

On the Paths of Prehistory

Tracking mobility and
relationships from Neolithic to
Bronze Age in central Sicily

Dario Calderone



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Cover: Aerial photograph of the Sicani Mountains in the Milena area (author).



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Introduction

This work presents the results of research on the hilly and slightly mountainous area among the Sicani Mountains in the province of Caltanissetta, in the central-southern region of the island of Sicily, that falls within the borders of the municipalities of Milena, Sutera, and Campofranco. The municipality of Milena is mainly an agricultural area with a great deal of natural landscapes that are protected by law, such as the Monte Conca natural reserve as well as tracts of forested land protected by the state government. Because the region was never heavily urbanized, archaeological assets in the area are often found in relatively uncontaminated natural contexts. The study of the geographical locations of archaeological sites and the analysis of prehistoric and historical roads were essential in creating an in-depth map of the territory. This map helped identify where archaeological evidence is located and where the passage of the Francigena path is recorded. The Magna Via Francigena, a pilgrimage route connecting Palermo to Agrigento, passes through most archaeological sites analyzed. The multidisciplinary research project presented in this volume combines archaeology, geomorphology, remote sensing, and digitization of cultural heritage to create an updated topographical catalog of the archaeological heritage in this part of the island. The catalog at the end of the book shows the current condition and distribution of archaeological heritage in the area, which can contribute to the planning of new activities and future research. This part of the island has a great deal of archaeological evidence, with evidence of continuous human occupation from the Middle Neolithic period to the arrival of the Normans during the Middle Ages. The study begins by analyzing the territory from a strictly geomorphological point of view, in order to have a profound understanding of the geographical area of reference, including its orography and abundant water and mineral resources. From these analyses, the study moves on to topographical assessments, which answer strictly archaeological questions on prehistoric and historical road conditions.

The hinterland of Milena was extensively researched and excavated between the 1970s and the early 2000s. Despite being recognized for the natural and cultural importance of its landscapes, as demonstrated by a Landscape Piano created by the *Regione Siciliana* in 2015,¹ no new archaeological excavation activities have taken place in the area for over twenty years. This has created a significant gap in our knowledge and interpretation of the archaeological heritage present in the region, especially considering the technological advancements that archaeologists have used to support their research in recent decades. Therefore, the main objective was to refocus attention on this area by gathering the data obtained from research in the past and combining it with new non-invasive technologies such as GIS applications, satellite remote sensing, and aerial photography. The project also aimed to incorporate technological tools such as drones, cameras, and laser scanners to digitize the area's cultural heritage sites. Extensive research was conducted to identify and select the main issues related to the study and protection of the archaeological heritage. Special attention was given to prehistoric archaeological heritage since it is the most widespread in the Milena area. It was essential first to understand the most suitable approach to solving each problem without causing damage to these delicate archaeological assets. Specific interventions were carried out once a particular situation or need was identified. The interventions were executed using the correct methodology and tools to minimize errors, optimize time, and reduce costs.

¹ Piano Paesaggistico Regione Siciliana 2015, Ambiti regionali 6, 7, 10, 11, 12 e 15 ricadenti nella provincia di Caltanissetta.

The first chapter of the research focuses on analyzing the actual needs of prehistoric archaeological contexts. This involves a detailed identification of the unique characteristics and needs of an archaeological heritage that is essentially fragile and demanding. The subsequent part of the chapter describes in detail possible solutions to the problems identified in the first part of the chapter. After gathering this preliminary information, the second chapter focuses on a detailed description of the case study. The chapter starts by examining the geomorphological framework of the area, with a particular emphasis on the topography of the territory. This aspect is significant as the geomorphological conditions of the region over the centuries heavily influenced settlement dynamics. The presence of rivers and mountain ranges has also affected the road system in both historical and prehistoric eras, as it does today in an area where the road network is still lacking in some places. In the interest of comprehensive research that incorporates multidisciplinary knowledge to understand the past, ample space is given to the analysis of geological factors that may have influenced human settlement and productive activities such as the raising of livestock, agriculture, and mineral extraction. The same chapter also provides an in-depth review of previous studies highlighting the prehistoric settlements' systemic diffusion across the mountains and hills and their contact with the Aegean peoples during the Middle Bronze Age, evidenced by the presence of imported materials such as copper ingots. This part of the work is solely for compiling purposes and focuses on reconstructing the dynamics that have driven prehistoric communities to systematically and continuously settle in this area of Sicily over the millennia. Through the compilation of previous works and studies, the chapter describes the dominant settlement trends and cultural contexts created between the Middle Neolithic and the Copper Age, up to the Early and Middle Bronze Ages. The compilation of previous studies was also essential for constructing a GIS system that can accommodate the state of research and other relevant information, including the aggregation of geo-topographical and historical-archaeological data. It is the third chapter that begins to cover the experimental activities of the research, carried out with the contributions of both material and expertise provided by the Department of Civil Engineering and Architecture (DICAR) of the University of Catania. The chapter describes the work carried out in the field with the help of UAV technology, drone aerial photogrammetry, terrestrial photogrammetry, and remote sensing. It also explains the steps taken to acquire the data and their post-processing. The detailed explanation of these steps serves to benefit future archaeological research and valorization efforts for the heritage in the area, which will be discussed further in subsequent chapters. The team used remote sensing to tackle the challenge of dealing with a large territory and the impossibility of conducting new archaeological excavations in the short term. Modern technologies allowed them to obtain unpublished data without requiring new excavations. The same chapter also describes numerous other activities in the field, including mapping all archaeological remains and signs of occupation using drones and GPS. All the information gathered during fieldwork was entered into a GIS portal. This allowed for careful data analysis by relating them to each other and the findings from previous research conducted in the last century. Combining geological and geomorphological data made it possible to identify new settlements and hypothesize about prehistoric routes concentrated in certain areas. The data also provided insight into the relationships between this part of Sicily and the rest of the island and the Mediterranean. The fourth chapter organizes the collected data, creating a census of 46 different sites, each of which was verified in person, often requiring long journeys on foot due to the often rugged and mountainous terrain that was not always accessible by car. Each site in the census was mapped and described in a topographical catalog, which is included as an appendix to the book. The sites of the census are then considered and analyzed together to present new hypotheses about trade, productive activities, and settlement dynamics in the regions.

Chapter 1. Presentation of the Case Study

Geomorphology and topography of Milena area

Milena is a small village in the central southern part of Sicily, Italy. It is situated to the southeast of Palermo and north of Agrigento, which is nearby (Fig. 1). Milena is located near the Platani River valley and surrounded by the scenic Sicani mountains. This place is known for nature trekking enthusiasts, as it is famous for the Monte Conca nature reserve.

