

## UPLANDS AND COASTSCAPES OF SOUTHERN ALBANIA: PRELIMINARY DATA FROM THE SURVEY OF BRONZE AGE HILLFORTS

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**ABSTRACT** – Stretching between the ancient Acroceraunian mountains and the Ionian Sea, southern Albania shorelines are home to over twenty hillforts dated from the Middle-Late Bronze Age to the Early Iron Age. Despite chronological uncertainties and issues of site accessibility, archaeological visibility, and uneven documentation, available excavation and survey data allow an assessment of the strategic location of these sites and their control over access to the hinterland. This paper focuses on the preliminary results of fieldwalking and topographic surveys in the fortified sites of Karos, Badhra, Kukum, and Ngura, located along the coastline between the modern centres of Himara and Borsh. This research integrates topographical and archaeological data, comparative analysis with other hillforts in the region, as well as introductory spatial analysis to enhance understanding of coastal and hinterland interactions and exchanges during the Bronze Age in Albania.

**KEYWORDS** – Southern Albania, hillforts, coastal networks, settlement dynamics.

**RIASSUNTO** – *Situate tra gli antichi Monti Acrocerauni e il Mar Ionio, le coste dell'Albania meridionale ospitano oltre venti siti fortificati d'altura databili dalla media-tarda Età del Bronzo fino agli inizi dell'Età del Ferro. Nonostante le incertezze cronologiche, le difficoltà di accesso ai siti, la scarsa visibilità delle evidenze archeologiche e la documentazione disomogenea, gli scavi e le ricognizioni effettuate costituiscono una base utile per analizzare la collocazione strategica di questi insediamenti, spesso finalizzata al controllo degli accessi verso l'entroterra. Il presente contributo si concentra sui risultati preliminari delle ricognizioni di superficie e delle indagini topografiche condotte nei siti fortificati di Karos, Badhra, Kukum e Ngura, situati lungo il tratto costiero compreso tra gli attuali centri di Himara e Borsh. La ricerca integra dati topografici e archeologici, analisi comparative con altri siti fortificati d'altura della regione e analisi spaziali preliminari, al fine di approfondire la comprensione delle interazioni e degli scambi tra la fascia costiera e l'entroterra durante l'Età del Bronzo in Albania.*

**PAROLE CHIAVE** – *Albania meridionale, hillforts, reti costiere, dinamiche insediative.*

### INTRODUCTION

Southern Albania might initially appear as an inhospitable territory, dominated by imposing mountain ranges that extend predominantly along a north-south axis, reaching the coast and making the inland areas seemingly inaccessible. Since antiquity, the hinterland has only been approachable via narrow river valleys that follow the course of the main water-

ways, which divide the mountain ridges, or along ridge-top and mid-slope routes running parallel to the coastal mountain ranges. These are complemented by smaller rivers and streams, flowing east to west, that cut transversely across the mountains and connect with the main rivers, thereby enabling access from the coastal area to the interior. In some cases, these waterways give rise to modest allu-

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vial plains near their mouths. A significant example of this landscape setting is found along the coastal stretch between Dhërmi and Lukovë, where the ancient Acroceraunian mountains extend all the way to the sea, shaping a rugged and indented coastline. Here, the ridges break down into a series of hills descending towards the Gulf of Saranda, cut by narrow watercourses that create rare passageways between the coast and the hinterland. At the mouths of these streams, small coastal basins or plains open, becoming strategic nodes of connection with the main inland river valleys, such as those of the Shushica, Drinos, and Kalasa rivers. Among these, the Kudhësi stream that takes the name Qeparos in its final stretch stands out for its importance: having branched off from the Kalasa basin, it flows into the sea just south of the Bay of Porto Palermo. Only one ridge separates it from the Borsh stream, whose alluvial basin represents one of the few stretches where the coast breaks through, allowing relatively easy access to the inland areas. Continuing southward, the Acroceraunian range gradually loses the harshness of its northern segment as it merges into the Ksamil Peninsula and the promontory that separates Lake Vivari from the Ionian Sea, upon which stands the UNESCO World Heritage Site of Butrint. The ridge remains close and parallel to the coastline, favouring the development of numerous natural harbours and river mouths that facilitate contact with the interior.

Taking into account the peculiar geomorphological features and the pronounced variability of the orogenetic processes that have shaped a markedly differentiated mountainous morphology, the long-standing tendency to favour upland settlement becomes clearer. The widespread presence of mountainous reliefs, extending from north to south and

reaching the coastal strip, has significantly influenced ancient settlement patterns, fostering a strong interconnection between the coast, mountain slopes, and river valleys. This spatial organisation also profoundly affected communication systems, which mainly developed along the narrow alluvial valley floors hemmed in between mountain ridges, and it encouraged a preference for upland sites. Only a few valley areas show evidence of stable occupation, while there is a marked tendency to settle on summit palaeosurfaces, slope plateaus, fluvial terraces, or rocky spurs, both along the coastal hills and in the hinterland (Tartaron 2003; Giorgi, Bogdani 2012: 31-41; Gerogiannis 2021: 199-204; Carbotti *et al.* 2025: 81-82). This preference is also linked to the frequent and significant episodes of waterlogging that affected the few lowland areas located near major hydrographic basins and river mouths. In fact, it is important to underline that coastal areas have gone through several alterations over time in southern Albania, due not only to the alternating presence of wetlands, but also to subsidence and uplift phenomena and sediment deposition, combined to a lesser extent with changing sea levels (Perissoratis, Conispoliatis 2003; Tartaron 2004: 132). Some well-known case studies in the area come from the Butrint lagoon (Lane 2004; Aritzegui *et al.* 2010; Morellón *et al.* 2016, 2019), the Kalamas River mouth (Chabrol *et al.* 2012, 2022), and the Glykys Limen (Wiseman, Zachos 2003: ch. 6; Tartaron 2004: ch. 7), whose current appearances are not only the results of natural processes of sedimentation but also of massive operations of land reclamation, drainage, and diversion of watercourses held between 1960s and 1990s to promote their agricultural exploitation, in particular in the first two cases. It is very likely that the Borsh river mouth had a similar con-

figuration in the past, as in the case of Butrint<sup>1</sup>. Within this context, elevated areas emerged as some of the few genuinely habitable places and, unsurprisingly, continue to be among the primary subjects of archaeological investigation in the region.

The origins of these settlements, already documented from the Middle Bronze Age onward, may be understood as a necessary response to such territorial constraints. However, these same characteristics have long hindered systematic fieldwork, limiting the detailed reconstruction of the evolution of settlement dynamics and patterns over time. To overcome these limitations, the FortNet Project (University of Bologna, Sapienza University of Rome)<sup>2</sup> began in 2023 with the aim of reanalysing existing data by applying methodologies derived from landscape archaeology and ancient topography to the study of these upland contexts. The project is based on the systematic use of non-invasive techniques that enable an extensive and sustainable reading of the landscape, and its ultimate goal is the creation of a new, up-to-date, and shareable geodatabase, capable of providing useful information to both the scientific community and the institutions responsible for the protection and enhancement of southern Albania's extensive archaeological heritage.

This contribution focuses on the results of surface surveys conducted at four fortified sites located near the present-day Bay of Porto Palermo and the archaeological

park of Borsh, and on how the combined use of legacy data, preliminary surface survey results, and post-processed data from topographic surveys contributes to refining their interpretation within the broader regional framework of the Bronze Age.

## RESEARCH BACKGROUND: LATE BRONZE AGE-EARLY IRON AGE HILLFORTS IN SOUTHERN ALBANIA

Evidence of settlement during the Bronze and Iron Ages in southwestern Albania is concentrated primarily along the coastal strip between the modern town of Dhermi and the Vrina plain, near the Greek border (fig. 1)<sup>3</sup>. Although the available data are in some cases limited due to the fragmentary nature of previous research and its concentration in selected areas, they nonetheless convey the image of a large-scale settlement pattern, closely linked to coastal and lagoonal areas. Some specific indications come from the occasional artefacts finds, which are fairly widespread throughout the region and mostly consist of handmade pottery and weapons, especially double axes. An initial example is provided by the finds reported on the hills between Himara and the mouth of the Borsh stream, where the presence of cave shelters, used over long periods, is also notable, as in the case of the Himara caves (Gjipali 2007: 114-117; Francis *et al.* 2009: 9-18) and the Spilea cave (Francis 2005: 92-93; Giorgi, Bogdani 2012: 237)<sup>4</sup>. Similarly, and moving

1 See the palaeoenvironmental reconstruction of the Butrint lagoon proposed by the Butrint Foundation, cfr. Hodges 2006: 14.

2 PRIN 2022 FortNet Project (Unione Europea - Next Generation EU, Missione 4 Componente 1, CUP J53D23000100006); <https://site.unibo.it/fortnetproject/en>

3 The limitations were already highlighted in Bejko 1994 and more recently revisited by Krapf 2024. Reference is also made to Lafe, Galaty 2009 for an overview of coastal settlement across the whole of Albania, and to Agolli 2017 for a thorough analysis of the biases that have influenced archaeological research on prehistoric phases in the Albanian territory during the twentieth century.

4 Çipa *et al.* 2022: 44-46 mention the materials recovered during surveys at the sites of Buna, Sklero, and Shën Dimitri. Touchais 2002: 212, citing Harding 1984: 240, reports the discovery of a double-headed axe near Qeparo.

