilia Divari	Tumulus				
Chandrinou: Kissos	Tumulus	Voidokoilia	Tholos	Tourkokivouro	Tholos	MH	
		Soulinari	Tholos				
		Chandrinou	Tumulus				
		Chandrinou: Koumbe	Habitation				
		Chandrinou Ag. Athanasios	Tumulus				
		Livadthi	Tholos				
		Fties	Tholos				
		Gouvalari Mound A, B and 2	Tholos				
		Gouvalari Polla Dendra	Tholos				
		Koukounara Akones	Tholos				
		Papoulia 3	Tholos				
		Kaminia 2	Tholos				

From	Type	Visible	Type	Possibly visible	Type	Construction
Tragana: Kapoureika	Tumulus	Kapoureika-Diakoupia Vayenas Ano Englianios Lefki Kaldamou Kretharetses Pisaskion Mavroudha	Tumulus Tholos Habitation Tumulus Tumulus Tholos			MH
Gouvalari Mound A	Tholos	Chandrinou Chandrinou: Kissos Chandrinou Ag. Athanasios Chandrinou: Koumbe Kaminia 1 & 2 Koukounara Akones Gouvalari Polla Dendra Gouvalari B & 2 Ftyies Livadhi Papoulia 3	Tumulus Tumulus Tumulus Habitation Tholos Tholos Tholos Tholos Tholos Tholos	Soulinari Platanovrysi Paleochoria: Koukounara	Tholos Tholos Tholos	late MH
Katarachi (Koukounara)	Habitation	Gouvalari 1, 2 & A Koukounara Akones Gouvalari Polla Dendra Livadhi Kaminia Papoulia 3 Chandrinou Chandrinou: Kissos	Tholos Tholos Tholos Tholos Tholos Tholos Tumulus Tumulus	Gouvalari Mound B & 2 Ftyies	Tholos Tholos	MH
Iklaina (Traganes)	Habitation	Tragana: Kapoureika Tragana Viglitsa Romanou Golf Course	Tumulus Tholos Tholos	Korifasion Portes Osmanaga Ag. Ioannis Papoulia Iklaina Panagia	Habitation Tholos Tumulus Tholos	MH
Gialova Paleochori	Habitation	Paleochori (Koukounara) Voidokoilia Divari Voidokoilia Pylos Vigla and Midhen	Tholos Tumulus Tholos Tholos	Osmanaga	Tholos	LH IIIA
Koryfasio Beylerbey	Habitation	Osmanaga Koryfasion Portes Tragana Viglitsa Tragana: Kapoureika Kapoureika-Diakoupia Lefki Kaldamou Voidokoilia Divari Voidokoilia	Tholos Habitation Tholos Tumulus Tumulus Tumulus Tumulus Tholos	Romanou Golf Course Vayena Pisakion Mavroudha	Tholos Tholos Tholos	MH
Platanos	Habitation	Agios Ioannis Papoulia Routsi Tumulus of Giorgopoulos	Tumulus Tholos Tumulus	Ano Englianios Tumulus of Kalogeropoulos	Habitation Tumulus	MH

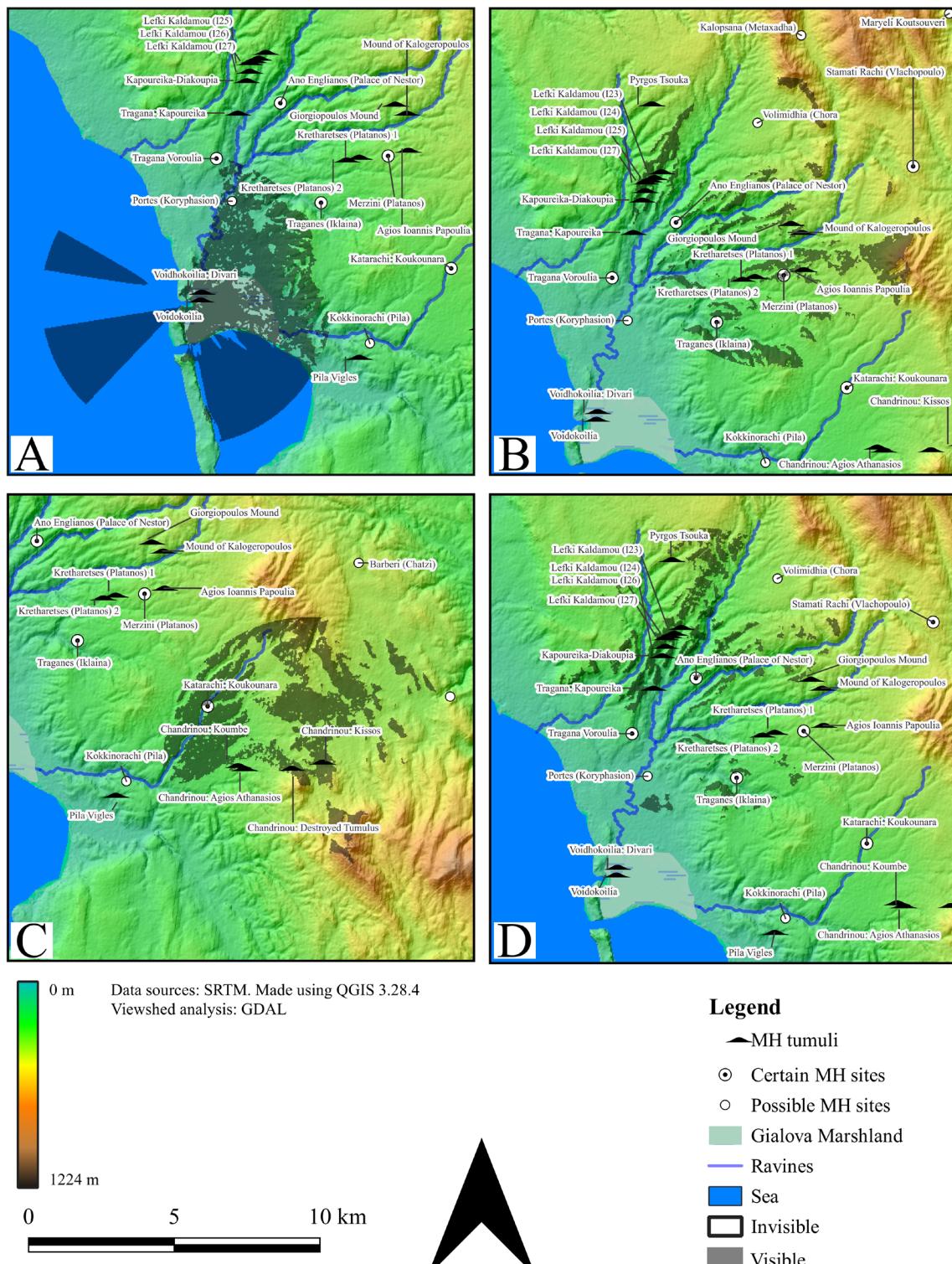


Fig. 3. Viewsheds from selected sites from the Middle Helladic period. Each with a 5 km range with a 1.7 m height. A: Voidokoilia; B: Tumulus of Giorgopoulos; C: Chandrinou-Kissos; D: Lefki Kaldamou

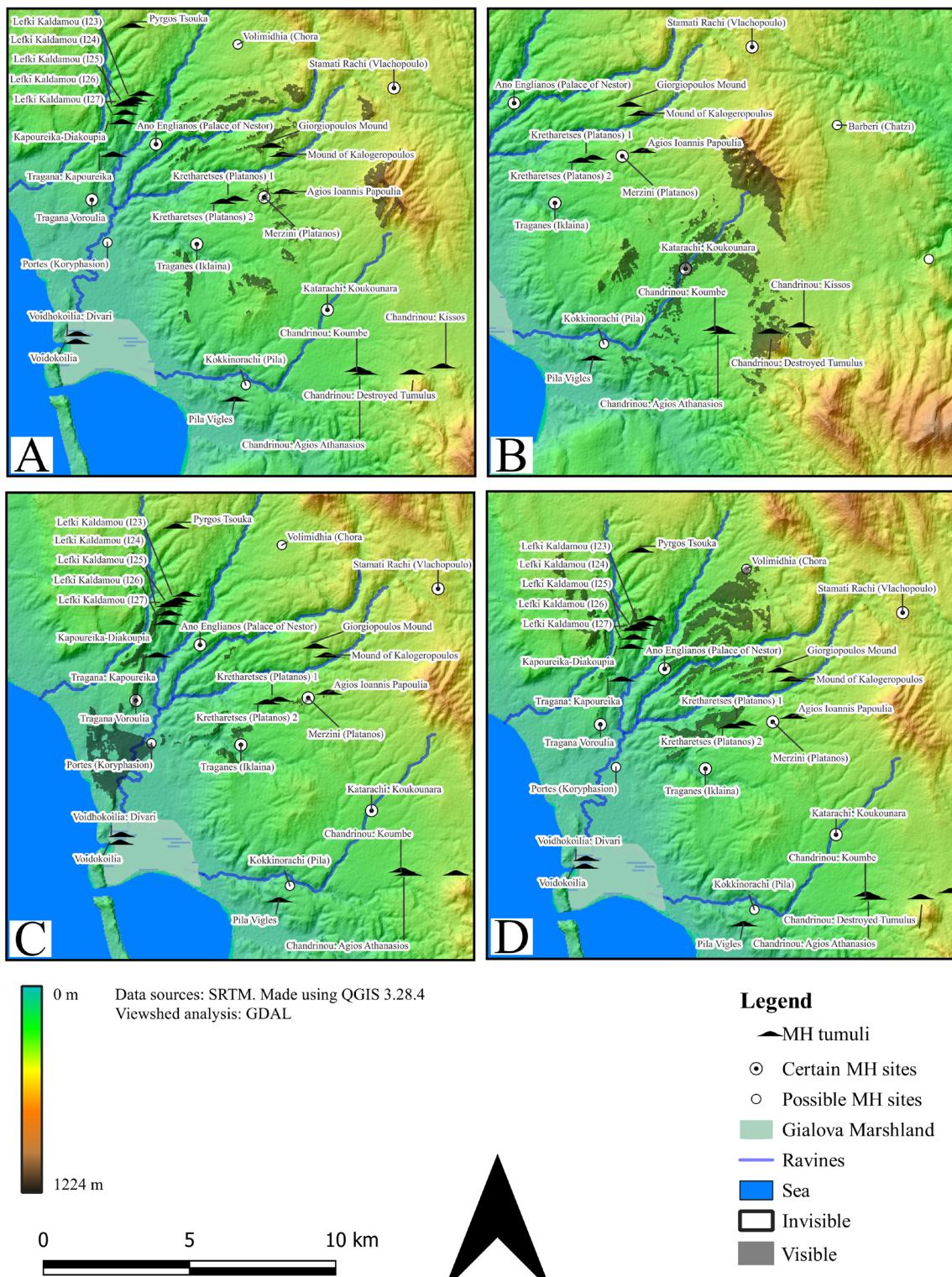


Fig. 4. Viewsheds from selected sites from the Middle Helladic period. Each with a 5 km range with a 1.7 m height. A. Platanos; B. Katarachi (Koukounara); C: Iklaina; D. Ano Englianos.