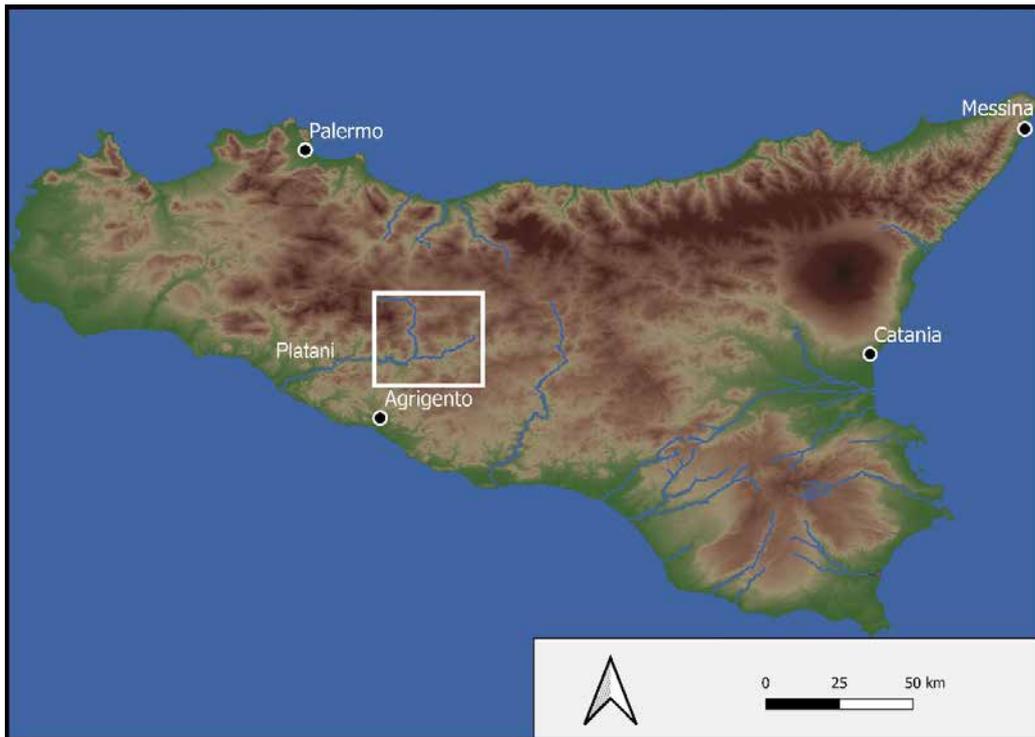


Figure 1. Map of Sicily showing the location of the territories Milena, Campofranco, and Sutera around the rivers Platani and Gallo d'Oro in the white box. Colorized version of the DEM from Tinitaly DEM made available by the Sezione di Pisa Istituto Italiano di Geofisica e Vulcanologia (Tarquini et alii 2007; 2023).

Before delving into the technical and archaeological aspects of the research, it is essential to describe the geographical context of the area under study. Understanding the terrain is crucial to comprehending why humans have inhabited and traversed the territory for thousands of years. The area under study in central southern Sicily, is within the eastern Sicani Mountains' tectonic wedge (Basilone et alii 2014) (Fig. 2). The geological formations in this area show two different types of landscape. In certain areas, ridges made of carbonate rock are found among gently sloping clay hills (Castrorao Barba et alii 2024). The carbonate ridges are of various sizes and have uneven shapes with rocky sides. Marina Congiu has extensively studied the geomorphological and mining characteristics of this Sicilian region, located between the Platani and Gela rivers. The Milena area is mainly characterized by chalky-sulphurous formations covered by Trubi deposits and Pliocene limestones (Congiu 2005). These rock formations are crucial to understanding the territory, as they are the most distinctive features of the Milena landscape, and their existence has significantly impacted the utilization of this area for productive purposes throughout history. Furthermore, they have also influenced specific choices for human settlement. Because this area is characterized by limestone rocks with a high degree of

solubility, this region experiences a unique form of erosion that affects carbonate and evaporite rocks, causing karst phenomena as a result. This erosion, caused by underground water circulation, results in caves, wells, sinkholes, and galleries like those in Monte Grande, a crucial archaeological area located southwest of Milena (Congiu 2005). Another important example is Monte Conca, a few kilometres North of Milena, where a complete karst complex formed due to underground and surface erosion. The waters that flow along the valley at the foot of Monte Conca immerse themselves inside an underground canal or sinkhole; the latter crosses the entire mountain and exits on the opposite side into a valley below (Panzica La Manna 1997). The area is a Nature Reserve with significant archaeological remains from the Middle Neolithic to the Medieval period.



Figure 2. Aerial photograph of the Sicani Mountains in the Milena area.

As a result, the abundant presence of water, in combination with geological characteristics, has shaped the landscape and enriched it with numerous springs scattered throughout the territory. Settlements were often established near these springs, which are still active today. For instance, the mountain of Monte Grande, which contains some of the most significant tombs and prehistoric settlements (La Rosa 1997g), has three springs that still flow even in the hottest periods of the year. Some springs near settlements with traces of human activity from different eras, including the prehistoric, Roman, and medieval periods (Piano Paesaggistico 1999), have now been converted into modern drinking troughs. Therefore, the constant availability of water is clearly one of the most significant factors that influenced the selection of places to inhabit throughout the area's history. The region also has a considerable amount of water flow due to the Platani River that passes through the territories of Campofranco and Milena before changing its course towards the southwestern part of the island. The river intercepts several tributaries along its path, which vary in water flow depending on the season; however, some maintain a moderate water level throughout the year. One such tributary is the Gallo d'Oro river, which joins the Platani near Monte Conca. As anticipated, Monte Conca is an essential site for archaeological research as it contains historical artifacts from the Neolithic period to the Middle Ages (La Rosa and Arcifa 1997: 269-270). From the top of the mountain, one can observe where the two rivers merge, along with the vast valleys stretching towards the north and south. The convergence point between Gallo

d'Oro and Platani rivers has always been a vital hub, which has attracted culturally and chronologically different populations to occupy the area of Monte Conca.

Over the years, the presence of waterways has led to the formation of the Gallo d'Oro basin to the West and North of the municipality of Milena and the Vallone Coda of Volpe and Platani to the East. This erosive action has created large valleys surrounded by chalky hills, which dominate the valley territories that flow into the Platani basin (Saia 1997: 19-20). The rivers have significantly shaped the landscape over time (Piano Paesaggistico 2015: 91-92), excavating the territory for thousands of years, forming small and large valleys. From an orographic perspective, the resulting landscape is harsh, marked by mountains and hills that make it difficult to travel by road. This was also the case in prehistoric times when rivers flowed at a higher rate and were even more challenging to cross. Today, the area's landscape mainly consists of arable land that is extensively exploited, some uncultivated areas, and pastures. The agricultural scenery in this region is typical of the Sicilian hinterland (Schicchi et alii 2021). It is characterized by cultivated fields, primarily of wheat in rotation with legumes, vineyards, and olive groves. Certain areas are distinguished by the presence of old olive trees. Grazing by sheep, goats, and cattle has led to the development of seminatural environments in hilly and sub-mountainous areas characterized by prairies and shrublands in more marginal areas (Castrorao Barba et alii 2024). The numerous agricultural activities that rely on rivers and streams significantly reduce their flow, making them easier to cross in modern times. In the past, crossing points were likely concentrated along the Gallo d'Oro river, as the Platani River is too dangerous to cross even in the summer. The only flat areas in this rocky and mountainous region are found in the valley bottoms of the Platani, Gallo d'Oro, and Salito rivers (Piano Paesaggistico 2015: 92). It is important to note that the waters in this area are highly saline due to rock salt deposits along the banks of streams and rivers. This fact highlights the connection between the geomorphology and the territory's history. The area's economy has always been closely linked to mining work, a significant source of employment for generations of Sicilians, and agriculture.² The extraction of sulfur and rock salt has marked the area's fate for many decades. Evidence of mining activities in the territory dates back to the Imperial Roman period, as documented by Salmeri (1997: 263-268). The main discoveries of *tegulae sulphuris* were found in the rural Grotte, Racalmuto, and Milena municipalities (Guarino 2023: 125). These findings confirm the sulfur mining in this region of Sicily, from the 1st century B.C. until the 6th century A.D. Alongside sulfur, the trade of salt and chalk was also significant, considering the abundant amounts of these elements found along the Platani River and the coastline.