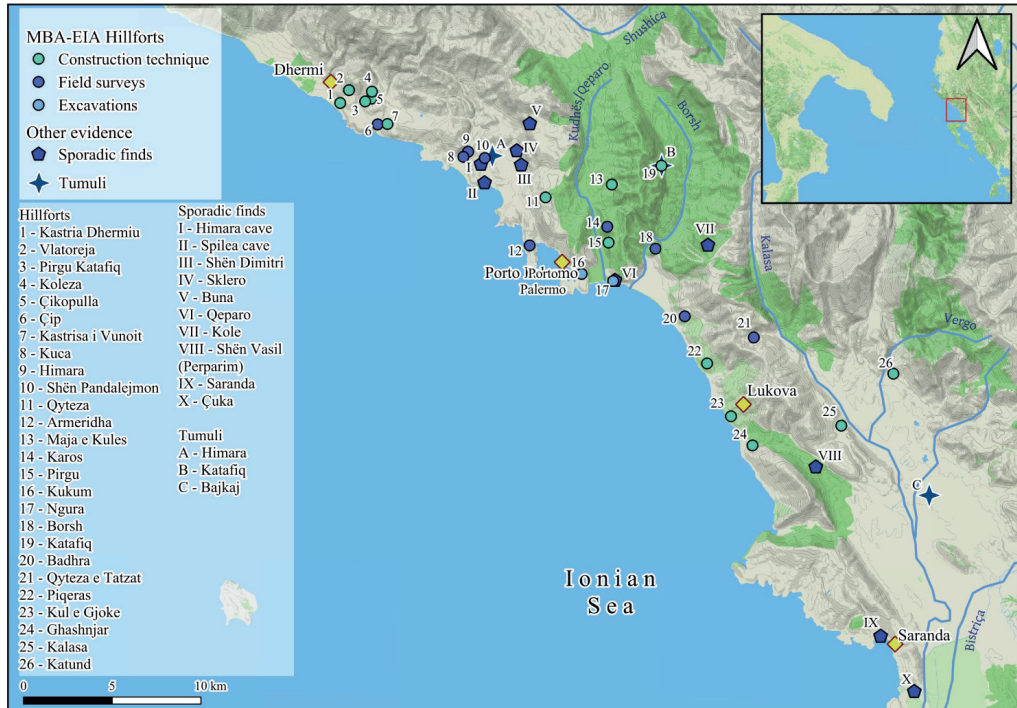


Fig. 1 – Hillforts and other evidence of settlement during the Late Bronze Age and Early Iron Age along the coast of southern Albania. Hillforts are divided by how their chronology was assessed in the past, if by means of excavations, field survey and collection of materials, or by comparisons between construction techniques.

further south, comparable types of finds have been recorded in the city of Saranda and its hinterland, as well as in the sites of the Ksamil Peninsula and the Vrina plain<sup>5</sup>. Among these, a particularly noteworthy element is the significant number of double axes, evenly distributed along the entire coastal area<sup>6</sup>. These sporadic discoveries are complemented by another, more structured type of evidence that is highly

characteristic of this chronological phase: the burial tumuli (Oikonomidis *et al.* 2011: 187-192; Lera *et al.* 2017: 224-226). Within the coastal strip under consideration, the three tumuli at Bajkaj (Budina 1971: 291-292) and the two tumuli at Himara (Çipa *et al.* 2022, 2024) provide further testimony to the complexity of settlement in this area between the Middle Bronze Age and the beginning of the Iron Age<sup>7</sup>.

5 In the Saranda area, finds of coarse ware pottery fragments have been reported at Shën Nikolla (Giorgi, Bogdani 2012: 227-228). For the Ksamil peninsula and the Vrina plain, coarse ware pottery has been documented in Kalivo (Lima 2013), Shën Dimitri (Parangoni 2020: site no. 1001), Orla (Gjipali 2009), and Çuka e Ajtait (Bogdani 2024: 31).

6 These were found at Shën Vasil (Giorgi, Bogdani 2012: 205), Saranda (Touchais 2002: 213; Giorgi, Bogdani 2012: 164-166), Butrint and Xara (Touchais 2002: 213), and Shalësi (Giorgi, Bogdani 2012: 200-201).

7 See also Giorgi 2022. It is also worth noting the presence of possible tumuli at Katafiq (Koçi 1991: 57) and Dërmish (Giorgi, Bogdani 2012: 163), as well as the possible deposit at Çuka of Saranda (Korkuti 1990). In addition to the tumuli mentioned, those located inland at the northern and southern entrances of the Drinos Valley in southern Albania are also well known, with an overview provided in Cabanes *et al.* 2008: 35-58.

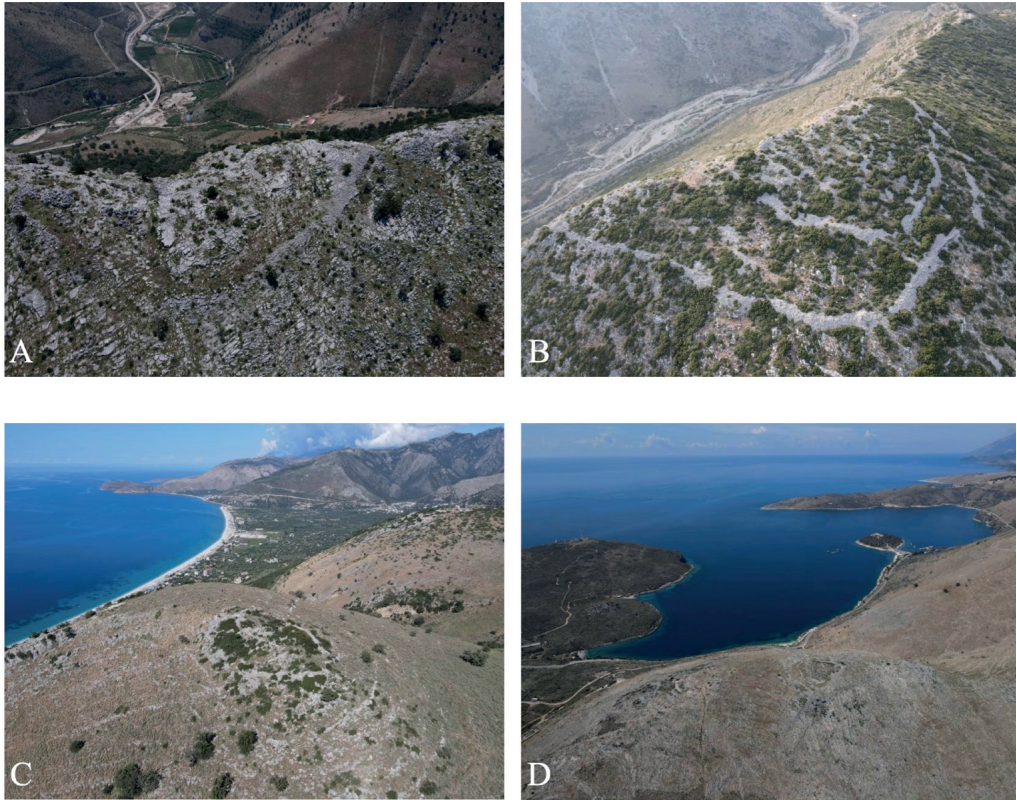


Fig. 2 – Examples of typologies of LBA hillforts in southern Albania: A) Vagalat, type 1 (Mali i Miles, Pavlla River valley); B) Karos, type 3 (Mali i Karosit, Kudhës-Qeparo River valley); C) Badhra, type 2 (Kodra i Kalasë, Ionian coast); D) Kukum, type 2 (Qafë i Kukumit, Ionian coast).

However, the main form of settlement characterising the Late Bronze Age and Early Iron Age in southern Albania is represented by hillforts, similar to what is observed in other parts of the western Balkans during the same period (Iacono *et al.* 2022: 380-382). Built using unworked stones laid dry without mortar, the fortifications along the coast can be grouped into three main types. The first consists of a single wall structure that follows the geomorphological configuration of the terrain and therefore only protects the most exposed sections of the hill. The second type is defined by a circular or ellipsoidal enclosure that surrounds the summit of the elevation, adapting to the natural morphology of the context. The third and

final type is characterised by a main enclosure wall crowning the summit, complemented by a series of retaining walls running down the slopes (Lera *et al.* 2009: 325-326; Carbotti *et al.* 2024: 20). Where preserved, these fortifications often appear today as scattered clusters of medium-sized, unworked stones, and only in a few cases do small portions of the original elevation remain visible. Although this construction technique is highly versatile, it also presents significant conservation challenges over time. These issues, compounded by the logistical difficulties of conducting fieldwork in upland contexts, mean that both the function and, above all, the precise chronology of these sites is open to debate in some cases (fig. 2).

The construction of these structures results from the convergence of various needs, namely the effective exploitation of the region's agro-pastoral resources, the control of the limited yet essential natural communication routes connecting the coast with the hinterland, and the establishment of a permanent element within the landscape, one that expresses a community's identity and its appropriation of the territory<sup>8</sup>. In some cases, these functions have been interpreted as evidence of an evolving settlement pattern, as seen in the group of fortifications around the bay of Porto Palermo and the mouth of the Borsh stream. Kukum and Ngura, located on lower hills directly adjacent to the coastline and traditionally dated to the Early Bronze Age, have been interpreted as sites with a solely pastoral and residential function. Later fortifications such as Badhra and Karos, however, appear to have played a more active role in the control of communication routes and the surrounding territory, although retaining their pastoral function and, in the case of Badhra, also residential purpose. Together, they form an interconnected network composed of proper settlements exploiting nearby pastures and farmland thanks to their foundation on natural terraces, and smaller fortifications used exclusively to monitor mobility routes (Koçi 1991: 59; Çipa, Meshini 2016: 77). The occupation of topographically dominant positions through the multiplication of hillforts is also linked to the emergence of growing social differentiation among the communities inhabiting the region. These groups gradually shaped their identity and contributed to the formation of ethnic (*ethne*) and political (*koina*) groups men-

tioned in historical sources (Shpuza 2014: 116-117; Carbotti *et al.* 2024: 24)<sup>9</sup>.

These elements are further related to another important factor: the role of these fortified sites in establishing contact with the outside world, given their proximity to the coastline. A development similar to the one seen in the settlements of Gajtan and Shkodra in northern Illyria can likely be posited, where fortified sites that either allowed or restricted access between the coast and hinterland were not only territorial control centres and coastal surveillance points but also instruments for regulating trade networks (Galaty 2007: 137-138). These sites may also be interpreted as signalling points and expressions of the communities that inhabited the land and defined their sphere of influence<sup>10</sup>. Monumental burials similarly communicated presence, as evidenced by the exponential increase in tumuli across the Albanian territory between the Late Bronze Age and the Early Iron Age. Often associated with fortified sites, these tumuli functioned as symbolic landmarks and territorial markers: a striking example within the study area is the aforementioned tumulus of Himara (Bejko 2016: 78)<sup>11</sup>.