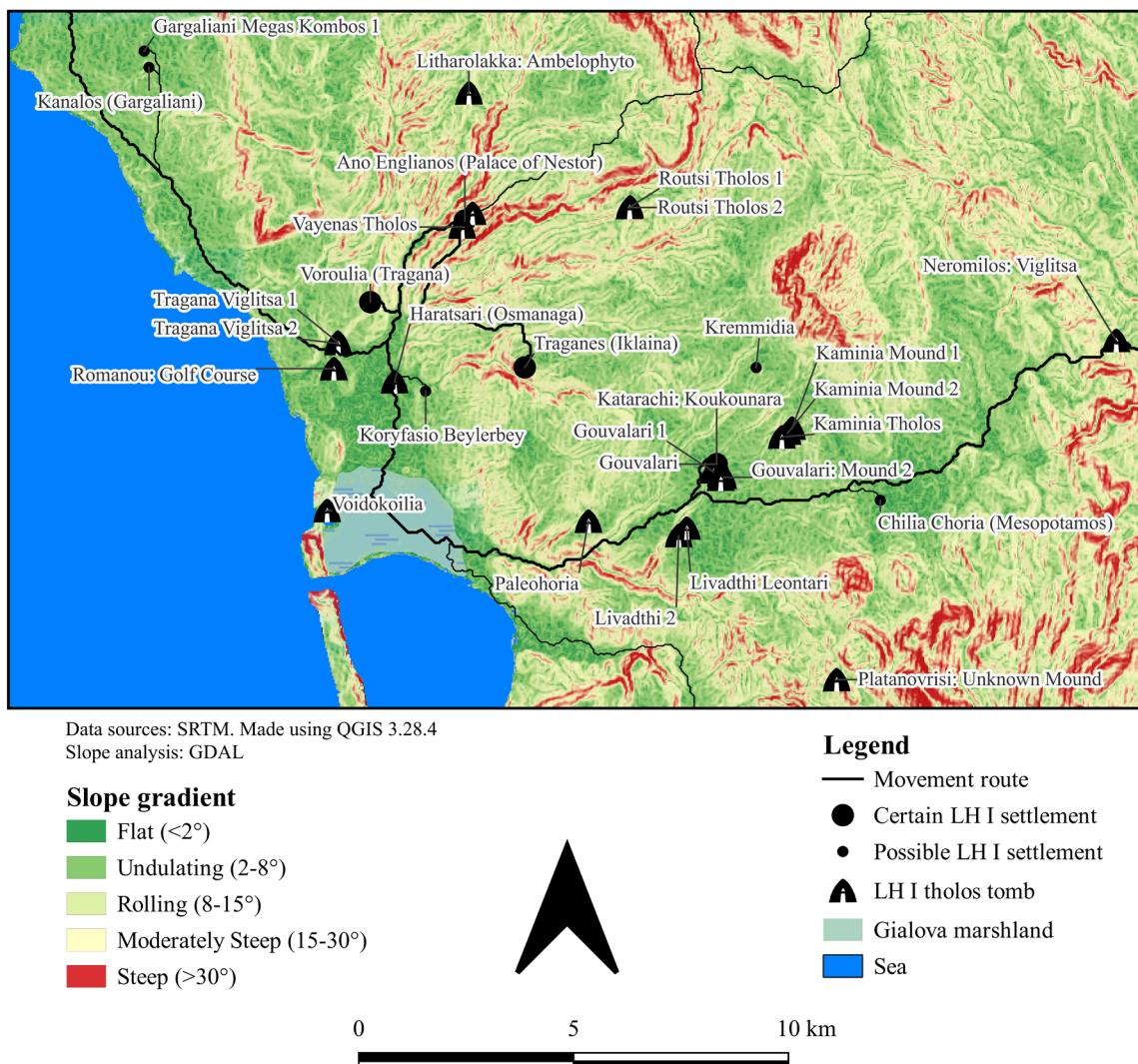


Fig. 5. LH I settlements along with contemporary tholos tombs. Major movement routes are highlighted in black. Green areas indicate lower slope, while red indicates higher slope and higher energy cost of travel.

LH I-II tholoi were situated within the landscape in a manner distinct from MH tumuli. Their placement appears connected more to *visibility within movement* through the landscape, with several LH I-II tholoi located on movement routes *through* the Messenian landscape or close to abrupt changes in the landscape (Fig. 5). These factors suggest that the interaction between the communities, and their dead, was important to materialize in the landscape, while movement routes were essential in establishing the limits of geographical 'familiarity' and kinship.

The Kaminia tholoi, for example, marked the beginning of one arm of the Gouvalari ravine, where a chain of dozen tholoi placed along the ravine would have been observed by the traveler heading towards the Bay of Navarino from the direction of Nichoria, and were all easily accessible from points close to where the ravine could be crossed (Fig. 6). In addition to connectivity through movement, both Mounds A and B at Gouvalari have a high visibility over a wide range of cemeteries (Fig. 7: A), while specifically from Gouvalari Mound A, one would have intervisibility with all the Chandrinou burial spaces, the Kaminia tholoi, the Fties tholoi, two Livadhi tholoi, and the other tombs of the Gouvalari group.

Several other tholoi are located on movement routes *through* the Messenian landscape, suggesting that they may have marked areas of 'occupation' or controlled movement as markers on the landscape (Fig. 8). The Ro-

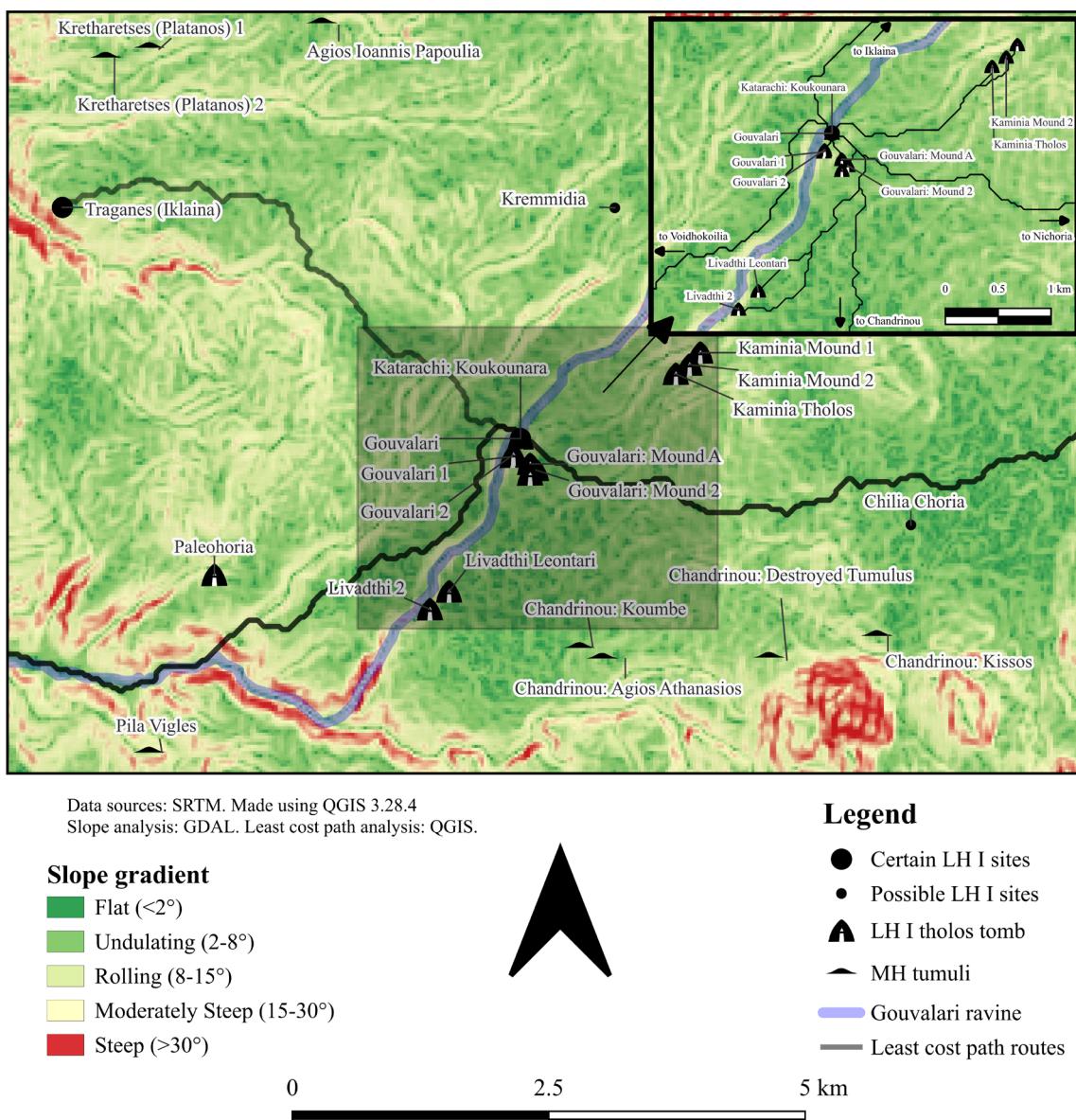


Fig. 6. The Gouvalari ravine with associated LH I tholoi, MH tumuli and contemporary settlements.

manou tholos and later the Tragana Viglitsa tholoi are placed on either side of the main coastal route into central Messenia from the north. The Koryfasio Haratsari (hereafter Osmanaga) tholos would have been passed on the main route from Voidokoilia and Navarino Bay towards Ano Englianios, as well as the main movement route from the southern part of the Navarino Bay. Neromilos-Viglitsa is directly beside the main route from the Kalamata Bay into the Kremmidia area and on towards the Bay of Navarino. The Paleochori tholos is adjacent to one of the routes leading from Gouvalari, towards the Bay of Navarino. Contrary to this pattern, the tholos at Kephalovrysi is placed in an anomalous position and could be connected more to a local center or the route towards another site high in the upland areas of the Aigaleo mountain range (Fig. 9).