Moreover, traces of possible mining activities during the prehistoric periods have been identified in the areas surrounding Casteltermini (AG), a town with a similar geological formation (Gullì 2016: 106) a few kilometers away from Milena. Such activities have significantly impacted the relationship between humans and the area's geomorphology, and may have also influenced settlement patterns of the area over the millennia. The archaeological implications of these findings will be discussed in detail later.

As previously mentioned, the numerous hills are a distinctive characteristic of the area. The Sicani Mountains create a challenging landscape. The hills are plentiful but do not reach remarkable heights. In the areas between the municipalities of Milena and Campofranco, there are only large hills interspersed with low mountains. Generally, the hills and mountains range between 300 and 400 meters in height, with the exception of Monte Campanella, which is 661 meters high. Over the centuries, these hills have become the sites of numerous settlements. The most significant aspect of these hills is their positioning,

² One can refer to the 2015 Piano Paesaggistico to learn about the Milena area's geography and agricultural activities. This plan covers the Regional Areas 6, 7, 10, 11, 12, and 15, which are part of the Caltanissetta province. The Regional Department of Agriculture, Rural Development, and Mediterranean Fisheries also has valuable information. For more details, one can check the regional department of Rural and Territorial Development Area 3 - programming and Innovation U.O. 1 - Forestry Planning and Programming. The Regional Program of Silvicultural and Infrastructure Interventions 2022 is also a valuable resource.

which, in some cases, is arranged in perfect succession across the valleys that head from the north towards the south and southwest, making them ideal spaces for the foundation of settlements used for monitoring the territory and the possible routes that crossed it. However, while some mountains have easy-to-climb contours, others, though not too high, are particularly difficult to navigate, making surface reconnaissance operations complex. Nevertheless, this did not prevent the establishment of prehistoric settlements in some of the most rugged locations, such as the peaks of the Chiertasi and Monte Grande mountains (La Rosa 1997). Today, the territory has remained almost unchanged for centuries and has been exclusively used for agriculture and the raising of livestock. The availability of raw materials such as sulfur also makes it ideal for various cultures throughout prehistory and history to successfully take root in this area, which different communities have favored over time. Landscape features throughout the ages probably favored the diffusion of a small galaxy of archaeological contexts. Therefore, it is necessary to discuss the long-term history of Milena, from prehistory to the Byzantine period, illustrating the primary evidence covered in the literature.

Prehistoric archaeological context

During the 1970s and during the following twenty years, the University of Catania conducted several research projects in the Milena region. These efforts established the Arturo Petix Civic Museum, which now holds the archaeological discoveries made over that period of time. Ernesto De Miro and Vincenzo La Rosa were the first scholars to study this area systematically (De Miro 1968). La Rosa's work on the archaeology of Milena is compiled in the book "Dalle Capanne alle Robbe," which is an essential resource for any subsequent research on the subject. In this chapter, La Rosa's work and the conclusions he reached over the years of exploring and conducting research in the area is discussed. Much of La Rosa's work focused on the analysis of the interior of Sicily and sought to establish links between various prehistoric and historical periods, leading to the development of theories on how and why the region of Milena was occupied over the centuries. A more accurate outline of the archaeological horizons in the area, which are largely divided into various cultures that are identified by or linked to the main ceramic typologies found in Sicily, is presented in Table 1.

The Neolithic and Eneolithic phases

La Rosa began their investigations in the 1970s in Serra del Palco, a small mountain a few kilometers from Milena in the area of Mandria (Fig. 3). The hill has several overlapping huts that date from the Middle Neolithic period through the Early Copper Age (Guzzone 1994: 305-313). At least six phases of the settlement's life were identified. The third phase was the most monumental, as a sizeable architectural structure with an apse was built (La Rosa 1985: 475-482). Research conducted in the areas of Monte Grande and Mustansello near Serra del Palco revealed complete stratigraphies with materials in the San Cono-Piano Notaro, Serrafferlicchio, and Malpasso styles. These findings proved that the area was frequented throughout the Copper Age (Maniscalco 1997: 63-72; Maniscalco 2007: 167-184). The locality of Mezzebi also has evidence of the continuous occupation of the area between the Middle Neolithic and the Eneolithic periods (Fig. 3). An anthropic ditch was discovered that yielded imprinted sherds, figurines, tools, and flint and obsidian debitage. In addition, the remains of a hut dating to the end of the Copper Age were found (Privitera 1997: 87-89). The areas of San Paolino and Zubbio have also yielded evidence of Neolithic occupation in the Monte Conca area and near Mezzebi. These signs date from the middle to the late and final phases of the Neolithic, as demonstrated by the presence of pre-Stentinello ceramics, Stentinello, Diana, and Eneolithic ceramics (Guzzone 1994: 305-313). To the North of Serra del Palco, remains of a Neolithic settlement have been documented in the locality of Pizzo Menta, consisting of post holes and two-floor levels connected to wall structures were found (Guzzone 1994: 305-313). Further south than Milena, the locality of Zellante also showed signs of occupation from both the Neolithic and Eneolithic periods (Guzzone 1994: 305-313) (Fig. 3).

Table 1. Archaeological phases, their absolute chronology of Sicilian prehistory, combined with ceramic styles.

Archaeological phases	Years B.C.	Ceramic productions	Periodization
Early Neolithic	6200-5700	Archaic Impressed pottery	Early Neolithic
Middle Neolithic	5700-4500	Stentinello incised and impressed pottery; bi- and trichromatic-painted pottery	Late Neolithic I A
Late Neolithic I	4500-4000	Diana style pottery	Late Neolithic I B
Final Neolithic	4000-3700	Diana-Spartarella style pottery	Late Neolithic II A
Early Copper Age	3700-3300	S. Cono-Piano Notaro incised pottery	Late Neolithic II b
Middle Copper Age	3300-2800	Serraferlicchio painted pottery	Early Bronze Age I
Late Copper Age	2800-2350	Malpasso style pottery	Early Bronze Age II
Final Copper Age	2350-2150	S. Ippolito painted pottery	Early Bronze Age III
Early Bronze Age	2150-1800	Castelluccio painted pottery	Early Bronze Age III – Middle Bronze Age I
Middle Bronze Age I-II	1800-1450	Castelluccio painted pottery; Rodì-Tindari-Vallelunga style pottery	Middle Bronze Age II – Late Bronze Age I-II
Middle Bronze Age III	1450-1270	Thapsos style pottery	Late Bronze Age III A – B1
Late Bronze Age	1270-1150	Pantalica style pottery	Late Bronze Age III B2
Final Bronze Age	1150-1050	Cassibile style pottery	Late Bronze Age III C / Sub-Mycenaean
Iron Age I	10th – 9th centuries	S. Angelo Muxaro style pottery	PG and EG periods

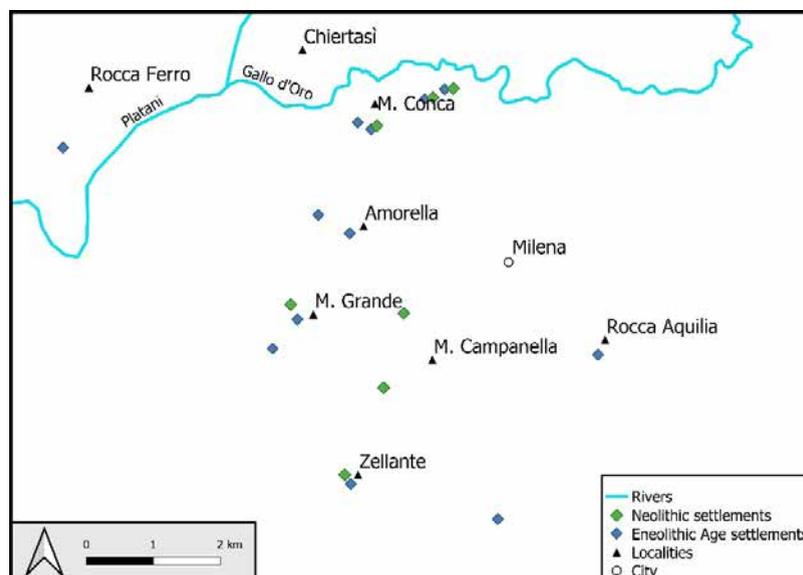


Figure 3. Areas with signs of occupation during the Neolithic and the Copper Age.