Nevertheless, while these elements allow for a general overview, detailed investigations of individual fortified sites remain challenging. The region's geomorphological characteristics have often negatively affected site accessibility, limited archaeological visibility, and hindered in-depth fieldwork (Carbotti *et al.* 2024: 9-11; Carbotti *et al.* 2025: 81-82). This has direct consequences on the chronological attribution of the fortifications: except for a few contexts subject to survey or exca-

8 Similarly to what Walsh, Mocci 2011: 105 highlighted for the French Alps between the 3rd and 2nd millennium BCE.

9 For the *ethne* and *koina* that inhabited southern Albania and the historical region of Epirus, see Gerogiannis 2021: 57-83 for a recent analysis.

10 Similar cases can be found in Čučović 2017; Choinas *et al.* 2022.

11 Tartaron 2013: 119-120, discusses the use of tumuli as seamarks.

DATE	TARTARON 2013	PRENDI 1977-1978	PRENDI 1982	ONNIS 2008A	IACONO 2014	RUKA, GALATY 2022
3100-2700	Early Helladic I					Early Bronze Age (3129 cal BCE)
2700-2200	Early Helladic II					Early Bronze Age
2200-2000	Early Helladic III		Early Bronze Age (From 2100/2000 BCE)			Early Bronze Age
2000-1850	Middle Helladic I	Middle Bronze Age (From 18 <sup>th</sup> cen. BCE)	Early Bronze Age and beginning of the Middle Bronze Age (1800 BCE)		Middle Bronze Age	Early Bronze Age and beginning of the Middle Bronze Age (1976 cal BCE)
1850-1700	Middle Helladic II	Middle Bronze Age	Middle Bronze Age	Middle Bronze Age	Middle Bronze Age	Middle Bronze Age
1700-1600	Middle Helladic III	Middle Bronze Age	Middle Bronze Age	Middle Bronze Age	Middle Bronze Age	Middle Bronze Age
1600-1500	Late Helladic I	Middle Bronze Age (Until 16 <sup>th</sup> cen. BCE)	Middle Bronze Age	Middle Bronze Age	Middle Bronze Age	Middle Bronze Age
1500-1440	Late Helladic IIA	Late Bronze Age (From 15 <sup>th</sup> cen. BCE)	Late Bronze Age	Middle Bronze Age	Late Bronze Age	Middle Bronze Age and beginning of the Late Bronze Age (1561 cal BCE)
1440-1390	Late Helladic IIB	Late Bronze Age	Late Bronze Age	Middle Bronze Age	Late Bronze Age	Late Bronze Age
1390-1370	Late Helladic IIIA1	Late Bronze Age	Late Bronze Age	Late Bronze Age	Late Bronze Age	Late Bronze Age
1370-1300	Late Helladic IIIA2	Late Bronze Age	Late Bronze Age	Late Bronze Age	Late Bronze Age	Late Bronze Age
1300-1190	Late Helladic IIIB	Late Bronze Age	Late Bronze Age	Late Bronze Age	Late Bronze Age	Late Bronze Age
1190-1070	Late Helladic IIIC	Late Bronze Age (Until 13 <sup>th</sup> century BCE)	End of Late Bronze Age (1100 BCE)	Late Bronze Age	Late Bronze Age	Late Bronze Age and Transition LBA-EIA (1103 cal BCE)
1070-1015	Submycenaean	Transition to the Iron Age (11th-9 <sup>th</sup> century BCE)		Beginning of Iron Age	Late Bronze Age	Transition LBA-EIA
						Transition LBA-EIA (Until 895 cal BCE)
						Early Iron Age (895 cal BCE - 797 cal BCE)
						Developed Iron Age (797 cal BCE - 587 cal BCE)

Tab. 1 - Comparison of absolute (Tartaron 2013; Ruka, Galaty 2021) and relative (Prendi 1977-1978; Prendi 1982; Onnis 2008a; Iacono 2014) chronology used as reference for archaeological records in Albania by scholars.

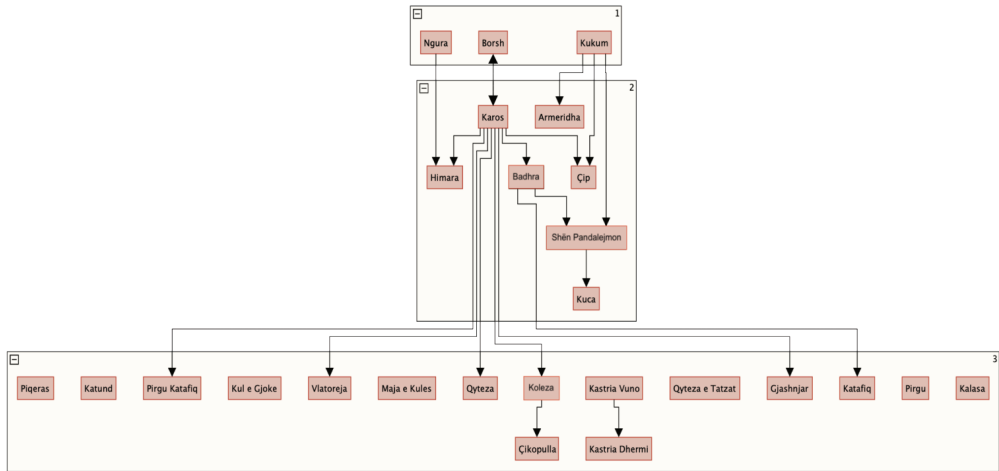


Fig. 3 - Diagram with the dependency relationships for the comparison of masonry techniques between hillforts as presented in bibliography. Hillforts are here divided into three groups according to whether the declared chronological attribution also makes use of excavation data (1), field survey data (2) or is based solely on the comparison or appearance of building techniques (3).

vation, chronology still largely relies on typological comparisons of construction techniques (Tab. 1)<sup>12</sup>. Despite the considerable uncertainty this implies, especially when dealing with dry-stone constructions, a preliminary relative chronological classification for the whole of Albania had already been proposed by N. Ceka in 1983. He identified a “first pre-urban phase,” a “second pre-urban phase,” and a “proto-urban phase,” differentiated by settlement location preferences and the growing social complexity of communities (Ceka 1983a, b). Although this model has been shown to have limited archaeological visibility (Bogdani 2018), the lack of stratigraphic excavations capable of generating substantial new data persists. Nonetheless, the recent proposal by R. Ruka and M. Galaty for an absolute chronology of Albanian prehistory based on radiocarbon analyses marks a significant step forward in this regard (Ruka, Galaty 2022). In the area addressed by this contribution, only

three sites have been investigated through stratigraphic excavation (fig. 3). The first is Kukum, whose evolution has been divided into three phases corresponding to the Early Bronze Age (Kukum I), the Middle to Late Bronze Age (Kukum II), and the Late Bronze Age (Kukum III). As a result, it is considered one of the main reference sites for comparisons of construction techniques and material culture (Koçi 1991: 44-49; Prendi 1993: 18-24; Giorgi, Bogdani 2012: 242-243). Similar research allowed to identify two phases at Ngura (Koçi 1991: 49-52; Giorgi, Bogdani 2012: 243), corresponding to the transition between the Middle and Late Bronze Age (Ngura I) and the Late Bronze Age (Ngura II). The remaining fortified sites are dated in part through surface finds collected during targeted surveys, and again, through comparisons of masonry techniques. One example includes Çip (also compared with Karos: Koçi 1991: 53-54; Giorgi, Bogdani 2012:

12 An example of the varying datings to which dry stone wall forts can be subject, particularly in southern Albania, is presented in Carbotti *et al.* 2024: 22-23, with the cases of Qyteza e Dishatit and Duka.

244-245), Armeridha (Koçi 1991: 53; Gjipali 2009: 208; Giorgi, Bogdani 2012: 244), and Shën Pandalejmon (Çipa *et al.* 2022: 43-44), directly compared with Kukum. Another example is Karos (Koçi 1976; Ceka 1985: 30-31; Koçi 1991: 38-40; Prendi 1993: 18-24; Cabanes *et al.* 2008: 49-50; Giorgi, Bogdani 2012: 241-242), considered as one of the most significant sites in the area. Analysis of the standing structures and fortification layout, along with the few recovered artifacts, has enabled the identification of two phases (Karos I, Late Bronze Age; Karos II, Early Iron Age). Karos is frequently used for architectural comparisons, especially for sites where no activity beyond inspections and surface survey to verify the presence and preservation of walls has taken place. Some examples can be found at Vlatoreja (Koçi 1991: 54; Giorgi, Bogdani 2012: 245), PIRGU KATAFIQ (Budina 1971: 282-284; Koçi 1991: 54; Giorgi, Bogdani 2012: 240), QYTEZA (Koçi 1991: 53; Giorgi, Bogdani 2012: 244; Çipa, Meshini 2016: 64), GJASHNJAR (Ceka 1985: 30-31; Koçi 1991: 58; Giorgi, Bogdani 2012: 273-274; Çipa, Meshini 2016: 65-66; Gjipali 2018: 36-37), KOLEZA (Koçi 1991: 52; Giorgi, Bogdani 2012: 243-244; Çipa 2016: 86), all of which represent somewhat problematic contexts in terms of determining their chronology. Two exceptions can be found in the case of Himara, where materials dating to the Late Bronze Age have been collected and compared with the ones found in Ngura (Koçi 1991: 52-53) and Borsh, which has been compared with Karos I but has also been excavated in the past, confirming the existence of a Late Bronze Age occupation (Koçi 1991: 56-57; Çipa 2018: 100). Karos is also used as a comparative model for the construction techniques of the walls at Badhra, another fortified site dated to the Late Bronze Age. Already surveyed in previous research, Badhra is significant for the study of the region's prehistory due to the good preservation of its fortification walls and the possible presence of

domestic structures (Hammond 1967: 122; Korkuti 1982: 236-237; Ceka 1985: 30-31; Baçe, Bushati 1989: 6-13; Koçi 1991: 57; Prendi 1993: 18-23; Cabanes *et al.* 2008: 41; Giorgi, Bogdani 2012: 229).