The least cost path analyses (Table 2) also shed light on the spatial interconnectivity of several cemeteries, which create tomb and cemetery clusters. For example, the cemeteries along Gouvalari ravine were within a short distance of one another, meaning that several would have been in the immediate cognitive territory of each other, creating a unified deathscape network (Fig. 6).

Table 2. Results of the least cost path analyses. A least cost path was executed from each location in the first column to multiple selected sites. The resulting value is represented in minutes on. Color-shading classifies the journeys into below 30 minutes (green), between 31–60 minutes (yellow), between 61–120 minutes (orange) and over two hours (grey).

From	To Palace of Nestor	To Voidokoilia	To Routsi	To Kaminia	To Nichoria	To Chandrinou Kissos	To Lefki Kaldamou	To Iklaina	To Osmanaga	To Ag. Ioannis Papoulia	To Tragana Viglitsa	To Volimidia	To Gouvalari
Palace of Nestor	-	61.86	25.56	74.88	152.16	101.52	33.42	16.32	31.74	31.74	30.78	32.94	70.50
Voidokoilia	61.86	-	82.86	98.34	188.28	103.38	65.28	67.32	30.12	75.66	33.42	94.14	82.02
Routsi	25.56	82.86	-	55.92	127.92	84.84	29.04	40.02	52.92	14.94	53.70	28.80	57.84
Kaminia	74.88	98.34	55.92	-	97.56	28.98	44.10	89.64	75.84	43.86	87.12	81.66	17.04
Nichoria	152.16	188.28	127.92	97.56	-	87.42	135.36	166.68	171.18	126.12	178.14	141.36	113.82
Chandrinou Kissos	101.52	103.38	84.84	28.98	87.42	-	70.14	117.18	99.30	71.82	112.68	106.50	34.80
Iklaina	33.42	65.28	29.04	44.10	135.36	70.14	-	49.68	39.18	14.94	50.34	53.34	37.14
Lefki Kaldamou	16.32	67.32	40.02	89.64	166.68	117.18	49.68	-	41.58	46.50	34.14	37.98	86.82
Osmanaga	31.74	30.12	52.92	75.84	171.18	99.30	39.18	41.58	-	49.14	15.18	64.02	66.66
Ag. Ioannis Papoulia	31.74	75.66	14.94	43.86	126.12	71.82	14.94	46.50	49.14	-	54.96	42.90	43.86
Tragana Viglitsa	30.78	33.42	53.70	87.12	178.14	112.68	50.34	34.14	15.18	54.96	-	61.20	77.88
Volimidia	32.94	94.14	28.80	81.66	141.36	106.50	53.34	37.98	64.02	42.90	61.20	-	86.16
Gouvalari	70.50	82.02	57.84	17.04	113.82	34.80	37.14	86.82	66.66	43.86	77.88	86.16	-

Finally, some LH I-II tholoi are placed close to or even atop pre-existing MH tumuli and burial mounds. Examples include the Routsi tholoi, close to the tumuli of Kalogeropoulos and Giorgiopoulos (Fig. 10: A), the Kaminia tholoi, constructed atop a burial mound (Fig. 10: B), as well as further north, the Peristeria tholoi, placed close to the existing Kokorakou tumulus (Fig. 10: D).

In the case of Voidokoilia, the tholos was placed directly inside the MH tumulus (Fig. 10: C). Several other MH tumuli, however, do not receive an associated tholos, including the entire Lefki-Kaldamou group, all the Chandrinou tumuli and the Kretharetzes tumuli. While this variability in practice may be a result of inconsistent archaeological documentation due to the destruction of many burial mounds, it is also highly possible that it could be the result of regional politics that commenced in LH I and continued until the end of LH II period, following the socio-political fermentations that affected the entire southwest Messenia, and the emergence of the Mycenaean phenomenon.

With a range of burial tumuli in the general area of the Platanos-Merzini settlement, for example, the establishment of tholoi at Routsi may have been a way to re-orientate the symbolic power of the dead away from these sites, and towards local symbols of power under the control of Ano Englianios during the LH period (Zikidi 2022, 303). The Routsi tholoi are not easily connected to a nearby contemporary settlement. The Platanos settlement is around twenty minutes' walk on foot (Fig. 11: A) and, unless there is a destroyed habitation site underneath modern Myrsinochori, there is no site that one could convincingly argue would be significant enough to have two tholoi associated with it. The motive for placing these tholoi in this area may have been more connected to competing for mnemonic primacy with the pre-existing tumuli in this area, which are in themselves likely to have been established due to their inter-visibility with both the Platanos settlement and Ano Englianios (Fig. 11: B).

A similar mentality could also be observed at Voidokoilia, where the disturbance of the earlier MH tumulus with the construction of the LH I tholos may have been a highly charged symbolic act, aimed at superseding

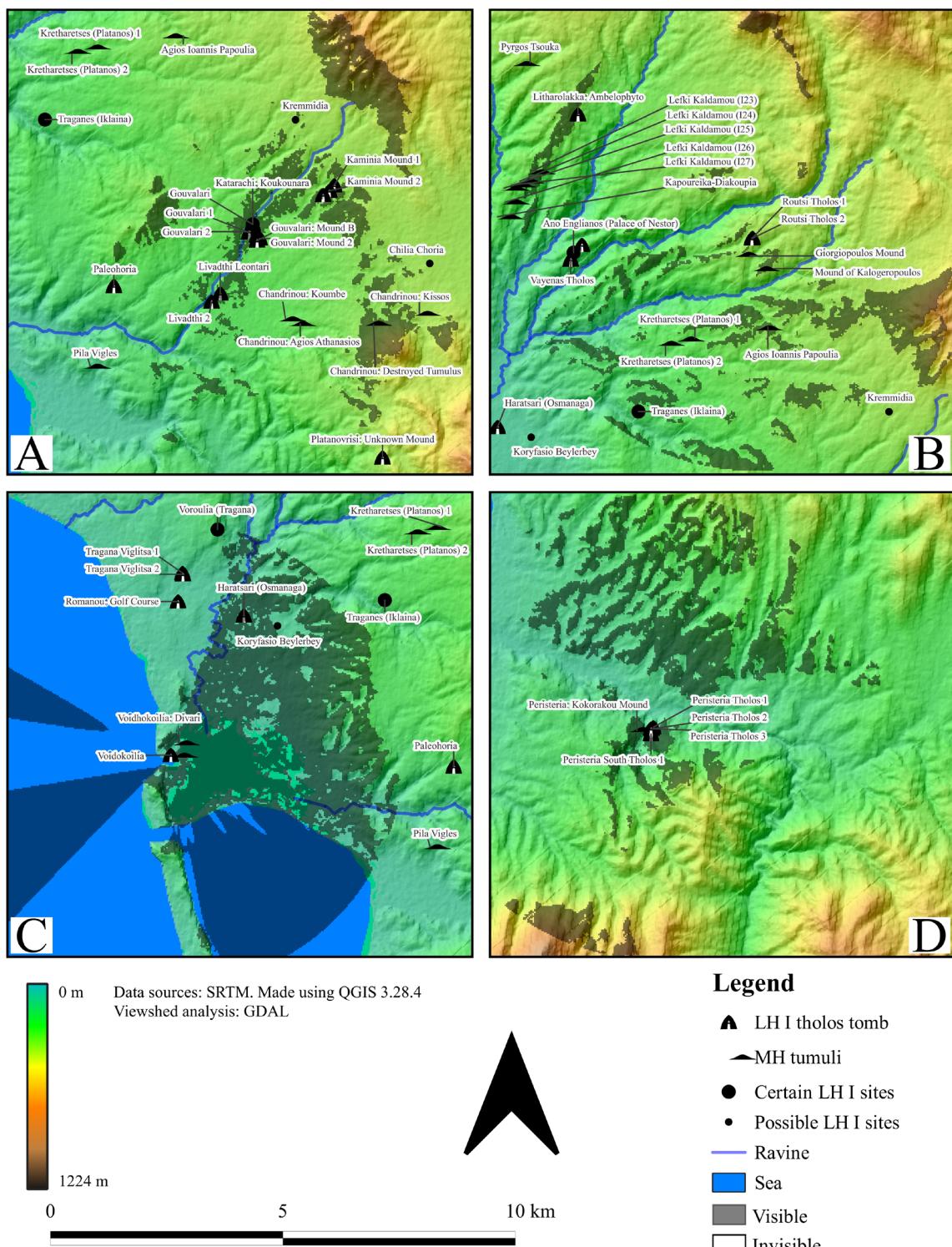


Fig. 7. Viewsheds from LH I Tholos Tombs. A: Gouvalari; B: Routsi; C: Voidokoilia; D: Peristeria.