Evidence suggests that the area of Milena was inhabited throughout the Copper Age, including the signs of direct contacts between this area and other parts of Sicily, indicating that this region was dynamic and connected with the rest of the island even during this period. For instance, certain types of ceramics typical in Western Sicily, particularly those of the Conca d'Oro style, were found in Milena (Maniscalco 2007). Other forms related to the Malpasso style show signs of contact with the central-eastern area of the island. Based on these findings, it can be observed that at least until the Late Eneolithic, there were cultural contacts can be highlighted with the regions of the Conca d'Oro and the area of Syracuse, as demonstrated by the abundant presence of Malpasso style ceramics (Maniscalco 2007: 179-181). Many richly decorated ceramics were found inside the numerous cave sites in the area of Milena. It seems that this data mainly concerns the San Cono Piano-Piano Notaro style ceramics, and this choice could be attributed to the possibility that the caves represented places of worship, perhaps due to the presence of underground vapors (Maniscalco 2007: 181-182). In the subsequent period, linked to the Malpasso *facies*, the use of these places continued for cultic reasons, such as the cases of the caves of Fontanazza Monte Grande (Milena) and Palombara (Raffadali) (Gullì 2011), a habit which is also accompanied by the wider practice of burying the deceased in caves (Maniscalco and Cazzella 2012: 65). Additionally, although the data can be interpreted in numerous ways, the gradual and contemporary evolution in the use of the caves of the two areas of Milena and the very nearby Raffadali could demonstrate a cultural link between the regions, leading to the hypothesis that, in reality, the sphere of influence of the same culture also extended beyond the border of the territory of Milena.

The phases of the Bronze Age

From a settlement point of view, there was a considerable and gradual increase in the number of villages over the centuries. During the Bronze Age, numerous settlements developed near the top of the hills (Fig. 4). These settlements were all located in areas that were perfectly intervisible such as the sites of Monte Raffè (Mussomeli-CL), S. Paolino, Zubbio, Cozzo Reina, Pizzo Menta, Pirito, Zellante, and Monte Grande, from which it is also possible to observe the top of Monte Sant'Angelo Muxaro, Mustansello, Baruna, Rocca Amorella, Mandria, Finaita, and Rocca Aquilia (La Rosa 1997g: 73-78; Maniscalco 1997: 68-69; Piano Paesaggistico 1999) as well as Fontanazza (Maniscalco 2007: 170). Traces of an Early Bronze Age hut were discovered in Mezzebi, in the same area where the Neolithic and then Eneolithic settlement was previously documented (Privitera 1997: 87-89). Referring to the same period, one can also observe the widespread diffusion of ceramics relating to the Rodi-Tindari-Vallelunga type in the area of Milena (Ardesia 2014: 90). Like Mezzebi, Monte Conca, and San Paolino, they also continued to be frequented during the Bronze Age, as evidenced by the presence of Castelluccian villages located in the same areas as in previous periods (Palio 1997: 111-116; Privitera 1997). Also, from Monte Grande and Mustansello, some evidence of human presence in periods between the Copper and Bronze Ages are reported (La Rosa 1997d: 197-202; Maniscalco 1997: 63-72; Palio 1997: 111-116). Finally, the Zellante locality continued to be inhabited between the Final Copper and Middle Bronze Ages (Maniscalco 1997: 63-72; La Rosa 1997d: 197-202). New evidence from the Pernice, Raffo, and Baruna localities shows large quantities of Castelluccian and RTV-style ceramics. (Ardesia 2014: 102; La Rosa 1997d: 197-202). At the top of Serra del Palco, a new settlement was established at a higher elevation than those from the Neolithic and Copper Ages. The abandonment of these previous settlements occurred before the founding of the new Bronze Age settlements (Ardesia 2014: 159-160; La Rosa 1988, 1991).

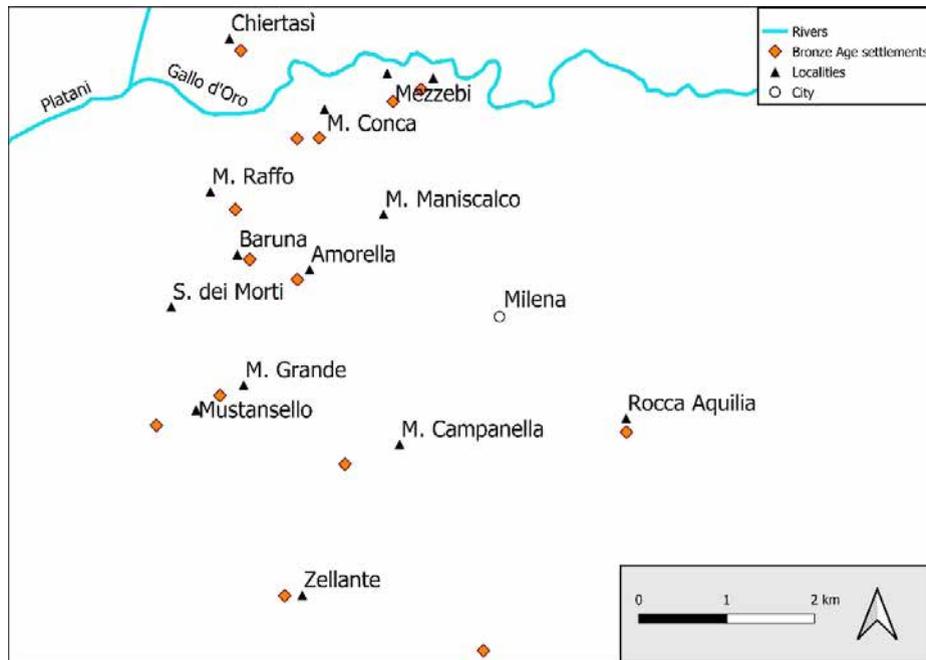


Figure 4. Areas with signs of occupation during the Bronze Age in the Milena territory.

During the Thapsos period, or slightly later, new monumental burials were created at Monte Campanella. The most monumental burial is called the Tholos B tomb (Fig.5), inside which imported Mycenaean ceramics were found alongside late Thapsos ceramics (Tusa 1999: 527). This tomb also contained two bronze basins, one of which originated from Cyprus and was dated to the 13th century B.C. (Tusa 1999: 494). From this moment onwards, the number of Tholos burials in the nearby areas of Campofranco, Milena, and Mussomeli significantly increased (Tomasello 1996: 112-148). Specifically, other Tholos tombs were discovered in the region of Mustansello (La Rosa 1997b: 153), Pizzo Menta (Castellana 2002: 138), and Rocca Aquilia, which is the largest in the entire territory (La Rosa 1997e: 194) (Fig.s 5-6).