#### FIELDWALKING AND TOPOGRAPHIC SURVEYS BETWEEN THE KUDHËS-QEPARO AND BORSH RIVERS

The progressive analysis of these sites has highlighted a series of persistent knowledge gaps, not only in terms of function and chronology, as already discussed, but also regarding the internal and external spatial organization of the fortifications and the nature of the associated material culture. Furthermore, much of the available documentation is now outdated, having been produced primarily in the 1970s and 1980s, and thus open to significant updates thanks to more modern tools and techniques. The need to overcome these limitations and to better understand both the features of the sites and the broader settlement dynamics in which they are embedded led to a new series of field survey and remote sensing campaigns at several sites in southern Albania as part of the FortNet Project (Giorgi *et al.* 2025). These include the fortifications of Karos, Kukum, Ngura, and Badhra. These sites were selected because they represent useful case studies to assess how integrating legacy data, which are more abundant here than in other nearby contexts, with newly collected data can support a comprehensive analysis. Consequently, the primary objectives of the initial fieldwork were to document the fortification circuits in order to evaluate their extent and preservation where still visible and to collect surface finds, both from the exact location of the sites and, where possible, from their immediate surroundings. At the same time, the sites were documented using drone-based photogrammetry and RTK-mode GNSS positioning, with the

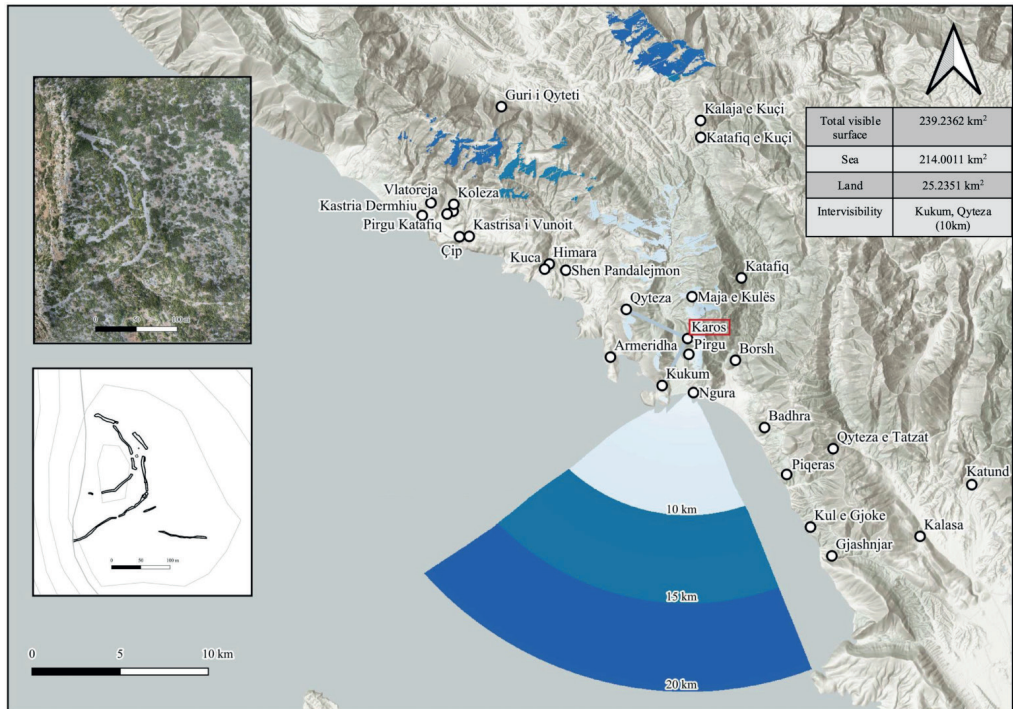


Fig. 4 – Karos. Viewshed analysis with lines highlighting intervisibility (right), orthophoto (up left), plan (bottom left).

aim of producing orthophoto mosaics that could be compared with satellite imagery, historical photographs, and maps available online primarily via the website of the Albanian State Authority for Geospatial Information (ASIG). Adjustments to survey and topographic recording methods were necessary based on the specific characteristics of each site, taking into account geomorphology, site accessibility and surface walkability (often seasonally variable), and actual ground visibility of archaeological remains<sup>13</sup>. Although the four sites are distributed within a total area of just 10 km<sup>2</sup>, they display a number of differences, primarily related to topography and access. These differences became apparent during the first two field campaigns conducted in autumn

2023 and 2024. The outputs of the work include, first and foremost, updated site plans where possible, as well as calculations of mean, absolute, and relative elevations, slope, and exposure. Preliminary viewshed analyses were also carried out to assess whether it was possible to refine current understanding of visibility and intervisibility between sites, beyond the observations made during field visits. Since the actual height of the fortification walls could not yet be determined, it was estimated as being 5 m on the basis of general studies (Winter 1971: 134-136) and specific case studies used for comparison (Mihovilić 2013: 870-817; Recchia, Cazzella 2019: 86). For these preliminary viewshed analysis, elevation data were taken from the Copernicus DEM; specific sets of

13 For a detailed discussion on the methodology employed for the individual activities at Karos, Badhra, and Kukum, summarized below, see Carbotti *in press*.

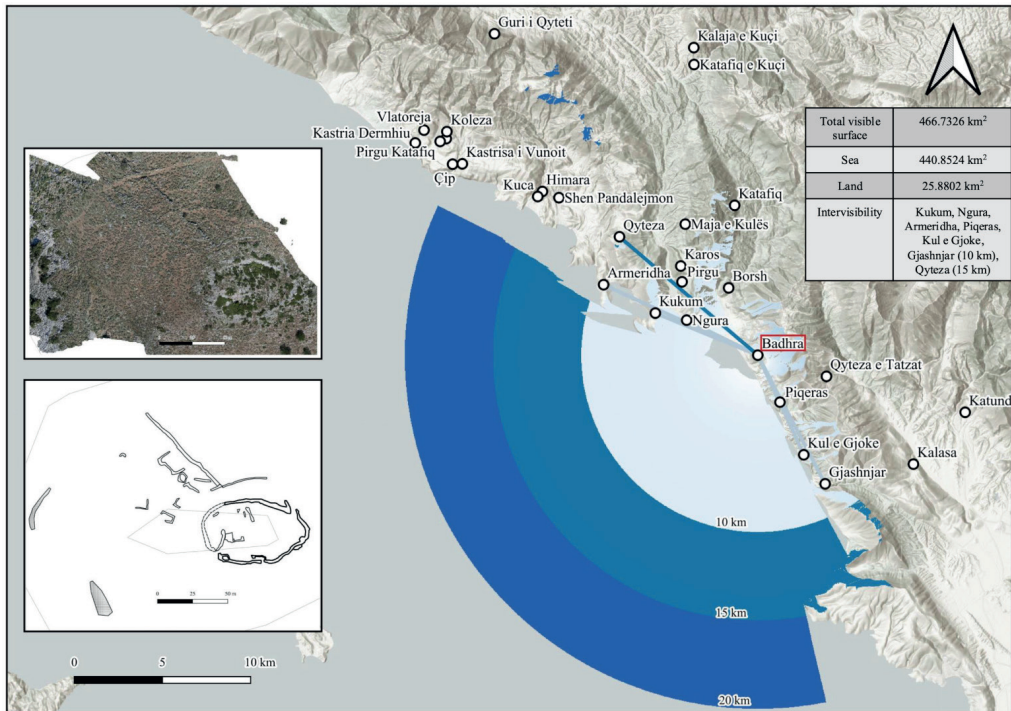


Fig. 5 – Badhra. Viewshed analysis (right), orthophoto (up left), plan (bottom left).

coordinates corresponding with a chosen point on the highest area of each hillfort were selected as observer points, while the offset for target elevation above ground was set at 5 m as well. A visibility radius of 10, 15, and 20 km were considered for each of the four sites here considered.

Karos, located at 478 m a.s.l. on the summit of Mali i Karosit, is a particularly emblematic example of the difficulties and limitations faced by research in similar mountainous contexts (fig. 4). Although the site sits above the average elevation of others in the region, accessibility to the three concentric fortifications, extending for ca. 2,5 ha, and surface visibility of archaeological material is limited not so much by slope (just under 10%) but by thick shrub vegetation and exposed rock formations. As a result, systematic surface survey proved highly challenging and yielded limited results, including just

four ceramic fragments, only one of which was handmade ware. In this case, remote sensing activities using drones were more productive, allowing the full extent of the fortification circuit to be mapped, which is, in fact, the best-preserved among the sites here discussed.

A bit further downslope, at 318 and 163 m a.s.l. respectively, the sites of Badhra (0,28 ha ca.; fig. 5) and Kukum (0,27 ha ca.; fig. 6) are located on either end of the bay defined by the mouths of the Kudhës-Qeparo and Borsh streams. These sites were relatively easy to access and had better ground visibility, allowing both the interior and exterior of the subcircular fortifications to be surveyed through transects. Previous research at both sites mentions the presence of structures interpreted as dwellings located outside the defensive walls, though these could not be identified during the recent field visit.

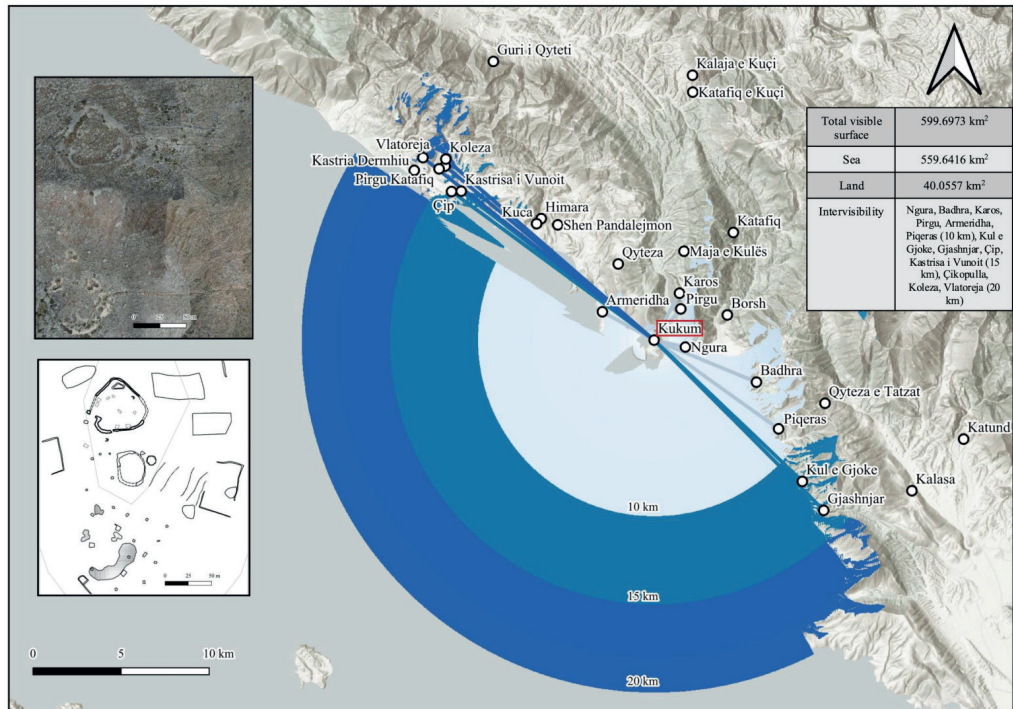


Fig. 6 – Kukum. Viewshed analysis (right), orthophoto (up left), plan (bottom left).