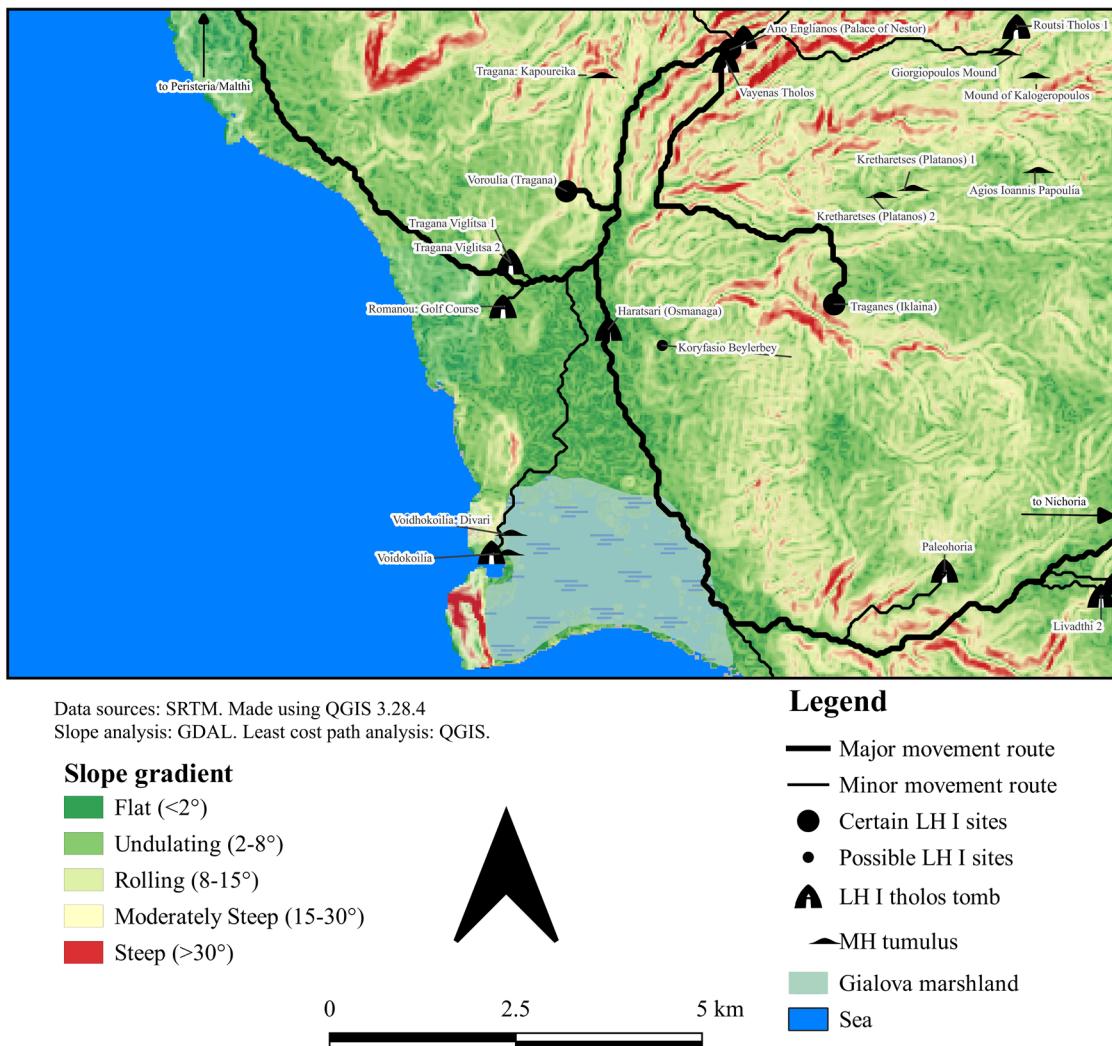


Fig. 8. The placement of LH I tholos tombs between Ano Englianos and Voidokoilia. Movement routes are determined through least cost path analyses. 'Major' denotes a route utilized by several paths of least cost, while 'minor' routes are those leading only to one site.

pre-existing mortuary social structures. On the other hand, the placement of the Kaminia tholoi, also atop a pre-existing MH burial mound, appears to have incorporated earlier pithos burials and generally respected the pre-existing mortuary space (Korres 1996, 2012), reinforcing local symbols of mortuary power. Therefore, two different trajectories appear to have shaped the mortuary landscape in LH I-II. The first, visible at Kaminia, aimed to reinforce pre-existing local socio-political and cultural systems, while the second, visible at Voidokoilia and Routsi, aimed to disintegrate them and shift the focus towards new centers of power.

A rather illustrative long-term example of how different agencies affected the choice of placement of tholos tombs is notable at Ano Englianos (Fig. 12). The site is visible from a surprising number of locations, including all the Lefki-Kaldamou tumuli on the Ambelofyto-Tragana ridge, the Kretharetzes tumuli in the west, Routsi in the east, and south up to the Osmanaga tholos, and has visibility over a wide range of locations, including all the Lefki-Kaldamou tumuli, the Tumulus of Giorgopoulos, and the Tragana-Kapoureika tumulus, as well as the tholoi at Litharolakka: Ambelofyto and Routsi, and finally the habitation site of Iklaina (Fig. 12). The visibility

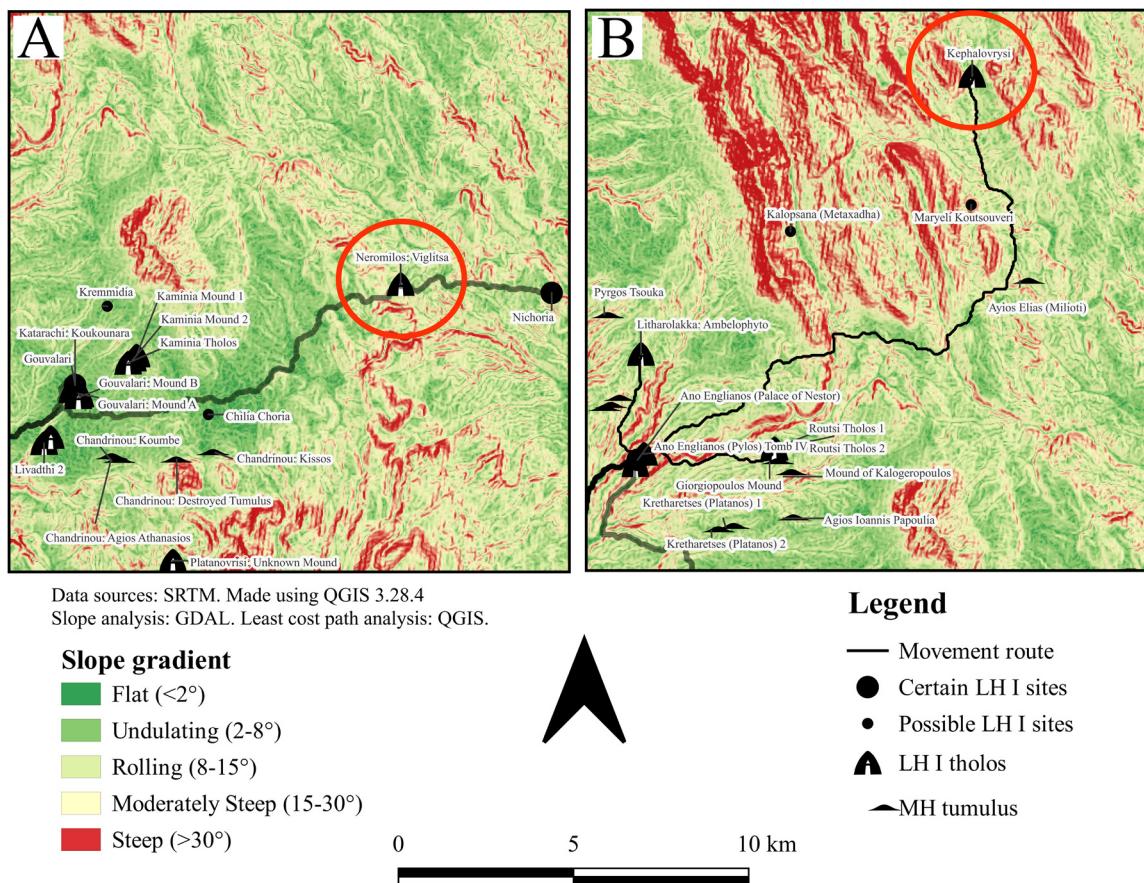


Fig. 9. Placement of tholoi outside the main areas of funerary activity and archaeological survey.

of the site from both MH and LH sites, especially those located on the Ambelofyto-Tragana ridge,¹ may indicate that Ano Englianios may have already been a preeminent settlement in the MH period. Given both the recovery of MH sherds from fieldwalking survey around the later palace site (Davis and Bennet 2017, 26) and the impetus behind the construction of the other mounds surrounding the area, the visibility from and towards MH Ano Englianios may have been an important consideration in the placement of mortuary spaces in this part of the Messenian landscape. The least cost path analysis reinforces this interpretation, as despite the strong inter-visibility with the tumuli (Spencer 1995, 284, fig. 5) on the Ambelofyto-Tragana ridge (Lefki-Kaldamou), the values suggest that a visit towards the Ano Englianios would not have been as short a journey as visiting other tombs on the same ridge (Fig. 2), indicating that the orientation of these tumuli towards the Englianios area may have served the need of these communities to at least establish and demonstrate a visual and conceptual connection with Ano Englianios.

In a different long-term trajectory, another complex already formed in the MH period was located between the settlement of Katarachi (Koukounara) up to Kremmidia in the north and south to Koumbe (Fig. 13). The unexcavated Katarachi site has intervisibility with all the nearby burial spaces in the south, up to the Chandrinou

¹ The suggestion (McDonald & Hope Simpson 1961, 239) that these prehistoric tumuli could be connected to the site excavated by Marinatos at Tragana-Voroulia (Marinatos 1956, 90; McDonald & Hope Simpson 1961, 239: no. 45) must be dismissed based on that site's small size. McDonald & Hope Simpson (1969, 148) highlighted the connection of Kaldamou, Kapoureika, Charatsari and Tragana to Ano Englianios