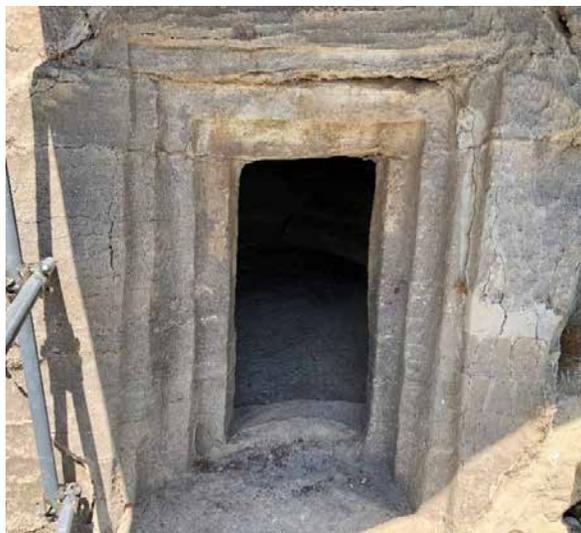


Figure 5. Entrance to the Tholos B at Monte Campanella (photo by the author).

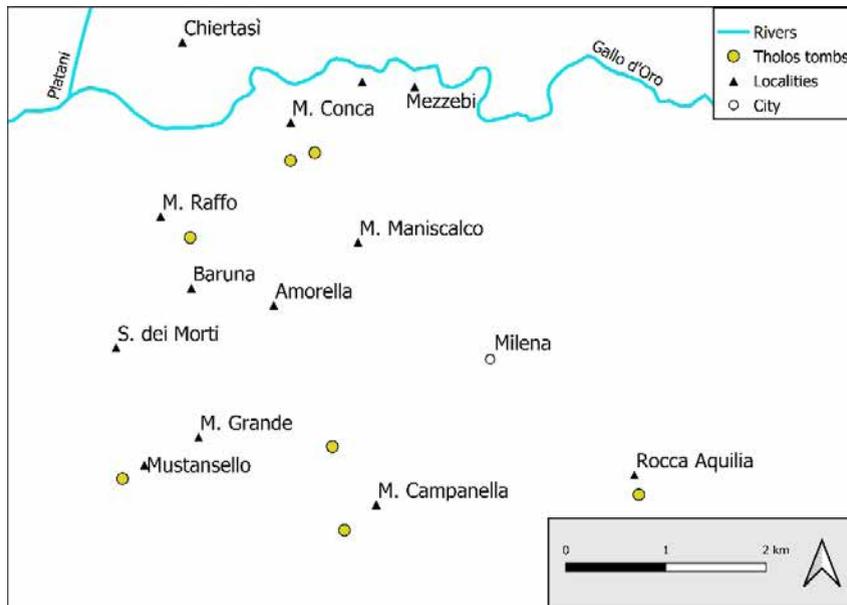


Figure 6. Position of Tholos tombs in the territory of Milena.

The spread of the Tholos type tombs (Fig. 6) is linked to the emergence of Aegean-imported products in the area. The tholos tombs on Monte Campanella contained Thapsian products and bronzes, likely imported from the Aegean. Additionally, two gold rings, believed to be imported from the Aegean, were discovered at the foot of the same mountain and can be dated between LA III B and LA III C (Militello 1997: 190). These findings indicate the dynamic nature of a region that, from the Middle Bronze Age onwards, was capable of attracting resources from other Mediterranean areas despite its distance from the coast (Castellana 2002: 138; La Rosa 1997a: 245-250, Tusa 1999: 527). Furthermore, studies on the remains of a Mycenaean amphora found in Monte Campanella suggested that it was not imported but locally produced (Jones & Vagnetti 1991; Tanasi 2020: 179). Such discoveries support Ernesto De Miro's theory of "Mycenaean taste," indicating the adoption of the Mycenaean artistic style in locally crafted products, in addition to imports. This trend continued in subsequent periods and was observed in settlements of peoples in the middle Platani Valley and the Agrigento area (De Miro 1997: 138-139). Vincenzo La Rosa made similar observations regarding the numerous tholos tombs in Milena, noting their apparent influence from overseas, yet adapted to local taste and tradition in their final form (La Rosa 1997c). Between the end of the Bronze Age and the beginning of the Iron Age, many of the villages founded during the previous phase continued to be inhabited. Despite a slight decrease in the number of villages, there are still numerous areas with signs of occupation, such as Rocca Ficarazze, Monte Campanella, Rocca Ferro, Rocca Grande, Rocca Raffo, Rocca dei Morti, Rocca Amorella, Monte Raffo, Rocca San Marco, Cozzo Rejna, Masseria Diruta, and Fontanazza (Congiu 2018a: 19-21; Congiu 2018b: 426; La Rosa 1997h: 251-256).

Chapter 2. The Prehistoric Landscape of Milena

Dominant settlement trends

The prehistoric landscape of Milena is characterized by settlements that show continuous signs of human presence from the Neolithic through the Eneolithic and up to the Bronze and Iron Ages. To understand the origin and formation of these sites, it is necessary to develop a profound understanding of the landscape, including its geomorphological, topographical, geological, and hydrological characteristics and the significant changes it has undergone over time (Kempf 2020; Giannitrapani 2018). The settlements are typically near a river or stream and occupy a plateau near the top of a hill, which in modern times are exposed to constant gusts of wind almost daily. The surrounding area is fertile and generally dedicated to crops, especially the cultivation of wheat and orchards that reflect the productive needs and customs of the Sicilian peoples on the island since prehistoric times that favors a more efficient exploitation of the territory according to a scheme that was generally followed by the communities of subsequent historical periods (Fitzjohn 2007; Rizzo 2004). Though settlement was largely continuous through prehistory, many sites were abandoned entirely during transitional periods between different eras, often moving to a higher altitude, as in the case of Serra del Palco Mandria in Milena (Fig. 7). The site, founded around the Middle Neolithic period, continued to be frequented until the initial phases of the Copper Age (La Rosa 1985: 475-482). After a period of abandonment, the area was inhabited again during the Castelluccio and Thapsos *facies* (Ardesia 2014: 159-160; Palio 1997), evidenced by the discovery of a new settlement on the same mountain but at a higher altitude, much closer to the summit than the older settlement.

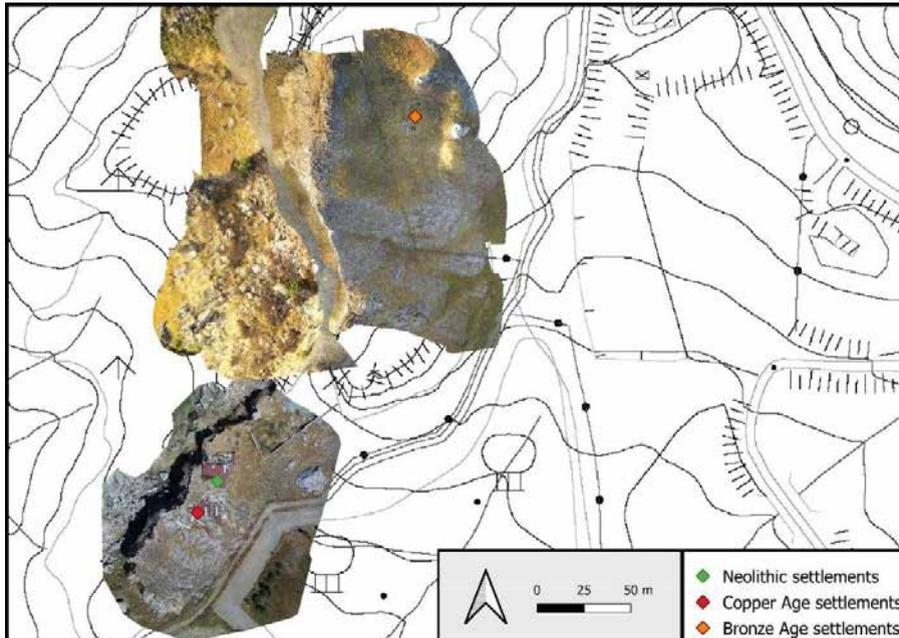


Figure 7. Milena, Serra del Palco. CTR regione Sicilia overlaid by orthographic UAV photo. The locations of the different prehistoric settlement phases are marked in color. Neolithic settlements are marked by a green dot, Copper Age settlements in red, and Bronze Age settlements in orange.