Only in the case of Badhra did post-survey analysis of the drone-derived orthophoto mosaic allow the identification of some possible building remains. The large quantity of surface material recovered especially at Kukum points to a longer occupation than previously recognized, likely spanning from the Late Bronze Age at least through to the early centuries CE, however the state of conservation of the fortification is really poor and most likely altered by the later construction on the nearby bunker and by the visible land divisions.

Finally, at just 42 m a.s.l., on the last coastal foothills southeast of the modern settlement of Qeparo Fushë, Ngura represents a critical case: a fortified site whose preservation, already described as precarious, has most likely been definitively compromised by contemporary urban expansion (fig. 7). Field inspections and analyses of both drone imagery and

satellite images have not enabled the precise identification of the site, nor the recognition of the linear fortification that once enclosed the hill to the south. As a result, its layout and associated material culture must now be reconstructed solely on the basis of legacy data.

## UPLANDS AND COASTSCAPES OF SOUTHERN ALBANIA

Over twenty fortified sites are distributed along the 35 km of coastal strip between the modern settlements of Dhërmi and Lukova. This concentration clearly represents a distinctive feature of the region, as such a density stands out against the regional average, which is generally sparse in monumental evidence for these historical phases. Although the chronology of part of these sites remains uncertain, and there is a concrete possibility that the current attribution to the Middle to Late

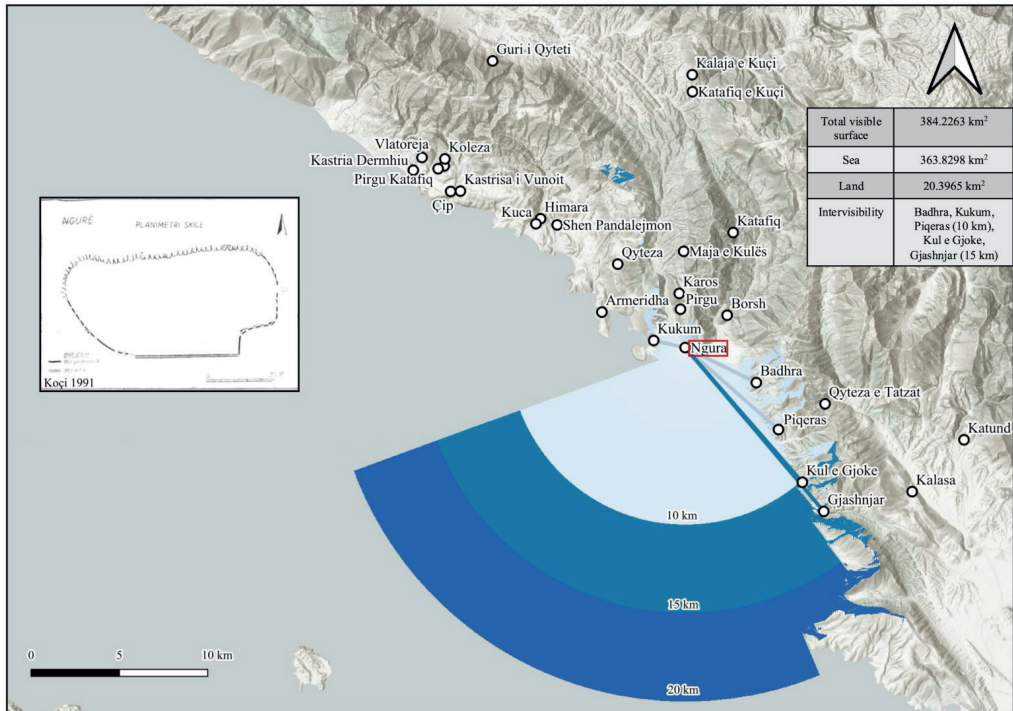


Fig. 7 – Ngura. Viewshed analysis (right) and plan drawing by Koçi 1991 (left).

Bronze Age for some of them may be inaccurate, previous excavation and survey campaigns at other sites in the area provide more reliable data. In the meantime, topographic considerations can at least partially compensate for the chronological gaps, pending further research. One particularly evident aspect when observing the distribution of these sites along the coast is their close physical proximity and an apparent arrangement in clusters. Even though this does not necessarily imply contemporaneity for all hillforts, it suggests at least the continuity or recurrence of settlement choices linked to the exploitation of locations that are strategic from a geomorphological and functional point of view over time, being the sites along key communication routes or strategic areas for accessing the hinterland, its resources, and its communication routes. In the specific case of the four sites analysed in this paper, the combination of

their close proximity to the coast and the presence of high mountain chains results in visibility being primarily oriented and extended toward the Ionian Sea, while visibility towards the inland is limited by the surrounding reliefs. These sites occupy strategically dominant positions along the coastal landscape, and the comparison of their visibility fields suggests functional and hierarchical differences within the group. In a possible classification, the most strategic role appears to be played by Kukum, the only site in visual connection with all the other three, a result that challenges the traditional interpretation of this site as a “basic” dwelling. It also presents the widest visual range, encompassing both the coastal stretch that includes almost all the fortifications north of Porto Palermo and the southernmost section along the last ridges of the Acrocerauni-an Mountains, which provide access to the Bistrice valley and the Saranda area.

At the opposite end of this classification stands the site of Karos, whose isolated yet dominant position supports the hypothesis that it primarily served to control the natural communication corridors, particularly the valley of the Kudhës-Qeparo stream. However, its intervisibility with Kukum suggests a complementary role, in which the two sites may have formed coordinated nodes for monitoring the valley floor and internal routes. Between these two extremes lie Ngura and Badhra, which are mutually intervisible and visible from Kukum as well. These sites similarly supervise over wide stretches of the coastline and the valleys formed by the Kudhës-Qeparo and Borsh streams, although they appear overall more oriented toward the southern sector of the Porto Palermo Bay. While Badhra's controlling role had already been highlighted in the past, as mentioned above, this would be a new feature in Ngura's interpretation. Placing these elements within a broader regional, if not fully Mediterranean, at least Ionian-Adriatic framework may help to shed further light on the function and networking of these sites.

Roughly 150 km further south, at the so-called Glykys Limen near the mouth of the Acheron River in present-day Greek Epirus, stands the fortified site of Ephyra. Characterized by three concentric fortification walls surrounding the lower part of the hill where two of which are dated to the Late Bronze Age, it is well known for its Mycenaean occupation during this period. Excavations and especially the studies by T. Tartaron have demonstrated that Ephyra functioned as a meeting and exchange hub between Mycenaean traders and local populations, made more easily accessible by the wider bay that characterised the Acheron river mouth in ancient times (Dakaris 1972: 28-29, 62-63; Dakaris 1973; Hammond 1967: 64-65, 302, 313, 478, 482; Tartaron 2004: 39-44; Papadopoulou, Papadopoulou 2020; Kleitsas, Drosou 2023). The site's topo-

graphical position clearly reveals its role as a connection point between coast and hinterland: it offers wide visibility over the Ionian Sea, the southern edge of the Corfu Channel and the island itself, much of the course of the Acheron River, as well as the contemporary fortified sites of Ayia Eleni (Tartaron 2004: 37-38) and Cheimerio (Tartaron 2004: 38-39), which controlled the river mouth near the coast. Further inland, the site of Kastiza also falls within this network (Dakaris 1972: 100; Tartaron 2004: 44-48). The area as a whole has been described as a coastscape, being a territory shaped by settlement patterns, interactions, practices, and perceptions primarily linked to the coastal environment, yet extending inland through communication routes, natural corridors such as rivers and mountain passes, and hydrological basins used for both economic and social purposes. This concept also includes the so-called visual seascape, which defines the cognitive landscape that links land and sea. It is a mobile landscape, shaped by coastal communities and by how these communities exploited both the sea and the mainland (Tartaron 2013: 188-203). According to Tartaron's estimates, a Bronze Age vessel could travel 100-150 km per day, depending on weather and current conditions. Therefore, from Glykys Limen, Mycenaean ships could have reached the northern coast of Corfu or Ithaca in a single day (Tartaron 2017: 11-12). The mouth of the Kalamas River (Tartaron 2017: 5), the Butrint lagoon, the Bay of Saranda, and the estuaries of the Kudhës-Qeparo and Borsh rivers would all have served as useful intermediate landing points. However, in this area, only a possible Mycenaean sherd from the Himara cave (Gjipali 2007: 114-117) and a painted lekythos from the Bajkaj tumulus, also considered of Mycenaean origin by L. Bejko (Bejko 1993: 108, 114; Bejko 1994: 118), have been documented to date. Nonetheless, it is also evident that the fortified sites in