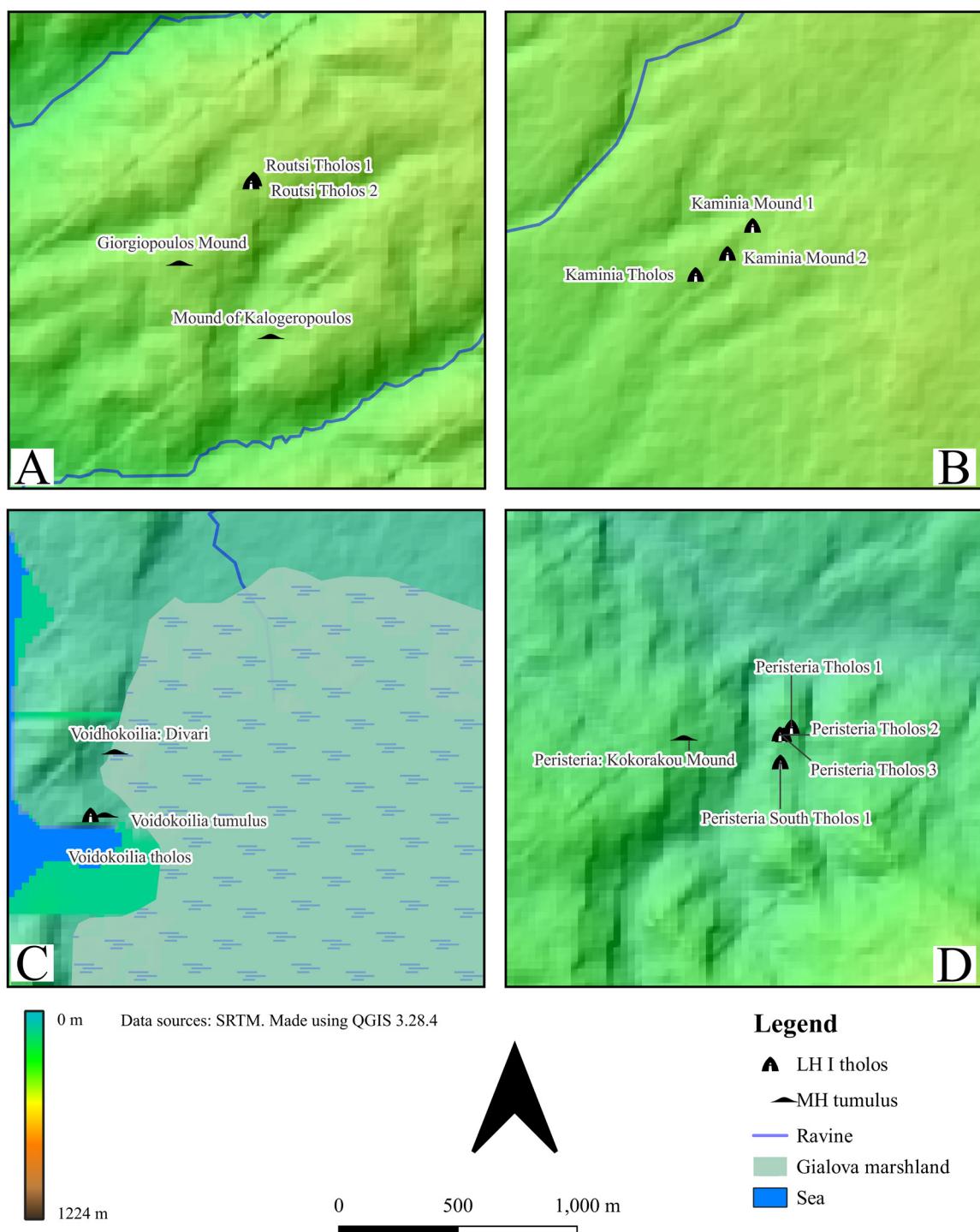


Fig. 10. Tholos tombs placed atop or near pre-existing MH tumuli: A. Routsi; B. Kaminia. C. Voidokoilia. D. Peristeria.

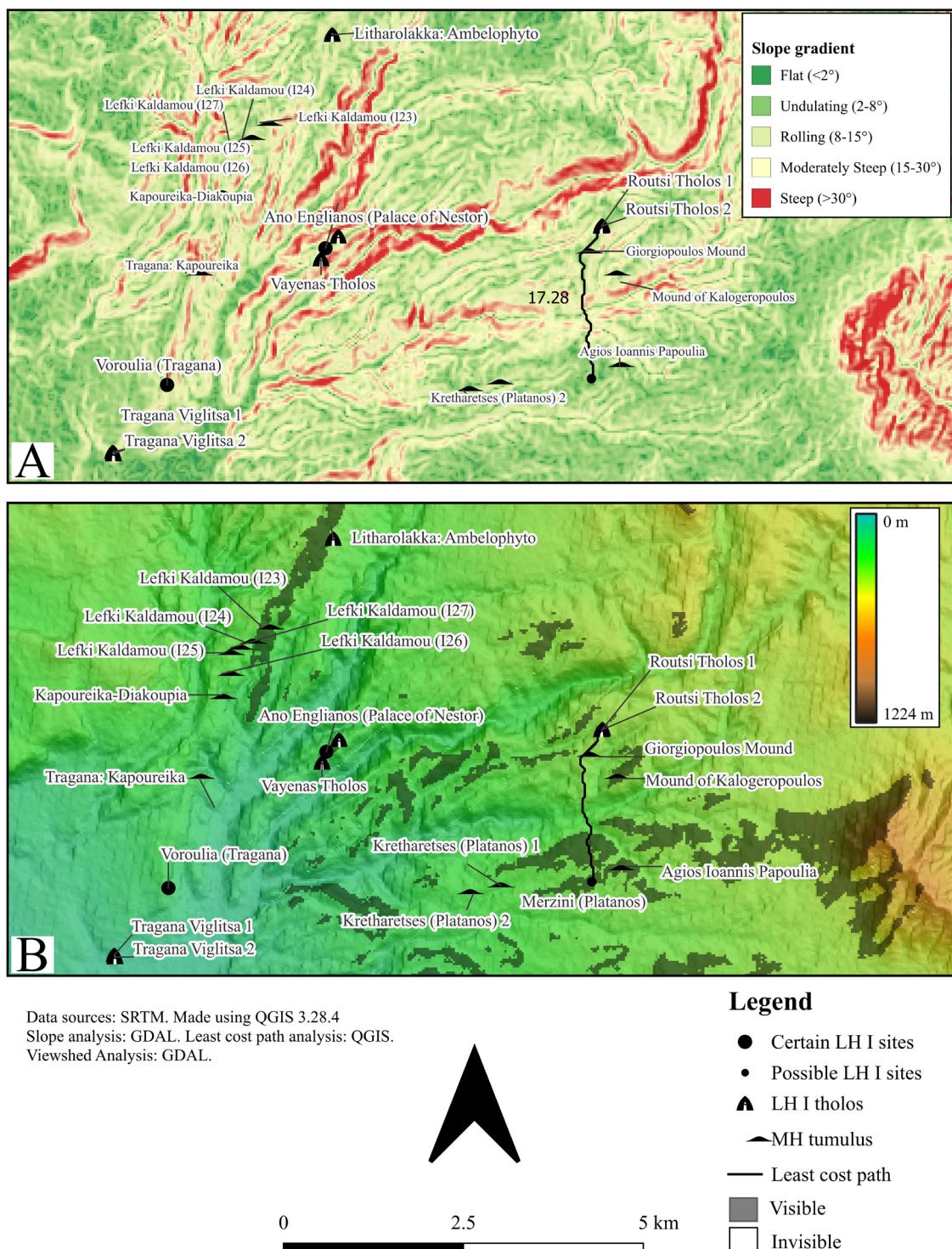


Fig. 11. MH tumuli in the area around Platanos and cost of travel between Platanos and Routsi (A) in minutes on foot. Intervisibility of Routsi with Ano Englianios and Platanos (B).

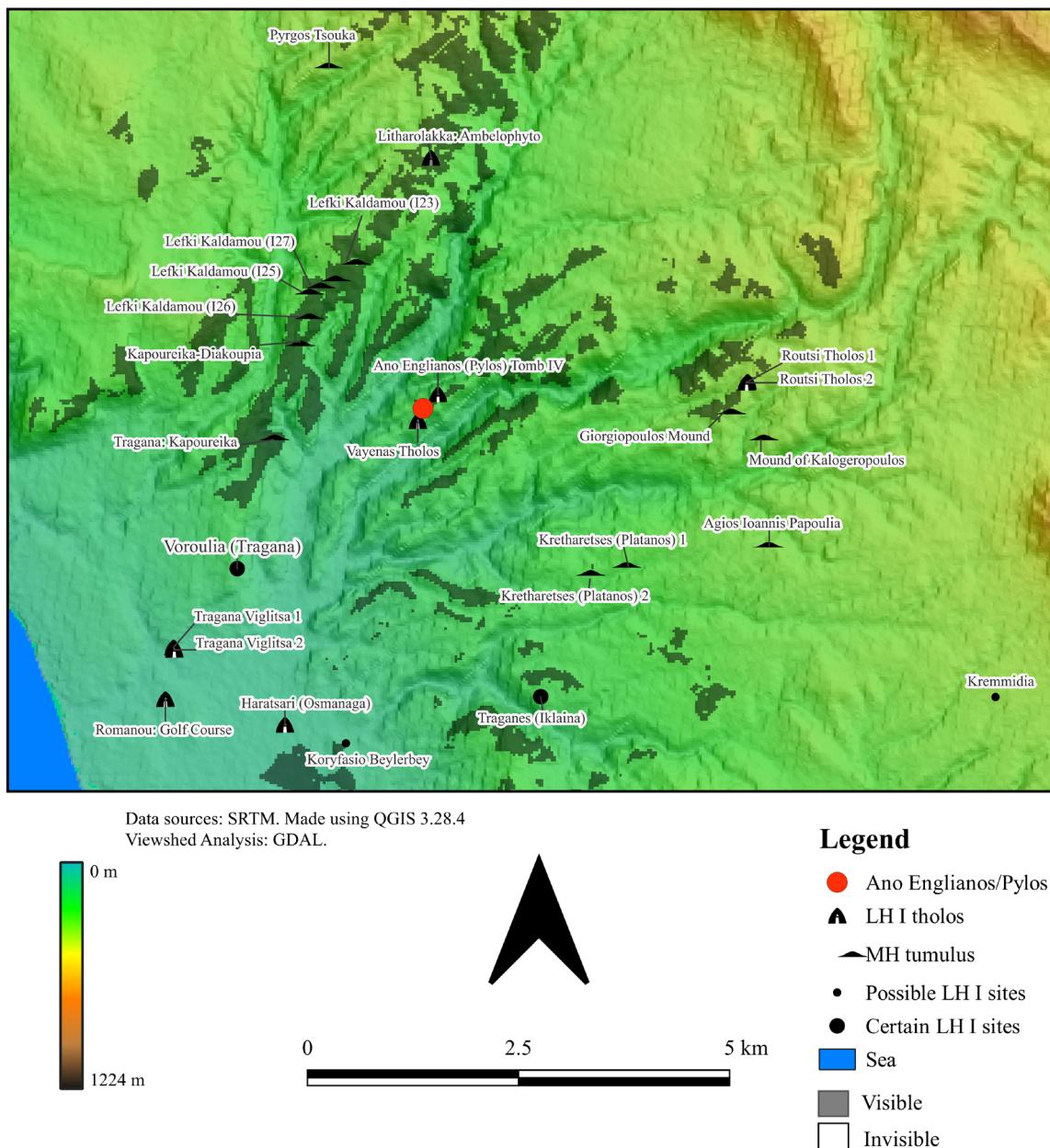


Fig. 12. Commanding views from Ano Englianios towards MH tumuli and LH I tholoi.

tumuli in the south and the east; this high degree of visibility and spatial interconnectivity suggests that the location was strategically important and likely played a significant role in the social and political organization of this area up to LH I-II periods. The use of burial sites around Katarachi after LH II suggests that the area continued to be a point of reference for this mortuary concentration. This shift may suggest that despite the change in the political or social dynamics of the region, the area around Gouvalari ravine retained its symbolic importance in some capacity, and this mortuary complex remained the focus of this area that had to be protected and maintained.