The choice of a higher location may have been due to a greater need for defense against rival groups, as the new settlement appears to be much more defensively placed than the previous one, which occupied a vast plateau that was easily accessible from the base of the mountain. A similar pattern can also be

observed in Monte Conca (Fig. 8), where a settlement founded in the Middle Neolithic continued to show signs of settlement until the Middle Bronze Age. Another settlement was established during this period, on a plateau on the same mountain but at a higher elevation (La Rosa 1997b: 197-202).

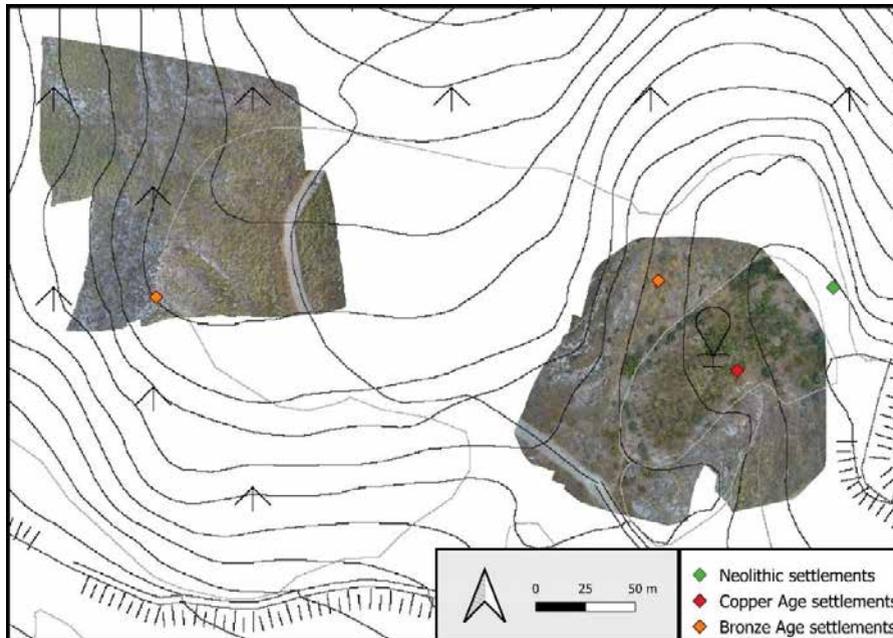


Figure 8. Milena, Monte Conca. CTR regione Sicilia overlaid by orthographic UAV photo. The locations of the different prehistoric settlement phases are marked in color. Neolithic settlements are marked by a green dot, Copper Age settlements in red, and Bronze Age settlements in orange.

The deliberate movement of settlements from lower to higher altitudes demonstrates an organized spatial strategy following a specific logic. The decision to permanently maintain positions on the same mountain also confirms the need to occupy space in the Milena territory, favoring visibility between settlements. The observation of the many settlements together reveals a pattern in the selection of mountains to occupy. What unites these settlements, scattered across a territory of approximately 5000 hectares, is their positioning to exploit the significant presence of springs and water sources near the settlements mentioned (Saia 1997: 23-24). Most settlements are located on moderately high hills with ample water supply, while others are situated along the course of the Platani River and its tributaries, the Gallo d'Oro and Salito rivers. In contrast, even in more interior locations, others are connected to the river system through streams and valleys (Maniscalco 1997: 67).

Milena in the Neolithic and Eneolithic periods

The region of Milena was continuously inhabited from the Middle Neolithic throughout the entirety of the Eneolithic period. Studies conducted in the Fontanazza 1 cave of Monte Grande have revealed a stratigraphic succession with materials from the Middle Bronze Age, confirming human presence in the area throughout the Copper Age and its reoccupation during the Early and Middle Bronze Age (Maniscalco 1997: 63). The prolonged use of caves demonstrates that certain landscape features, such as quarries, caves, or rivers, tend to be utilized over time for religious purposes (Bradley 2000; Attema 2006: 522). The strong connection between the territory and the natural environment is represented by the role that waterways played in influencing settlement dynamics and interactions between the local inhabitants and peoples from other areas of the Mediterranean. The presence of the Platani River likely facilitated the arrival of materials imported from the coasts to the internal regions of the Agrigentine

region, as evidenced by the presence of obsidian from both Lipari and Pantelleria in Milena (Ceruleo 2003; Freund 2017: 35-48; Pappalardo et alii 2013). The presence of obsidian in an area far from the coast, along with the concurrent presence of Diana-type materials, confirms that the territory was actively involved in commercial dynamics during the Sicilian Neolithic and maintained relationships with peoples from different areas of the Mediterranean (Zilhão 2013: 185-200). This continued into subsequent periods, especially during the Bronze Age, when imported Aegean materials and products began to make their appearance in this region, as well as others around Sicily (Tanasi 2005). The presence of vascular ceramic forms of the Conca d'Oro type in the Copper Age, best known in areas around modern-day Palermo, further demonstrates the circulation of materials through routeways around the island from other cultural contexts, like the areas characterized by the use of Conca d'Oro type ceramics (Tusa 1994: 292). This suggests the presence of a cultural context that connected the regions of the Conca d'Oro with those of the Platani valley, passing through the site of Milena, highlighting the strategic character of the settlements along an axis culminating at the mouth of the Platani (Tusa 1994: 331). The identifiable passage of materials through Sicily justifies the importance of theories about the past that are linked to the study of the landscape, as the area of Sicily was well connected with the neighboring regions, thanks to rivers such as the Platani, which allowed it to be closely associated with other critical prehistoric sites such as the Fitusa cave and Sant'Angelo Muxaro (Maniscalco 1997: 67).

Milena in the Early Bronze Age

Especially when considering the Bronze Age, there is interesting data from studies on the circulation of materials, such as those in the Rodi-Tindari-Vallelunga (RTV) style (Ardesia 2014: 90), which help to reconstruct the possible trade routes and the role of Milena's territory within them. According to Viviana Ardesia, the style spread within the Platani valley from the westernmost reaches of the island and then passed through the Agrigentine coasts before reaching the hinterland (2014). At the same time, from the North/West, there is evidence of the spread of the so-called Moarda style, and in this case, the Torto River may have been one of the main pathways that allowed the style to spread towards Milena, passing through Vallelunga (Tusa 1999: 338). The diffusion of the Castellucciano culture's materials must also be considered. While some scholars argue that the areas around the Platani were unsuitable for the typical productive activities of this culture (Tusa 1999: 402), others claimed that the presence of the wooded regions between Vallelunga and Castronovo, located just north of Milena, could favor the establishment of societies dedicated to pastoralism. These societies could, in turn, establish commercial relationships with cultures from other areas of the Mediterranean (Castellana 2002: 88-89). In any case, the territory of Milena hosted several Castelluccian settlements, such as Serra del Palco, where a new village was founded in that cultural period. The village was also occupied during the Thapsos period (Ardesia 2014: 159-160). This last evaluation offers interesting new points of observation. One can legitimately ask what the role of these internal sites could be. For example, does the existence of a road axis change the interpretation of the Castelluccian presence in the area from the idea of their vocation exclusively linked to the cultivation of the surrounding area? Observations of the diffusion of the RTV style support the recent data. Its presence in the internal regions of the island may indicate a complex society and cultural contacts with the western Mediterranean. The discovery of these materials in these areas could be due to the presence of raw materials such as sulfur and rock salt in the territory, suggesting the existence of a market capable of both exporting and attracting resources (Giannitrapani 2009: 240; Giannitrapani and Ianni 2020: 481).