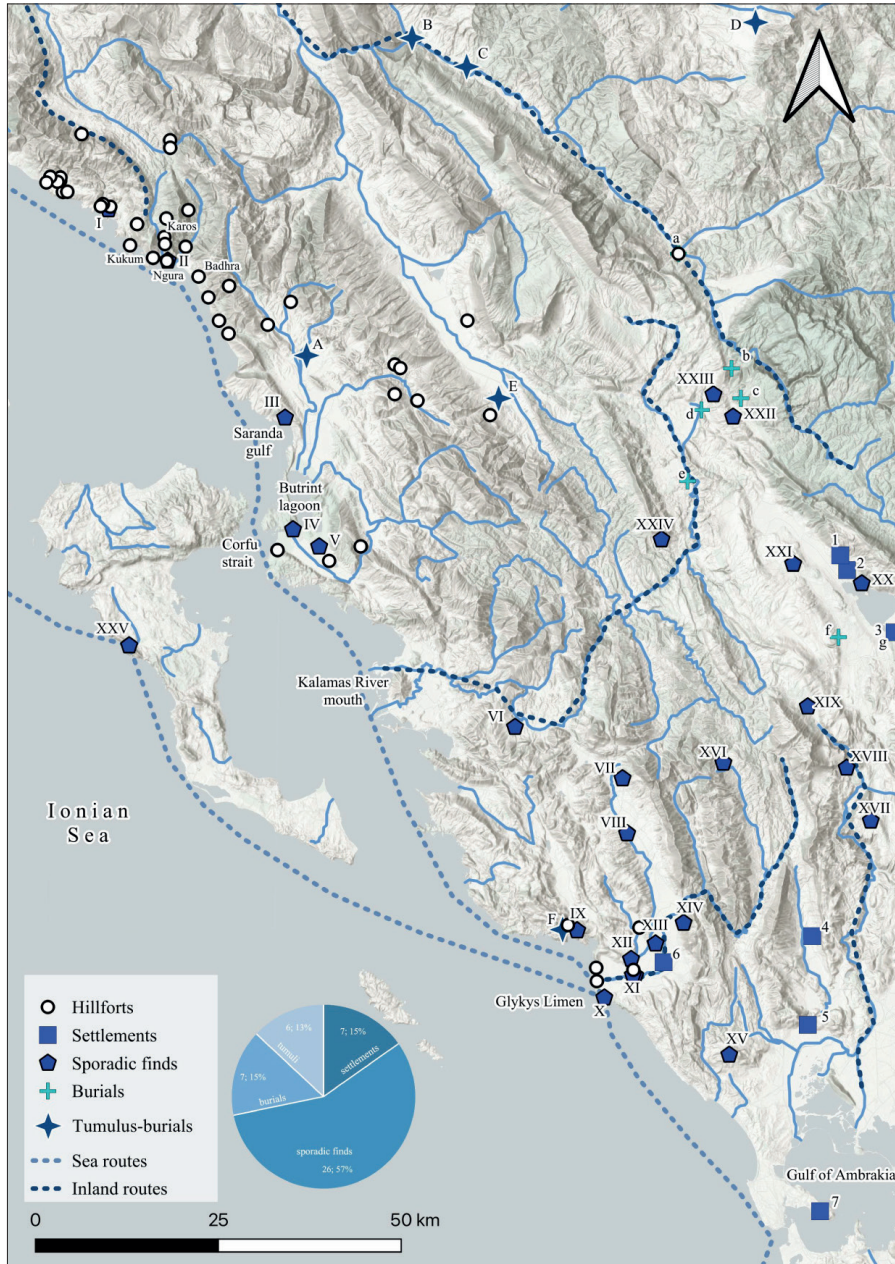


Fig. 8 - LBA hillforts alongside Mycenaean and Aegean-type findings in southern Albania and Epirus. If the name is in *italic*, only Aegean-type materials were found. Settlements: 1) Krya; 2) Perama; 3) Kastritsa; 4) Galatas; 5) *Stephani*; 6) Kastri; 7) Skaphidaki. Sporadic finds: I) Himara; II) *Qeparo*; III) *Saranda*; IV) *Butrinto*; V) *Xara*; VI) Riziani; VII) Paramythia; VIII) Mavromandilia; IX) Aghia Kyriaki; X) Koumasaki; XI) Nekomanteion; XII) Dikorpho; XIII) Koronopoulos; XIV) Vouvopotamos; XV) Kassope; XVI) Katamaki; XVII) *Terovo*; XVIII) Kopani; XIX) Dodona; XX) *Amfithëa*; XXI) *Megalò Gardiki*; XXII) *Kato Pedina*; XXIII) Kalyvia; XXIV) *Despotikon*; XXV) Hermones. Burials: a) Mesogephyra; b) Aristi; c) Elaphotopos; d) Kalpaki; e) Mazarachi; f) Neochoropulo; g) Kastrisa; Tumuli: A) Bajkaj; B) Kelcyrë; C) Piskovë; D) Rehovë; E) Vodhinë; F) Kiperi. Sea routes and inland routes were revised from Tsonos 2000: 235-238; Sueref 2001: 201, 202.

this region lie at the northern end of that maritime route that began in the Peloponnese, crossed the Gulf of Patras, passed through Cephalonia, Ithaca, and Lefkada, then moved into the Gulf of Ambracia (from which inland routes likely departed), eventually reaching Glykys Limen, the Albanian coasts, and finally crossing the Strait of Otranto (Tartaron 2004: 145-177; Galaty, Lafe 2008: 265-266; Cazzella 2009: 164; Milan Quiñones de León 2020: 603-605) (fig. 8).

The occupation of the Albanian coast appears to be a direct consequence of the relationships established between Mycenaean seafarers and the Greek shores of Epirus, the Ionian Islands, and Aetolo-Acarmania. In these areas, however, unlike what is attested in Apulia, contacts seem to be more widespread and mediated. While they do highlight the involvement of local communities in such exchanges, these interactions appear to vary according to temporary needs and circumstances (Onnis 2008a: 268; Onnis 2008b: 26-32). Initially, such contacts seem limited to a few sporadic cases in northern Albania, with cultural influence not extending beyond the Gulf of Ambrakia (Tsonos 2000: 183-187; Tsonos 2016: 261-262). From MH II-III onward, however, evidence emerges for both overland and maritime exchange. The former is directly attested by material culture, particularly daggers, which shows that movement occurred from the valleys of the Louros, Arachthos, and Acheloos rivers northward through the valleys of the Aaos and Devoll rivers (Onnis 2008a: 249; Onnis 2008b: 14-16; Tsonos 2016: 263). Maritime exchanges, by contrast, are indirectly attested by the presence of Aegean weapons in the tumuli of Vajze, indicating that the Bay of Vlora acted as a key hub for such exchanges (Onnis 2008a: 251; Onnis 2008b: 16; Iacono 2014: 71; Tsonos 2016: 264). The foundation of Ephyra during LH IIIA underscores the emergence of Epirus as a major intermediary in these exchanges from this period

onward, as shown by the progressive spread of Mycenaean and Aegean-type pottery, as well as locally produced ceramics inspired by them, along the Epirote coasts, in the interior regions such as Dodona and the Konitsa plain, and in southern Albania (Tsonos 2000: 194; Onnis 2008a: 258-265; Onnis 2008b: 17-19; Bejko 2009; Iacono 2014: 74; Tsonos 2016: 265). Nevertheless, the Albanian territory continued to be accessed via the port of Vlora, facilitating the crossing to the Apulian shores, and via internal routes following river valleys, which enabled the trade of minerals, especially copper with deposits in the Korçë region and the valley of the Mat River, precious metals such as gold, with probable deposits in the Devoll and Mat river valleys, and bitumen deposits near Vlora, all of which had attracted Mycenaean merchants to the Adriatic Sea (Oikonomidis 2012). These river valleys were likely also the main conduits for the introduction of Aegean materials and influences into Albania and for the dissemination of their locally reinterpreted shapes (Iacono 2014: 75; Tsonos 2016: 266-267).

## CONCLUSION

The diffusion of Mycenaean pottery and Aegean weapons in dwelling and funerary contexts, both near the coast and inland along natural routes following waterways, indicates that the Albanian and Epirote coasts played an intermediary role in these exchanges. These exchanges involved luxury goods such as weapons and jewellery on the one hand, and metals, gold, and bitumen originating from central and eastern Albania on the other. Extensive excavations and surveys have already demonstrated the existence of such a background for numerous sites at the mouth of the Acheron River, among which Ephyra stands out as particularly significant. Here, local populations had the opportunity to interact with and exchange goods and raw materials with

Mycenaean groups, using Ephyra as their main centre and numerous surrounding satellite sites as gateways to the hinterland. Similar considerations, although more hypothetical given the absence of direct finds of Mycenaean or Aegean materials at these sites, have been proposed for the hillforts near the Butrint lagoon, where the Late Bronze Age fortifications of Vagalat, Kepi i Stilit, and Mursi are thought to have played a similar role (Lima 2013: 42-43; Hernandez 2020: 238-241; Carbotti *et al.* 2024: 43-46). It thus seems plausible that the fortified sites located along the coast between the modern centres of Dhërmi and Lukova may also have fulfilled a comparable function, given their location along the route leading directly to the port of Vlora. While the chances that Karos played an active role in these exchanges appears less likely, for Badhra, Ngura, and especially Kukum this seems much more probable, although the possibility that these were simultaneously fortified settlements also used for

pastoral activities cannot still be ruled out. Even though interpreting the role of each hillfort would need more on-site analysis for a definite answer, it appears evident that all these are nodes in a settlement, communication and surveillance network that implicates the existence of a hierarchical model among them, in which Kukum may have played a leading role. These sites are located at the terminus of natural routes connecting pastures to the sea, in an area rich in caves, natural shelters, and water sources, which has been extensively documented as a landing place during antiquity (Leone, Turchiano 2017: 219-237). Given these premises and the peculiar topography, it is conceivable that the establishment and development of these sites so close to the coastline resulted not only from the socioeconomic needs of local communities, but to some extent also from necessities connected to maintaining contacts and exchanges with Mycenaean networks directed toward Vlora and the Apulian coast.

## BIBLIOGRAPHY

- AGOLLI E. 2017 - The Late Prehistory in Albania: a Review of Theory, Strategies of Research, and Valorization of Archaeological Heritage, in *Proceedings from the 5th Scientific Conference Methodology and Archaeometry*, Miloglav I. ed, Zagreb 2017: 25-41.
- ARIZTEGUI D., ANSELMETTI F. S., ROBBIAN J.-M., BERNASCONI S. M., BRATTI E., GILLI A., LEHMAN M. F. 2010 - Natural and human-induced environmental change in southern Albania for the last 300 years. Constraints from the Lake Butrint sedimentary record, *Global and Planetary Change* 71: 183-192.
- BAÇE A., BUSHATI V. 1989 - Vështrim mbi banesën prehistorike dhe qytetare në Iliri dhe Epir, *Monumentet* 1: 5-48.
- BEJKO L. 1993 - Mbi praninë e qeramikës mikene në Shqipërinë Jugore dhe probleme lidhur me të, *Iliria* 23: 101-122.
- 1994 - Some problems of the Middle and Late Bronze Age in southern Albania, *Bulletin of the Institute of Archaeology, University of London* 31: 105-126.
- 2009 - Life and death in the periphery of the Mycenaean world: cultural process in the Albanian late Bronze age, *Ocnus* 17: 11-22.
- 2016 - Social Landscape and Tumuli Burials in Late Bronze and Early Iron Age Southeastern Albania, in *Tumulus as Sema. Space, Politics, Culture and Religion in the First Millennium BC*, Henry O., Kelp K. eds, De Gruyter, Berlin, Boston: 75-88.