The distribution of LH III tholoi (Fig. 14), on the other hand, appears to be directly linked to settlements with strong evidence of LH III activity in proximity. The Panagia tholos at Iklaina could plausibly be associated with a local Mycenaean official or governor at the important site, while the Papoulia tholoi might reasonably be connected to the Platanos site, which has significant amounts of LH III material (McDonald and Hope Simpson

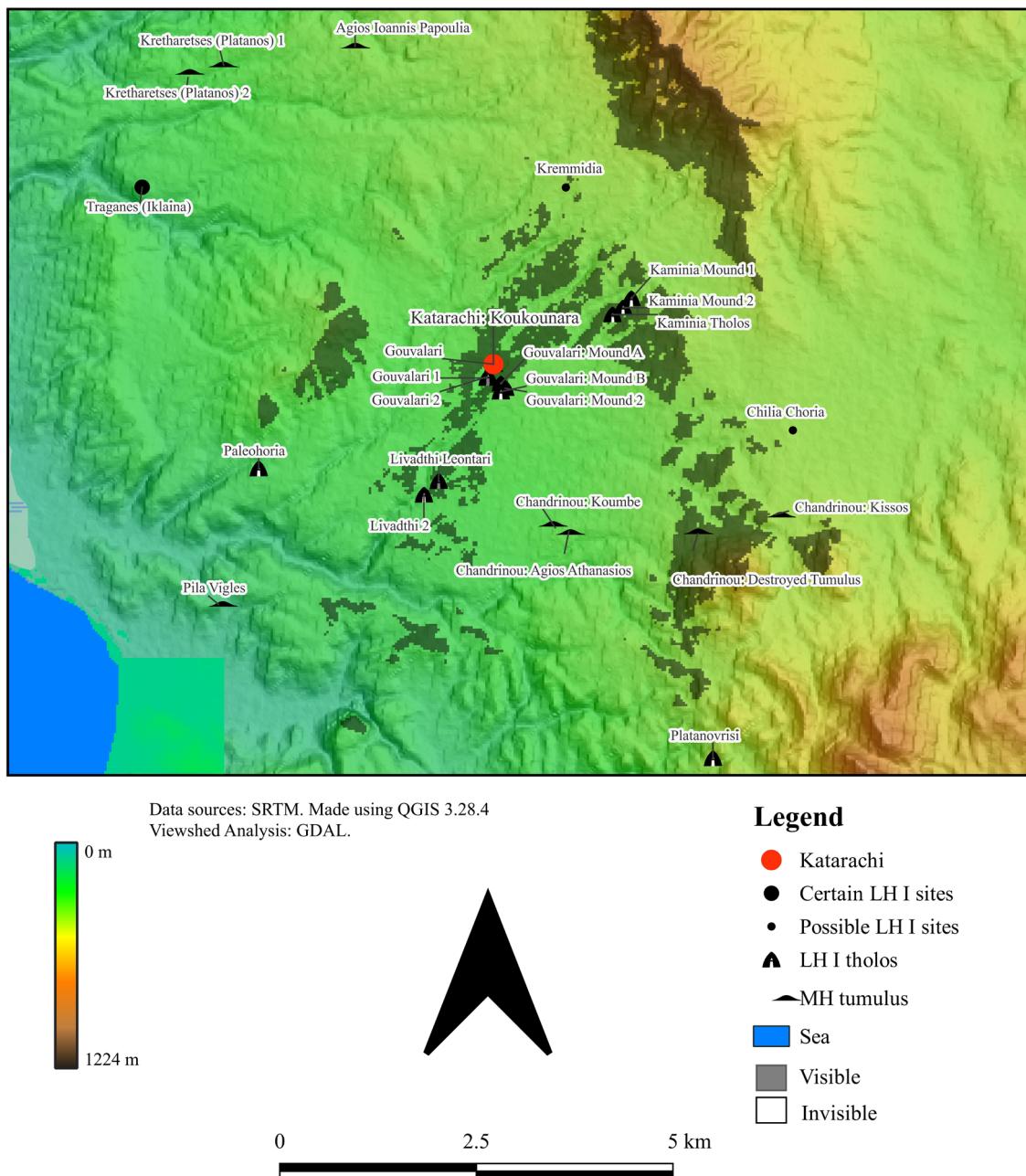


Fig. 13. Visibility of MH tumuli from Katarachi (Koukounara).

1964, 232, no. 50A). The LH III Paleochori tholos is certainly connected to the large Paleochori settlement, which also appears to have thrived in LH III (McDonald and Hope Simpson 1961, 242). The LH III tholos at Pylos, Vigla may be similarly connected to an undiscovered LH III settlement in the immediate area or with a site now buried under modern Pylos town.

If the placement of tholoi in LH I-II was characterized by an intention to be seen through landscape movement, marking a mortuary connection to the land and possible territory, then the placement of new tholoi in LH III is typified by an increased nearness to centers of habitation and thus more accessible to its inhabitants, marking a shift from the solely mnemonic to the more functional. Such a shift revived the MH *relational* importance of mortuary spaces, this time highlighting the importance of the 'familiar' dead instead

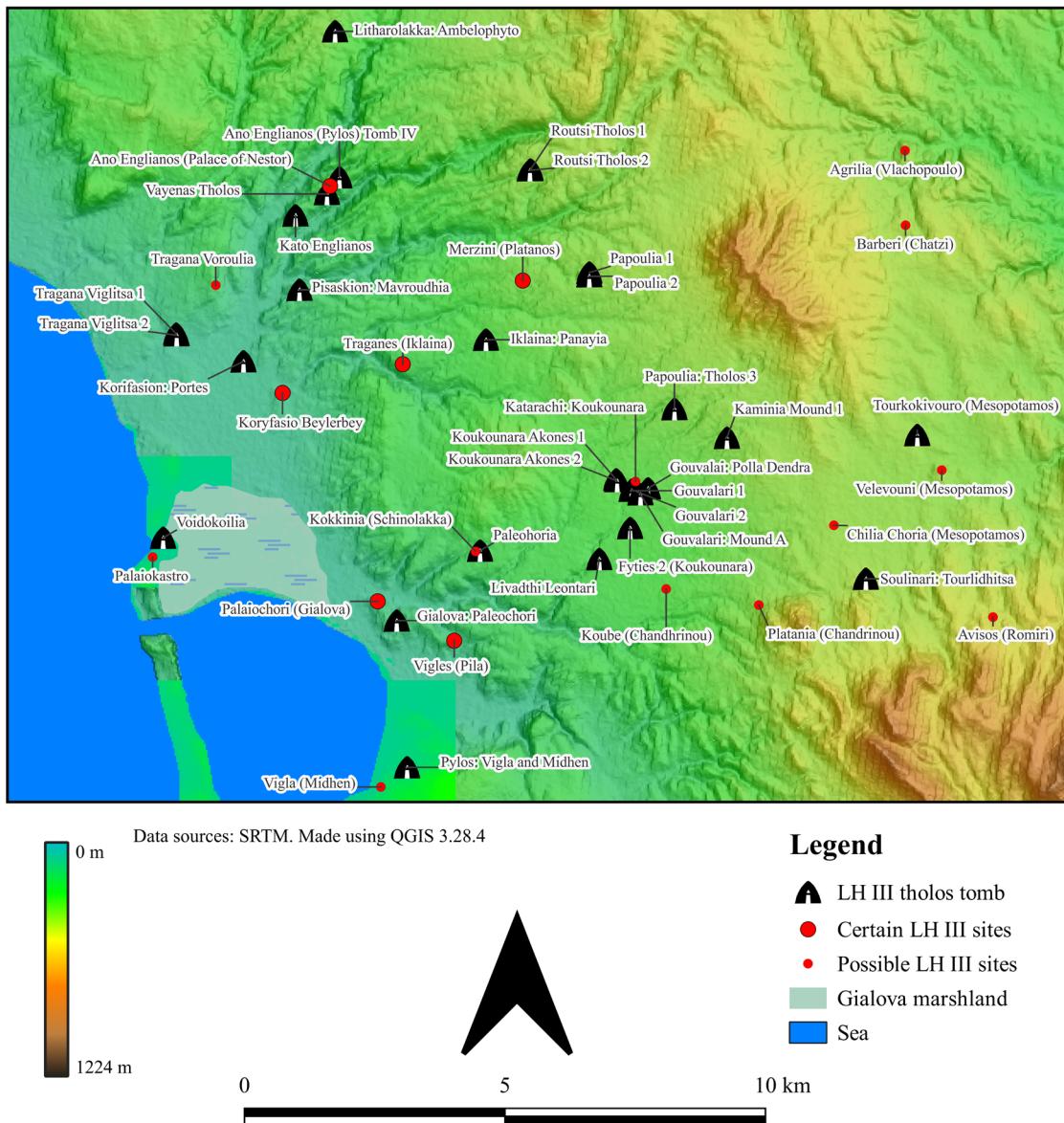
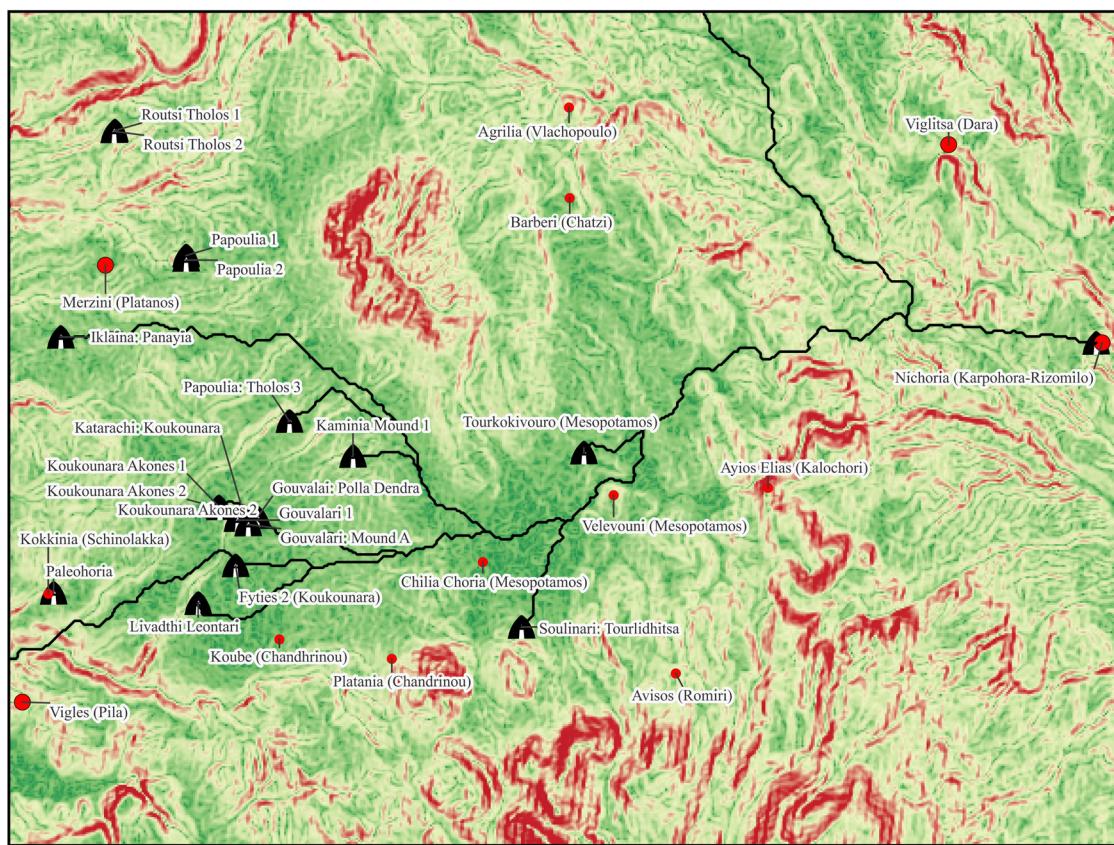