The observations discussed above hold significant value in attributing greater complexity to the settlements from the Castelluccian era in the innermost areas of the island. At this point, the presence of these settlements could be explained and connected to much more complex reasons than just agricultural exploitation of the area. It is possible that this area played an intermediary role between the Platani valley and the rest of western Sicily. Theoretically, this could be a strong reason for maintaining

these settlements, whose role at that point would be more strategic than anything else and not necessarily exclusively linked to agricultural activities. It is probable that during the Castelluccian era, the Milanese area, and more generally the Platani area, was utilized for mining purposes, considering the notable presence of sulfur in areas with evidence of prehistoric occupation, not far from Milena (Tusa 1999: 444). On the other hand, this last aspect plays a central role, especially considering the importance of sulfur extraction during this period. The data obtained from the site of Monte Grande, a location about 35 km south of Milena, indicate a large area dedicated to both extraction and processing of sulfur, demonstrating the central role of this site in the Castelluccian age, in carrying out an activity of considerable scale (Castellana 2002: 44-49). Similarly, the sulfur mines, whose prolonged use over the millennia has likely influenced the settlement patterns and methods in the area, can be observed (Attema 2006: 525).

Milena in the Middle Bronze Age

The Middle Bronze Age is largely characterized by the presence of the Thapsos *facies*, and the numerous finds of Mycenaean artifacts that have been found in various areas of Sicily during the period (Tanasi 2005), including along the Platani valley. Another characteristic of the MBA is a new burial custom that was adapted to local conditions alongside the traditional burial methods. Tholos tombs, thought to imitate the tholos-profile tombs of the Aegean, were incorporated alongside the so-called Grotticella tombs that were local to the area. These burials clearly show signs of interaction with the Aegean world; however, tholos tombs in Sicily are adapted to the local context by being excavated directly into the rock rather than built with stone in external areas (Cavanagh and Laxton 1981: 109-140). According to an alternative theory, the cave tomb with an ogival profile is believed to have originated from circular huts and, therefore, from the domestic environment (Leighton 2015: 190-203). Regardless, the peoples that adopted the Tholos culture spread to the heart of Sicily, demonstrating the penetration of Aegean culture into the Sicilian hinterland, as evidenced by discoveries at various sites, especially in the Platani valley, such as those in Milena, Sutera, and Mussomeli. Alongside the adoption of the tholos type tombs, the circulation of Mycenaean products in Sicily has interested many scholars. Davide Tanasi conducted a comprehensive survey of Mycenaean imported materials in Sicily, noting that they were mainly located in coastal areas, except for a few cases, such as at Milena, where Mycenaean type ceramic and bronze products, reached the Sicilian hinterland likely through riverine routeways. Thus, the Milena area seems central to significant commercial traffic from the eastern Mediterranean regions. In turn, the Platani River must have played a significant role in the circulation of metallic materials, as evidenced by findings at Monte Campanella. It is worth noting that similar basins to those found at Monte Campanella were also discovered in tombs closer to the Agrigentine coast, as well as in Thapsos and near Syracuse (Tanasi 2020: 184).

Understanding the presence of these materials in such an internal area is not a straightforward task. One possible explanation could be connected to the mining of mineral resources in the Milena area. Even during this period, sulfur mines were well-documented a few kilometers from Milena in Casteltermini (AG). Sulfur veins are precisely documented in the Rovereto district, on the southern slopes of Rocca Ficarazze, and in the Mandravecchia valley (Gulli 2016: 104). During the transition from the Bronze Age to the beginning of the Iron Age, two essential settlements emerged: one in Rocca Ficarazze, located on the bank of the Platani, and the other in Rocca Ferro, situated on a well-defended hill (La Rosa 1997h: 251-257). These settlements are significant from a defensive standpoint as they seem to control the upper Platani valley, similar to the nearby settlement of Monte Raffè, which appears to have a similar role in the area between the Fiumicello and the Belici (Congiu 2018a: 19-21; Congiu 2018b: 426; Tomasello 1996: 24). The presence of sulfur banks near Rocca Ferro, specifically in a small valley Northeast of the hill where a small village also existed (La Rosa 1997h: 253), could indicate that sulfur extraction

remained one of the main activities in this area during that period that could have driven the import of Mycenaean materials.

The presence of multiple sulfur extraction sites is naturally connected with the need to transport sulfur from inland areas to coastal regions for trade, which would have necessitated the development of efficient transit routes to facilitate the transportation of sulfur. Considering the technological limitations of the time, it is possible to identify specific routes that were likely used for the transportation of the raw material (Calderone 2020; 2024). Naturally, exploiting the Platani River could have provided advantages in this regard. Furthermore, archaeological findings at the Monte Grande (AG) site near the municipality of Palma di Montechiaro (AG) indicate that sulfur extraction and processing were carried out during the Bronze Age (Castellana 2002: 44-49).

Notably, a fragment of a copper ingot dating back to the late Bronze Age was discovered in Cannatello (Tusa 1999: 607), a locality believed to have been involved in the sulfur trade during the Middle Bronze Age (Castellana 2000: 165; De Miro 1999). Some interpretations suggest that Cannatello was an emporium and a commercial hub serving as an intermediate destination for trade routes between the Aegean and Sardinia (Russel & Knapp 2017). The discovery of Mycenaean-inspired materials produced in the territory of Milena indicates the possibility that there were indigenous ceramists who specialized in the local production of Mycenaean ceramics during the Middle Bronze Age or the presence of Mycenaean settlers on the island (Tanasi 2020: 198).

The reconstruction of the anthropic landscape (Tilley 1994) is a complex operation that began with studying material circulation, settlement distribution, and possible traces of extractive activities. The focus was on analyzing the living conditions of prehistoric societies to understand the relationships between human communities and nature. The study moved from detailed analysis of individual sites to macro areas, viewing the landscape as a witness to the past and bearing traces of its history (Giannitrapani 2021: 487). The territory was seen as the result of continuous stratification throughout the ages, from ancient times to the present (Cambi 2015: 245). Studying material diffusion over millennia helped trace settlement distribution and interrelation based on periods, revealing a certain uniformity of thought behind settlement choices in the Milena territory. The presence of extractive activities confirmed the vital link between human beings and the territory's geomorphology, particularly in exploiting mineral resources. The abundant water presence likely encouraged agricultural settlement development and facilitated contact with other island areas through river valleys, stimulating trade activities.