- BOGDANI J. 2018 - Caonia in Epiro. Il passaggio dalla comunità tribale alla *koiné* mediterranea in età ellenistica, in *L'Illyrie méridionale et l'Épire dans l'Antiquité VI*, Lambolley J.-L., Përzhita L., Skenderaj A. eds., Actes du VI<sup>e</sup> colloque international, Tirana 2015: 965-976.
- 2024 - Documenting a hilltop settlement: methodologies and preliminary results of the joint Albano-Italian project at Çuka e Ajoit (Albania), *Groma* 8: 18-36.
- BUDINA D. 1971 - Harta arkeologjike e Bregdetit Jon dhe e pellgut të Delvinës, *Iliria* 1: 275-342.
- CABANES P., KORKUTI M., BAÇE A., CEKA N. 2008 - *Harta arkeologjike e Shqipërisë*, Klosi & Benzenberg, Tiranë.
- CARBOTTI F. *in press* - Insights on field surveys in coastal fortified hilltop sites of southern Albania, *Groma* 10.
- CARBOTTI F., D'AMBOLA F., RIVOLI M., SIGISMONDO G. 2024 - *Paesaggi d'Epiro. Archeologia dei paesaggi in Albania meridionale*, Bologna University Press, Bologna.
- CARBOTTI F., CASTIGNANI V., D'AMBOLA F., RIVOLI M., SIGISMONDO G. 2025 - Siti d'altura ed edifici rurali fortificati in Caonia (Epiro): considerazioni sul popolamento antico alla luce delle nuove ricerche, in *Landscape 4: una sintesi di elementi diacronici. Pianificazione e mondo antico: tra i dogmi del passato e le interpretazioni recenti*, D'Alessio G., De Nisi S., Felici C., Gangle Risoleo D., Pesce S., Raimondo I. eds., Archaeopress, Oxford: 79-92.
- CAZZELLA A. 2009 - Exchange systems and social interaction during the Late Bronze Age in the Southern Adriatic, in *Dall'Egeo all'Adriatico: Organizzazioni sociali, modi di scambio e interazione in età postpalaziale (XII-XI sec. a.C.)*, Borgna E., Cássola Guida P. eds., Atti del Seminario internazionale, Udine 2006: 159-169.
- CEKA N. 1983a - Lindja e jetës qytetare tek Ilirët e jugut, *Iliria* 13.2: 135-192.
- 1983b - Processi di trasformazioni nell'Iliria del Sud durante il periodo arcaico, in *Modes de contacts et processus de transformation dans les sociétés anciennes*, Actes du colloque, Cortone 1981: 203-218.
- 1985 - Fortifikimet parahistorike ilire, *Monumentet* 29.1: 27-58.
- CHABROL A., APOSTOLOPOULOS G., PAVLOPOULOS K., FOUACHE E., LE CŒUR C. 2012 - The Holocene evolution of the Kalamas delta (northwestern Greece) derived from geophysical and sedimentological survey, *Géomorphologie: relief, processus, environnement* 18.1: 45-58.
- CHABROL A., GONNET A., FOUACHE E., PAVLOPOULOS K., LE CŒUR C. 2022 - Geomorphology of the Kalamas river delta (Epirus, Greece), *Journal of Maps* 18.2: 276-287.
- CHOINAS N., GIOUNI P., BASILEIOU E. 2022 - Δύο τάφοι του τέλους της Εποχής του Χαλκού στο Σκαμνέλι Ζαγορίου, in *To αρχαιολογικό έργο στη βορειοδυτική Ελλάδα και τα νησιά του Ιονίου*, Kotsou E. eds., Πανεπιστήμιο Ιωαννίνων, Εφορείες Αρχαιοτήτων και Υπηρεσίες Νεωτέρων Μνημείων ΒΑ Ελλάδας & Νησιών Ιονίου, Athens: 155-160.
- ÇIPA K. 2016 - Vëzhgime të reja arkeologjike në bregdetin e Jonit, *Candavia* 6: 81-102.
- 2018 - The Antic City of Borsh, *European Journal of Multidisciplinary Studies* 3.4: 99-103.
- ÇIPA K., MESHINI M. 2016 - Të dhëna të reja rreth fortifikimeve paraurbane në Shqipërinë jugperëndimore, *Iliria* 40: 59-95.
- ÇIPA K., MESHINI M., TOTA U. 2022 - Raporti I Gërmimit Arkeologjik Të Shpëtimt Në Varrezën Tumulare Të Himarës Dhe Vëzhgimit Sipërfaqësor Në Territorin Përreth, Viti 2020, *Candavia* 9: 33-49.
- 2024 - New Evidence from the Late Prehistoric Tumuli of Himara, Southwestern Albania, in *The Mechanism of Power. The Bronze and Iron Ages in Southeastern Europe*, Gavranović M., Heilmann D., Verčik M., Ardjanliev P. eds., Leidorf, Rahden.: 177-194.
- ČUČOVIĆ Z. 2017 - Claiming the sea: Bronze Age fortified sites of the north-eastern Adriatic Sea (Cres and Lošinj islands, Croatia), *World Archaeology* 49.4: 526-546.
- DAKARIS S. 1972 - *Θεσπρωτία*, Athen Center of Ekistics, Athens.
- 1973 - The genesis of the first walled cities in Epirus, *Ekistics* 35.206: 24-30.
- FRANCIS K. 2005 - *Explorations in Albania, 1930-39. The notebooks of Luigi Cardini, prehistorian with the Italian Archaeological Mission*, British School at Athens, London.
- FRANCIS K., BESCOBY D. J., GJIPALI I. 2009 - A Preliminary Investigation of Two Prehistoric Cave Sites in Southern Albania, *The Annual of the British School at Athens* 104: 9-26.

- GALATY M. L. 2007 - 'There are Prehistoric cities up there': the Bronze and Iron Age in Northern Albania, in *Between the Aegean and the Baltic seas. Prehistory across borders*, Galanaki I., Tomas H., Galanakis Y., Laffineur R. eds., Proceedings of the International Conference Bronze and Early Iron Age Interconnections and Contemporary Developments between the Aegean and the Regions of the Balkan Peninsula, Central and Northern Europe, Zagreb 2005: 133-140.
- GALATY M. L., LAFE O. 2008 - Le peuplement préhistorique du littoral albanais, *Études Balkaniques - Cahiers Pierre Belon* 15.1: 257-272.
- GEROGIANNIS G. M. 2021 - *L'Epiro dei Mollsi. Difesa e gestione del territorio*, Edizioni Quasar, Roma.
- GIORGI E. 2022 - Another Greece. The population of northern Epirus and the genesis of Butrint in the Archaic period, in *Schemata. La città oltre la forma. Per una nuova definizione dei paesaggi urbani e delle loro funzioni: urbanizzazione e società nel Mediterraneo pre-classico. Età arcaica*, Brancato R., Calìo L., Figuera M., Gerogiannis G. M., Pappalardo E., Todaro S. eds., Edizioni Quasar, Roma: 477-502.
- GIORGI E., BOGDANI J. 2012 - *Il territorio di Phoinike in Caonia. Archeologia del paesaggio in Albania meridionale*, AnteQuem, Bologna.
- GIORGI E., BOGDANI J., CARBOTTI F., SIGISMONDO G., ALEOTTI N. 2025 - FortNet Project: a longue durée approach to the study of settlement, economic and defensive systems in coastal Chaonia (Albania), *Groma* 9: 151-159.
- GJIPALI I. 2007 - Kërkime prehistorike në Shqipërinë Jugperëndimore, *Iliria* 33: 107-133.
- 2009 - Vendbanime të reja në Pellgun e Delvinës dhe në Bregdetin Jon, *Iliria* 34: 201-221.
- 2018 - Bronze and Iron Age settlements in south-western Albania, in *L'Illyrie méridionale et l'Épire dans l'Antiquité VI*, Lamboley J.-L., Përzhitë L., Skenderaj A. eds., Actes du VIe colloque international, Tirana 2015: 29-40.
- HAMMOND N. G. L. 1967 - *Epirus. The geography, the ancient remains, the history and the topography of Epirus and the adjacent areas*, Clarendon Press, Oxford.
- HARDING A. F. 1984 - *The Mycenaeans and Europe*, Academic Press, London.
- HERNANDEZ D. 2020 - The Late Bronze Age and Hellenistic Fortified Site at Mursi, Albania, in *Butrint 7: Beyond Butrint. Kalivo, Mursi, Çuka e Aitoit, Diaporit and the Vrina Plain. Surveys and Excavations in the Pavllas River Valley, Albania, 1928-2015*, Hernandez D., Hodges R. eds., Oxbow Books, Oxford: 208-244.
- HODGES R. 2006 - *Eternal Butrint. A UNESCO World Heritage site in Albania*, Butrint Foundation, London.
- IACONO F. 2014 - Networks e società nell'Albania dell'età del Bronzo, in *Ricerche archeologiche in Albania*, Tagliamonte G. eds., Atti dell'incontro di studi, Cavallino-Lecce 2011: 67-79.
- IACONO F., BORGNA E., CATTANI M., CAVAZZUTI C., DAWSON H., GALANAKIS Y., GORI M., IAIA C., IALONGO N., LACHENAL T., LORRIO A., MICÓ R., MOLLOY B., NAFPLIOTI A., PECHÉQUILICHINI K., RIHUETE HERRADA C., RISCH R. 2022 - Establishing the Middle Sea: The Late Bronze Age of Mediterranean Europe (1700-900 BC), *Journal of Archaeological Research* 30: 371-445.
- KLEITSAS CH., DROSOU I. 2023, - "Εφύρος Ἡρώς Νέος μυκηναϊκός τάφος εκτός των τειχών της Εφύρας, Ἡπειρος, *Athens University Review of Archaeology* 6: 117-146.
- KOÇI J. 1976 - Kalaja e Karosit, *Iliria* 6: 235-243.
- 1991 - Fortifikimet parahistorike në bregdetin kaon, *Iliria* 21: 39-64.
- KORKUTI M. 1982 - Die Siedlungen der Späten Bronze - und der Frühen Eisenzeit in Südwest-Albanien, in *Südosteuropa zwischen 1600 und 1000 vor Chr.*, Geißlinger H. ed., Moreland, Berlin: 235-247.
- 1990 - Një kushtim i epokës së bronzit në Çukë (Sarandë), *Iliria* 20.1: 75-83.
- KRAPF T. 2024 - Settlement Patterns in Albania at the Turn from the Bronze to the Iron Age, in *The Mechanism of Power; Bronze and Iron Ages in Southeastern Europe*, Gavranović M., Heilmann D., Verčík M., Ardjanliev P. eds., Leidolf, Rahden: 255-262.
- LAFE O., GALATY M. L. 2009 - Albanian coastal settlement from Prehistory to the Iron Age, in *A connecting sea: maritime interaction in Adriatic Prehistory*, Forenbaheer S. ed., BAR International Series, Oxford: 105-112.
- LANE A. 2004 - The environs of Butrint 1: the 1995-96 environmental survey, in *Byz-*