Fig. 14. Distribution of LH III tholoi in relation to contemporary settlements.

of deep past ancestors (Zikidi 2022, 297), and the mortuary spaces were taken out of contesting ideologies and placed within a space of familiarity and kinship. This trend is especially pronounced at LH IIIB Ano Englianos, where a decrease in mortuary expression coincided with the decoupling of funerary practices from political expression, resulting in a shift of influence towards the central governing authority, the Palace (Murphy 2014; Zavadil 2021).

The notable exceptions here are the LH II/III tholoi at Soulinari and Tourkokivouro, erected between the Maglavas mountain and the higher elevation area skirting around the area of modern Chandrinou. These would have conveniently marked the main movement routes from the east into the Bay of Navarino. It could be suggested that the placement of these tholoi may have been orchestrated by a central authority, such as LH IIIA Ano Englianos, to mark the territorial limits of their dominion using the placement of mortuary spaces (Fig. 15).



Data sources: SRTM. Made using QGIS 3.28.4
 Slope analysis: GDAL. Least cost path analysis: QGIS.

Slope gradient

- Flat (<2°)
- Undulating (2-8°)
- Rolling (8-15°)
- Moderately Steep (15-30°)
- Steep (>30°)



0 5 10 km

Legend

- Movement route
- Possible LH III sites
- Certain LH III sites
- ▲ LH III tholos tomb

Fig. 15. The edge of the main activity area, LH II-III tholoi as possible markers of the boundaries of the 'Kingdom of Pylos'.

SHIFTING MORTUARY PATTERNS

This analysis has revealed a much more nuanced sense of the way in which the MH and LH communities of Messenia engaged with their mortuary spaces to establish and reform their social order. In the case of the MH tumuli, the viewshed analysis showed that they were deliberately positioned to be visible from contemporary settlements or other tumuli, creating a network of visible landmarks that helped define the spaces of mortuary and symbolic action in the region. This network formed tumulus complexes, which were areas of high intervisibility, suggesting that the communities in visual contact may have shared a series of circulating norms and

beliefs, despite geographical distance. The shared values of these communities demonstrated through their tumuli formed a '*heterotopic*' map, marking through a geographical landmark their affinity, thus allowing us to characterize their relationship with the landscape as a form of "communicative topography" (von Hackwitz 2009, 155).

The placement of the LH I-II tholoi in the landscape, on the other hand, was connected to three factors relating to communal control over the landscape. The first factor was visibility during movement through the landscape. This positioning demonstrated that the direct physical interaction between the communities and their dead was more important than the demonstration of their conceptual connection to a series of values/beliefs shared amongst their communities and facilitated movement from one cemetery to the next. The second factor was the marking of movement routes *through* the Messenian landscape. This positioning marked specific areas where the spaces of deposition were either 'familiar' or 'akin', in the case of the Gouvalari ridge, or sharing similar political aspirations, in Routsi, demonstrating their control for whoever crossed through the landscape. This led us to identify the third factor, which was the relationship of tholos tombs to pre-existing tumuli. The pattern of tholos tomb construction in relation to earlier tumuli enforced the hypothesis of two different trajectories, the first aiming to reinforce tumulus ideology and continue its legacy, and the second seeking to seize symbolic control of the area and to re-orientate the power of the dead away from the pre-existing ideology, towards new centers of power, and more specifically Ano Englianios and the emerging state centered on it.

During the LH III period, as the conflicting ideologies of these divergent trajectories waned, the tholos tombs underwent a relocation closer to settlements. This strategic shift aimed to ensure accessibility to the local communities, emphasizing a clear social purpose rather than a purely political or territorial motivation.

This combined analysis has demonstrated how the agency of the mortuary landscape emerges not only from the reading of the materiality of the tombs as palimpsests of structure and practice, but also from the deliberate selection of their placement in the landscape and their position in relation to movement routes, as they are shaped by the landscape. The utilization of GIS analyses has significantly contributed to shedding light on the results, further enriching our understanding of mortuary landscapes and their role in shaping tangible and intangible narratives of place and belonging. These analytical insights provide valuable perspectives on the perception of death and the deceased in past societies, while also revealing the critical significance of the surrounding natural landscape in discerning the motivations behind the selection of specific geographical locations for funerary depositions.

CATALOGUE

NAME	CHRONOLOGY	FORM	TYPE	UMME	GAC	PRAP	ALIN	PELON	BOYD	ADDITIONAL REFERENCE
Agios Elias (Milioti)	MH • MH III?	Tumulus?	Survey	1.70	D 30			#33		Zavadil 2013, 599.
Agios Ioannis Papoulia	MH • MH III	Tumulus	Excavation	1.50	D 52		#18	#14		McDonald and Rapp 1972, 274; Zavadil 2013, 540; Zikidi 2022, 173–78.
Agrilia (Vachopoulos)	MH? • LH IIIA • LH IIIB	Habitation	Survey	III. 69B	D 25					McDonald and Rapp 1972, 268.
Ano Englanianos (Palace of Nestor)	MH • MH III • LH I • LH II • LH IIIA • LH IIIB	Habitation	Excavation	1.42	D 1	B 7				Blegen and Rawson 1966; Blegen et al. 1973.
Ano Englanianos Tombs	LH I • LH II • LH IIIA • LH IIIB	Tholos	Excavation	1.42	D 1	B 5	#14 B	#24		Blegen et al. 1973.
Avisos (Romiri)	MH? • LH IIIA • LH IIIB	Habitation	Survey	II. 75B	D 31					Hope Simpson 1981, 120.
Barberi (Chatzi)	MH? • LH IIIA • LH IIIB	Habitation	Survey	III. 69A	D 26					Hope Simpson 1981, 120.
Chandrinou: Agios Athanasiос	MH • MH III	Tumulus	Survey	III. 69A	D 37					Hope Simpson 1981, 120.
Chandrinou: Destroyed Tumulus	MH? • MH III?	Tumulus	Survey					#8		Zavadil 2013, 597.
Chandrinou: Kissos	MH • MH III • LH I • LH II	Tumulus	Excavation	III. 67A	D 32			#8		Marinatos 1966, 105–7; Cavanagh and Mee 1998, 199; Zavadil 2013, 298.
Chandrinou: Koumbe	LH IIIA • LH IIIB	Habitation	Survey	1.66	D 37		#45			Hope Simpson 1981, 119.
Chilia Choria	MH? • LH I • LH IIIA • LH IIIB	Habitation	Survey	1.68	D 28		#47			Marinatos 1966, 108.
Fyrties 1 & 2 (Koukounara)	LH II • LH IIIA	Tholos	Excavation	I. 65A			#20 B-C	#12		Marinatos 1958a; Korres 1974.
Gargaliani Megas Kombos	MH • MH III • LH I • LH II • LH IIIA • LH IIIB	Habitation	Survey		D 2					
Gialova: Paleochori	LH IIIA • LH IIIB	Habitation	Survey	1.58	D 42		#39	#5		Hope Simpson 1981, 118.
Gouvalari Tholos 1	LH I • LH II? • LH IIIA •	Tholos	Excavation	1.65	D 35		#44	#20 D	#10	Korres 1975.
Gouvalari Tholos 2	MH III • LH II • LH IIIA	Tholos	Excavation	1.65	D 35		#44	#20 E	#10	Marinatos 1959; Korres 1977.
Gouvalari: Mound 2	-	Tholos	Excavation	1.65	D 35		#44	#10		Marinatos 1959, 175.
Gouvalari: Mound A	MH III • LH I • LH II? • LH IIIA • LH IIIB	Tholos	Excavation	1.65	D 35		#44	#10		Korres 1975.
Gouvalari: Mound B	MH III • LH I	Tholos	Excavation	1.65	D 35		#44	#10		Korres 1975.
Gouvalari: Polla Dendra	LH IIIA • LH IIIB	Tholos	Excavation	1.65	D 35		#44	#20 F	#10	Marinatos 1961.
Iklaina (Traganes)	MH • MH III • LH I • LH II • LH IIIA • LH IIIB • LH IIIC?	Habitation	Excavation	1.52	D 46		#32			Marinatos 1954, 308–11; Hope Simpson 1981, 117; Zavadil 2013, 408; Cosmopoulos 2019, 349–80.