- antine Butrint: Excavations and Surveys 1994-99*, Hodges R., Bowden W., Lako K. eds., Oxbow Books, Oxford: 27-46.
- LEONE D., TURCHIANO M. 2017 - *Liburna I. Archeologia subacquea in Albania. Porti, approdi e rotte marittime*, Edipuglia, Bari.
- LERA P., OIKONOMIDIS S., PAPAYIANNIS A., TSONOS A. 2009 - Settlement Organisation and Social Context in the SW Balkan Peninsula (Epirotic and Albanian Coasts) and Northern Italy during the Transitional Period between the Late Bronze Age and the Early Iron Age (c. 13th-9th B.C.), in *Dall'Egeo all'Adriatico: organizzazioni sociali, modi di scambio e interazione in età postpalaziale (XII-XI sec. a.C.)*, Borgna E., Càssola Guida P. eds., Atti del Seminario Internazionale, Udine 2006: 325-343.
- 2017 - The Ancestral Message Of The Dead: Tumuli, Settlements, Landscape And The Utility Of Memory In The Prehistory Of Albania And Western Greece, in *HESPEROS. The Aegean Seen from the West*, Fotiadis M., Laffineur R., Lolos Y., Vlachopoulos A. eds., Proceedings of the 16th international Aegean conference, Ioannina 2016: 223-233.
- LIMA S. 2013 - Butrint and the Pavllas River Valley in the late Bronze Age and early Iron Age, in *Butrint 4: The archaeology and histories of an Ionian town*, Hansen I. L., Hodges R., Leppard S. eds., Oxbow Books, Oxford: 31-46.
- MIHOVILIĆ K. 2013 - Castellieri-Gradine of the Northern Adriatic, in *The Oxford Handbook of the European Bronze Age*, Fokkens H., Harding A. eds., Oxford University Press, Oxford: 864-876.
- MILAN QUIÑONES DE LEÓN S. 2020 - Las posibles vías de penetración micénica en el Epiro, in *Δώρα τὰ οἱ δίδομεν φιλέοντες. Homenaje al profesor Emilio Crespo*, Conti Jiménez L., Fornieles Sánchez R., Jiménez López M. D., Macía Aparicio L., de la Villa Polo J. eds., UAM Ediciones, Madrid: 601-608.
- MORELLÓN M., ANSELMETTI F. S., ARIZTEGUI D., BRUSHULLI B., SINOPOLI G., WAGNER B., SADORI L., GILLI A., PAMBUKU A. 2016 - Human-climate interactions in the central Mediterranean region during the last millennia: The laminated record of Lake Butrint (Albania), *Quaternary Science Review* 136: 134-152.
- MORELLÓN M., SINOPOLI G., IZDEBSKI A., SADORI L., ANSELMETTI F. S., HODGES R., REGATTIERI E., WAGNER B., BRUSHULLI B., ARIZTEGUI D. 2019 - Environment, Climate and Society in Roman and Byzantine Butrint, in *Environment and Society in the Long Late Antiquity*, Izdebski A., Mulryan M. eds., Brill, Leiden-Boston: 185-199.
- OIKONOMIDIS S. 2012 - Mycenaean and the Adriatic: A nautical challenge investigating the beginnings of navigation in the Adriatic Sea, *ENAAIA XI*: 146-151.
- OIKONOMIDIS S., PAPAYIANNIS A., TSONOS A. 2011 - The emergence and the architectural development of the tumulus burial custom in NW Greece (Epirus and the Ionian Islands) and Albania and its connections to settlement organization, in *Ancestral landscapes. Burial mounds in the Copper and Bronze Ages (Central and Eastern Europe, Balkans, Adriatic, Aegean, 4th-2nd millennium B.C.)*, Borgna E., Müller Celka S. eds., Proceedings of the International Conference, Udine 2008: 185-201.
- ONNIS E. 2008a - Traffici micenei nel basso Adriatico e nell'alto Ionio: modalità di scambio a confronto, *Origini XXX*: 247-272.
- 2008b - Modalità di scambio tra il mondo miceneo e i territori dell'Albania e dell'Epiro, *Siris* 9: 11-33.
- PAPADOPOULOS T. J., PAPADOPOULOU E. 2020 - *Ephyra-Epirus: The Mycenaean Acropolis. Results of the Excavations 1975-1986 and 2007-2008*, Archaeopress, Oxford.
- PARANGONI I. 2020 - The Shën Dimitri Survey, 2015: the rediscovery of Zarópulo, in *Butrint 7: Beyond Butrint. Kalivo, Mursi, Çuka e Aitoit, Diaporit and the Vrina Plain. Surveys and Excavations in the Pavllas River Valley, Albania, 1928-2015*, Hernandez D., Hodges R. eds., Oxbow Books, Oxford: 183-191.
- PERISSORIATIS C., CONISPOLIATIS N. 2003 - The impacts of sea-level changes during latest Pleistocene and Holocene times on the morphology of the Ionian and Aegean seas (SE Alpine Europe), *Marine Geology* 196: 145-156.
- PRENDI F. 1977-1978 - Epoka e bronzit në Shqipëri, *Iliria* 7-8: 5-58.
- 1982 - The Prehistory of Albania, in *The Cambridge Ancient History*, vol. III, part. I. *The Prehistory of the Balkans, and the Middle East and the Aegean world, tenth to eight centuries B.C.*,

- Boardman J., Edwards I. E. S., Hammond N. G. L., Sollberger E. eds., Cambridge University Press, Cambridge: 187-236.
- 1993 - La Chaonie préhistorique et ses rapports avec les régions de l'Illyrie du Sud, in *L'Illyrie méridionale et l'Épire dans l'Antiquité, II*, Cabanes P. eds., Actes du IIe colloque international, Clermont Ferrand 1990: 17-28.
- RECCHIA G., CAZZELLA A. 2019 - Coppa Navigata in the Wider Context of Bronze Age Fortified Settlements of South-eastern Italy and the Adriatic Area, in *Bronze Age Fortresses in Europe*, Hansen S., Krause R. eds., Proceedings of the Second International LOEWE Conference, Alba Julia 2017: 81-98.
- RUKA R., GALATY M. 2022 - Time. For an absolute chronology in Albanian prehistory, *Iliria* 45: 27-69.
- SHPUZA S. 2014 - Iron Age fortifications and the origin of the city in the territory of Scodra, *Novensia* 25: 105-126.
- SUHEREF K. 2001 - *Μυκηναϊκές μαρτυρίες από την Ηπειρο*, Εταιρεία Ηπειρωτικών μελετών, Ioannina.
- TARTARON T. 2003 - The archaeological survey: sampling strategies and field methods, in *Landscape archaeology in Southern Epirus, Greece I*, Wiseman J., Zachos K. eds., American School of Classical Studies at Athens, Athens: 23-46.
- 2004 - *Bronze Age Landscape and Society in Southern Epirus, Greece*, BAR Publishing, Oxford.
- 2013 - *Maritime networks in the Mycenaean world*, Cambridge University Press, Cambridge.
- 2017 - Fragments of a Maritime Small World: Glykys Limin and Trans-Ionian Trade in the Mycenaean Period, in *Σπείρα: επιστημονική συνάντηση προς τιμήν της Αγγέλικας Ντούζουγλη και του Κωνσταντίνου Ζάχου*, Mermigka E. ed., Υπουργείο Πολιτισμού - Ταμείο Αρχαιολογικών Πόρων και Απαλλοτριώσεων, Athens: 1-14.
- TNOSOS A. 2000 - Θαλάσσιοι δρόμοι και επικοινωνία στις ακτές της Δυτικής Ελλάδας στην Αλβανία στα Ιόνια Νησιά κατά τη Νεολιθική Εποχή και κατά την Εποχή του Χαλκού, *Ηπειρωτικά Χρονικά* 34: 179-238.
- 2016 - The importance of the Ionian and Albanian coast for maritime communication during the Bronze Age, in *Achaïos: studies presented to Professor Thanasis I. Papadopoulos*, Papadopoulou E., Chrysikopoulos V., Christakopoulou G. eds., Archaeopress, Oxford: 261-274.
- TOUCHAIS G. 2002 - Les rapports entre le monde Mycénien et ses marges nord-ouest (Épire, Albanie, Macédonie), in *L'Albanie dans l'Europe préhistorique*, Touchais G., Renards J. eds., De Boccard, Paris: 199-215.
- WALSH K., MOCCI F. 2011 - Mobility in the Mountains: Late Third and Second Millennium Alpine Societies' Engagements with the High-Altitude Zones in the Southern French Alps, *European Journal of Archaeology* 14: 88-115.
- WINTER F. E. 1971 - *Greek fortifications*, University of Toronto Press, Toronto, Buffalo.
- WISEMAN J., ZACHOS K. L. eds. 2003 - *Landscape archaeology in southern Epirus, Greece I*, vol. 32, ASCSA, Princeton.