NAME	CHRONOLOGY	FORM	TYPE	UMME	GAC	PRAP	ALIN	PELON	BOYD	ADDITIONAL REFERENCE
Iklaina: Panayia	LH II? • MH III • LH I • LH II • LH IIIA • LH IIIB	Tholos?	Survey	I. 54	D 50	#34				Hope Simpson 1981, 117.
Kalopsana (Metaxadha)	MH III • LH I • LH II •	Habitation	Survey	III. 41B	D 22	A3				
Kaminia Mound 1 & 2	MH III • LH I • LH II •	Tumulus/Tholos	Excavation		D 34			#13		Korres 1975, 1980; Lolas 1985.
Kanalos (Gargaliani)	MH III • LH I • LH II • LH IIIA • LH IIIB	Habitation	Survey	I. 38	D 15	D1	#22			Hope Simpson 1981, 121.
Kapourelka-Diakoupia	MH • MH III • LH I	Tumulus	Survey	I. 44			#20			McDonald and Rapp 1972, 270; Zavadil 2013, 485.
Katarachi-Koukounara	MH • MH III • LH I • LH II • LH IIIA • LH IIIB	Habitation	Survey	I. 65	D 35					
Kato Englianos	LH II • LH IIIA • LH IIIB	Tholos	Excavation		C5		#14	A	#24	Zavadil 2013, 366.
Kephhalovrysi (Chalvatos/Chalratos)	MH III • LH I • LH II	Tholos	Excavation							Zavadil 2013, 449.
Kokkinia (Schinolakka)	MH • LH IIIA • LH IIIB	Habitation	Survey	I. 64	D 43	#43				Hope Simpson 1981, 118.
Kokkinorachi (Pila)	MH? • LH?	Habitation	Survey	III. 58C	D 39					Hope Simpson 1981, 118.
Korifasion: Portes	MH • MH III • LH I • LH II • LH IIIA • LH IIIB	Habitation	Survey	I. 55	D 3	I3	#36			Blegen 1954, 158; Hope Simpson 1981, 115.
Koryfasio Beylerbey	MH • MH III • LH I • LH II • LH IIIA • LH IIIB	Habitation	Survey and Excavation	I. 56	D 4	I1	#38			Marinatos 1960, 197; McDonald and Rapp 1972, 264; Hope Simpson 1981, 115.
Koryfasio Haratsari (Osmanaga tholos)	MH III • LH I • LH II?	Tholos (EH habitation?)	Excavation	I. 57	D 5	I2	#37	#16	#16	Blegen 1954, 158–62; Hope Simpson 1981, 116; Zavadil 2013, 451.
Koukounara Akones 1 & 2	LH II? • LH IIIA • LH IIIB	Tholos	Excavation	III. 65	D 35			#20	G-H	#11
Kremmidia	LH IIIA • LH IIIB	Habitation	Survey	II. 65B	D 34					Marinatos 1963, 116; Hope Simpson 1981, 119; Zavadil 2013, 480.
Kretharaises (Platanois) 1 & 2	MH? LH IIIA • LH IIIB	Tumulus	Survey	I. 51	D 48	#31				Korres 1982a, 230; Zavadil 2013, 600.
Lefki Kaldamou (I23-I27)	MH?	Tumulus	Survey	I. 43	D 14	12 ³ -I27		#21		Spencer 1995, 277–92; Zavadil 2013, 599.
Litharolakka: Ambelophyto	LH II • LH IIIA • LH IIIB	Tholos	Excavation							Arapogianni 2013, 322–6.
Livadthi	LH I • LH II • LH IIIA?	Tholos	Excavation	I. 65			#20	A	#12	Marinatos 1958a.
Maryeli Koutsouveri	MH • LH I • LH II	Habitation	Survey	II. 50A	D 51	L1				
Merzini (Phatnos)	MH • LH IIIB	Habitation	Survey							McDonald and Rapp 1972, 272; Hope Simpson 1981, 117.

NAME	CHRONOLOGY	FORM	TYPE	UMME	GAC	PRAP	ALIN	PELON	BOYD	ADDITIONAL REFERENCE
Neromilos: Viglitsa	LH	Tholos	Survey	1. 71	D 101					Hope Simpson 1981, 126; Boyd 2002, 214; Zavadil 2013, 600.
Nichoria Settlement	MH • LH I • LH II • LH IIIA • LH IIIB • LH IIIC	Habitation	Excavation	1. 76			#53			McDonald and Rapp 1972, 218–73; Hope Simpson 1981, 125.
Nichoria: MME Tholos	LH II • LH IIIA • LH IIIB	Tholos	Excavation	1. 76			#53	#13	#30	Hope Simpson 1981, 125; McDonald and Wilkie 1992, 231–344; Zavadil 2013, 418; Boyd 2014a.
Palaiokastro (Petrochori)	LH IIIA • LH IIIB	Habitation	Excavation	1. 61	D 9	#41				Marinatos 1958b, 148–50; Hope Simpson 1981, 117.
Paleohoria (Koukounara)	MH III • LH I • LH II • LH IIIA • LH IIIB • LH IIIC?	Tholos	Excavation	III. 65A	D 36		#20	J	#32	Marinatos 1961, 174–5; Korres 1976, 349; Lolas 1985, 166.
Papoulia 1	LH IIIA • LH IIIB	Tholos	Excavation	1. 49	D 53	#35	#18	#14		Marinatos 1954, 311–6; Hope Simpson 1981, 117; Zavadil 2013, 537.
Papoulia 2	LH IIIA • LH IIIB	Tholos	Excavation	1. 49	D 53	#35	#18	#14		Marinatos 1954, 311–6; Hope Simpson 1981, 117; Zavadil 2013, 537..
Papoulia 3	LH II • LH IIIA • LH IIIB	Tholos	Excavation	1. 49	D 53	#35	#18	#14		Marinatos 1954, 311–6; Hope Simpson 1981, 117; Zavadil 2013, 537..
Peristeria South Tholos 1	LH I • LH II • LH IIIA	Tholos	Excavation	I. 22B	D 200	#20		#35		Marinatos, 1961; 1962; Korres 1975, 83; 1976c, figure 11 and plates 266 and 268; 1977b, plate 172.
Peristeria Tholos 1	LH I? • LH II • LH IIIA • LH IIIB? • LH IIIC?	Tholos	Excavation	I. 22B	D 200	#20	#23	A	#35	Marinatos 1960, 206–9; Marinatos, 1961; Korres 1976.
Peristeria Tholos 2	LH I • LH II	Tholos	Excavation	I. 22B	D 200	#20	#23	B	#35	Marinatos 1960, 1962; Korres 1977.
Peristeria Tholos 3	MH III? • LH I	Tholos	Excavation	I. 22B	D 200	#20	#23	C	#35	Marinatos 1964; Korres 1977.
Peristeria: Kokorakou Mound	MH	Tumulus	Excavation	I. 22B	D 200	#20	#23			Marinatos 1960, 206; 1964.
Pila Vigles	MH? • LH IIIA • LH IIIB	Habitation	Survey	III. 58A	D 41					Hope Simpson 1981, 118.
Pisaskion: Mavroudha (Chourou)	LH IIIB • LH IIIC?	Tholos	Survey	I. 42A	D 2	#27				McDonald and Rapp 1972, 264; Hope Simpson 1981, 115.
Platania (Chandrinou)	LH IIIA • LH IIIB	Habitation	Survey	I. 67	D 33	#46				Hope Simpson 1981, 119.
Platanovisi	LH I?	Tholos	Excavation							Zavadil 2013, 548.
Pyrgos Tsouka	MH	Tumulus	Survey	I. 39	D 18	119				Hope Simpson 2007, 111; Zavadil 2013, 601.
Romanou: Golf Course	LH I	Tholos (EH settlement)	Excavation							Rambach 2007, 351–54; 2008, 399–403; 2009, 361–64; Zavadil 2013, 597.

NAME	CHRONOLOGY	FORM	TYPE	UMME	PRAP	GAC	ÅLIN	PELON	BOYD	ADDITIONAL REFERENCE		
Routsi Tholos 1 & 2	MH III? • LH I • LH II • LH IIIA	Tholos	Excavation	I. 48	D 54		#30	#17 A-B	#27	Marinatos 1953, 249; Hope Simpson 1981, 116; Kouroulios 1982b; Zavadil 2013, 524; Boyd 2014b; Zikidi 2022, 205–12.		
Soulinari: Tourlidhitsa	LH II • LH IIIA •	Tholos	Excavation	II. 68A	D 29			#19				
Stamati Rachi (Vlachopoulos)	MH? • LH I?	Habitation	Survey	II. 69C	D 24					McDonald and Rapp 1972, 268.		
Tourkokivouro (Mesopotamos)	LH IIIA • LH IIIB	Tholos?	Survey	I. 69				#13 C-E		Hope Simpson 1981, 120; Boyd 2002, 212; Zavadil 2013, 495.		
Tragana Viglitsa 1	LH II • LH IIIA	Tholos	Excavation	I. 46	D 11	I6		#15 A	#18	Skias 1909, 274–92; Kouroulios 1912, 268; Marinatos 1955, 88–91.		
Tragana Viglitsa 2	LH II • LH IIIA • LH IIIC	Tholos	Excavation	I. 46	D 11	I6		#15 B	#18	Skias 1909, 274–92; Kouroulios 1912, 268; Marinatos 1955, 88–91.		
Tragana Voroulia	MH III • LH I • LH II • LH IIIA • LH IIIB	Habitation	Excavation	I. 45	D 12	C3	#29			Marinatos 1956, 90; Hope Simpson 1981, 116.		
Tragana: Kapoureika	MH	Tumulus	Survey	I. 44	D 13				#20			
Tumulus of Giorgopoulos	MH • MH III	Tumulus	Excavation	I. 65	D 54	#44			#27			
Tumulus of Kalogeropoulos	MH I • MH II • MH III	Tumulus	Excavation		D 54				#27			
Vayenas Tholos	MH III • LH I • LH II	Tholos	Excavation				#14 C	#24		Zavadil 2013, 374; Murphy 2021, 219.		
Velevouni (Mesopotamos)	LH IIIA • LH IIIB	Habitation	Survey	III. 69	D 27					Hope Simpson 1981, 120.		
Vigla (Midhen and Pila)	LH IIIB	Habitation	Survey	I. 63	D 44	#42				Hope Simpson 1981, 118.		
Viglitsa (Dara)	MH • LH IIIB	Habitation	Survey	II. 76D						Hope Simpson 1981, 126; Zavadil 2013, 359.		
Vóidokolla: Divari	MH	Tumulus	Excavation	I. 60					#25	Kaltas 1981; 1982; Zavadil 2013, 364.		
Vóidokolla	MH • MH III • LH I • LH IIIA • LH IIIB	Tumulus and Tholos (EH settlement)	Excavation		D 8		#40	#19	#17	Hope Simpson 1981, 117; Zavadil 2013, 587; Zikidi 2022, 179–84.		
Vólimidia	LH I • LH II • LH IIIA • LH IIIB • LH IIIC?	Chamber tomb	Excavation	I. 41	D 20			#25	#23	Marinatos 1952, 473–96; 1953, 238–50; 1954, 299–308; Hope Simpson 1981, 116; Zavadil 2013, 324; Zikidi 2022, 224–27.		
Vólimidia (Chora) Settlement	LH	Habitation	Survey	I. 41	D 20		#24					

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