Open problems and prospects for research, protection, and valorisation

The territory of Milena has been extensively studied, particularly in the analysis of ceramic materials and settlements. However, there has been a lack of analysis using maps to visualize and study archaeological contexts and the relation between the landscape and its settlements throughout the territory (Fairbairn 2017; Calderone and De Giorgio 2024). Past research showed that the distribution of sites in space was not random but instead responded to specific settlement needs. Additionally, the widespread circulation of materials from other areas of Sicily, particularly from the Aegean during the Middle Bronze Age, suggests that the territory of Milena may have been an essential hub for trade routes connecting the coasts of Palermo with those of Agrigento, as previously indicated by Vincenzo la Rosa and Sebastiano Tusa (Tusa 1999). While the consideration of the existence of trade routes through the internal areas of Sicily during prehistory is not a new endeavor, research in this area is at an impasse due to the lack of research in defining the ancient road axes from the Neolithic period to the Bronze Age. Furthermore, the absence of recent studies that use modern research approaches and tools such as Geographic Information Systems (GIS), remote sensing, and 3D visualization is an obstacle to advancing this research, despite their ability to greatly aid in the study of the topography of the area and their

potential in the aiding in the protection and valorization of archaeological heritage. Given the remote and fragile archaeological heritage of the region, given its morphology, their protection requires targeted and rapid interventions, which are only possible through digital solutions. Thus, GIS software and 3D models are especially well adapted to helping protect heritage sites in the area (Bernardini et alii 2021; Campana et alii 2014; Salzotti 2009).

The driving force behind all subsequent reasoning in this work will be the understanding of the importance of rediscovering the relationship between humans and the environment for comprehending the local historical process. Creating an updated catalog was necessary to have current data compared to the information from the 1990s. Conducting a census of all the archaeological sites in this vast rural territory was a complex task, requiring nearly three years of effort. The main issues in this area are the lack of public roads and signs leading to the archaeological sites. Many of these sites are on private land, accessible only by private roads. The frequent steep hills and valleys sometimes make it impossible to reach the archaeological areas by vehicle. As a result, reaching these areas requires traveling several kilometers on foot. Despite the challenges associated with pursuing this research, the use of the above-mentioned technologies made it possible to answer questions about the ancient landscape and its use by ancient peoples, leading to the identification of ancient communication routes that have been active since the Middle Neolithic. The result is a comprehensive work that describes the current state of the archaeological heritage, which will facilitate and expedite future research.

Chapter 3. Methods

Data collection in the field – The use and contribution of UAV technology and photogrammetry

The main focus of the fieldwork was to map all the archaeological areas within the territories of the municipalities of Milena, Campofranco, Mussomeli, and Sutera, with the ultimate goal of creating an archaeological map of the entire territory that includes all the archaeological evidence from prehistoric times to the Byzantine-Islamic period. This approach is possible thanks to the availability of new tools that were prohibitively expensive or unavailable even twenty years ago. New digital technologies, such as aerial and ground photogrammetry, have accelerated archaeological survey operations and provided new ways to represent data well-suited to operators' needs in the field (Cavaliere et alii 2009). Using drones allows for reconnaissance of large and difficult-to-reach areas, which can help identify underground structures noninvasively. Data acquired from drones can be used for predictive analyses, maps, and 3D models (Minucci 2018: 91-92).

The team conducted precise surveys using a DJI Phantom 4 PRO V2.0 drone to ensure the map was as detailed as possible. This allowed them to obtain accurate data that could be used to generate a comprehensive map of the area (Buscemi et alii 2014: 135-137). The dozens of drone flights carried out during archaeological surveys have produced significant photogrammetric material (Ferrari et alii 2015; Piani 2013: 6-10; Piccareta and Ceraudo 2000). The photogrammetric strips were set to capture photogrammetric image sets with 60% overlap and with a sidelap of 20% (Pulighe 2009: 18-19). Two flights were conducted for each overflight area. The first flight was carried out from a height of 40-75 meters, depending on weather conditions and visibility, to cover the area where archaeological finds were present and the surrounding context in order to facilitate analyses of the relationship between the archaeological remains themselves and their surroundings within the landscape. The second flight was carried out from a closer distance of 15-20 meters, depending on obstacles such as trees and buildings, to capture the archaeological remains in more detail. Flight plans were determined once the destinations were reached based on the terrain, weather, and available instruments (Minucci 2018: 65-96). One crucial factor to consider before making a drone flight is the availability of spare parts for the drone's batteries. Battery life affects the drone's autonomy during the flight. To ensure a successful flight, it's crucial to create well-planned flight schedules that balance the size of the area and the number of batteries available. The drone flights were successful for the most part, except in the rare cases when strong winds made taking aerial shots from higher altitudes difficult.

In some cases, drones were the only way to photograph rock-cut tombs from close range to obtain high-resolution images. For example, in the locality of Lantaro Minico (Fig. 9), in the municipal area of Mussomeli (CL), there is a group of 15 oven tombs located about a hundred meters above sea level that are only visible from afar. There being no path to reach the cliff where the tombs are, the only alternative was to use a drone to capture close-up and detailed views of the tombs from an ideal position.

The data collected during the survey, which includes aerial photographs and photogrammetric image sets was then used to create Digital Elevation Models (DEMs) and orthophotos. These DEMs and orthophotos have been inserted into a Geographic Information System (GIS) and used to create topographical drawings (Buscemi 2014 et alii: 149-153). Furthermore, most of the archaeological remains now lie completely submerged by mounds of earth and vegetation, which is why only with a view from above, together with multispectral analyses, was it possible to reveal their presence and physiognomy of the site. The survey activities also led to the identification of areas with prehistoric and protohistoric ceramics. Some areas were previously unreported, while others had unknown archaeological extent.



Figure 9. Tombs located on the rocky spur in Lantaro Minico (photograph by the author).

While drones are increasingly effective tools for capturing high-quality images (Di Pietro et alii 2021: 127-130; Minucci 2018), there are times when environmental factors can disrupt flight plans. In these cases, it is essential to prioritize safety and avoid any risks to people or the environment. This has happened several times in the hills and mountains of Campofranco and Milena, such as in the case of the Chiertàsi area of Campofranco (CL). During the survey of a steep hill called Mount Conca, which is known for the large number of Bronze Age ceramics on its surface, the rugged terrain, including brambles, other forms of vegetation, and strong winds, made surveying the area with a drone quite challenging. Despite these challenges, drone technology continues to improve and provide more precise and detailed data than traditional methods. Within a similar context, it would have been very complex to carry out topographical surveys using only traditional manual drawing tools, based on the use of pencils and glossy polyester sheets, which, although still useful today, would have significantly extended the time required for work (Montagnetti and Rosati 2019: 463-464). Furthermore, as already mentioned, the drone could not be used due to adverse conditions, it must be said that it was always in the same areas where it was impossible to linger or arrive to or even near to the archaeological sites due to excessively adverse conditions. Powerful gusts of wind, steep and slippery paths, the constant presence of brambles, and other forms of spontaneous vegetation made it sometimes impossible to create an adequate work plan.

Most tasks involved the post-processing activities of the photogrammetric images after the fieldwork (Zhang et alii 2019: 807-827). In some cases, adjusting the brightness and color contrast of the images was necessary to enable 3D photogrammetry programs to recognize and accept them. Using 3DF Zephyr software, we generated several 3D models of the terrain with photogrammetric image sets ranging in size from 180 to 800 photographs for more the largest reliefs. Initially, the images were aligned, and then point clouds were created, first sparse and then dense (Fig. 10). The software enabled the addition of ground control points to the sparse point cloud, consisting of specific targets placed on the ground or visible reference points the coordinates of which were collected in the field using GPS technologies. This step facilitated the correct positioning of the subsequent 3D model within a GIS. Finally, the polygonal mesh was generated and the texture was applied (Fig. 11).

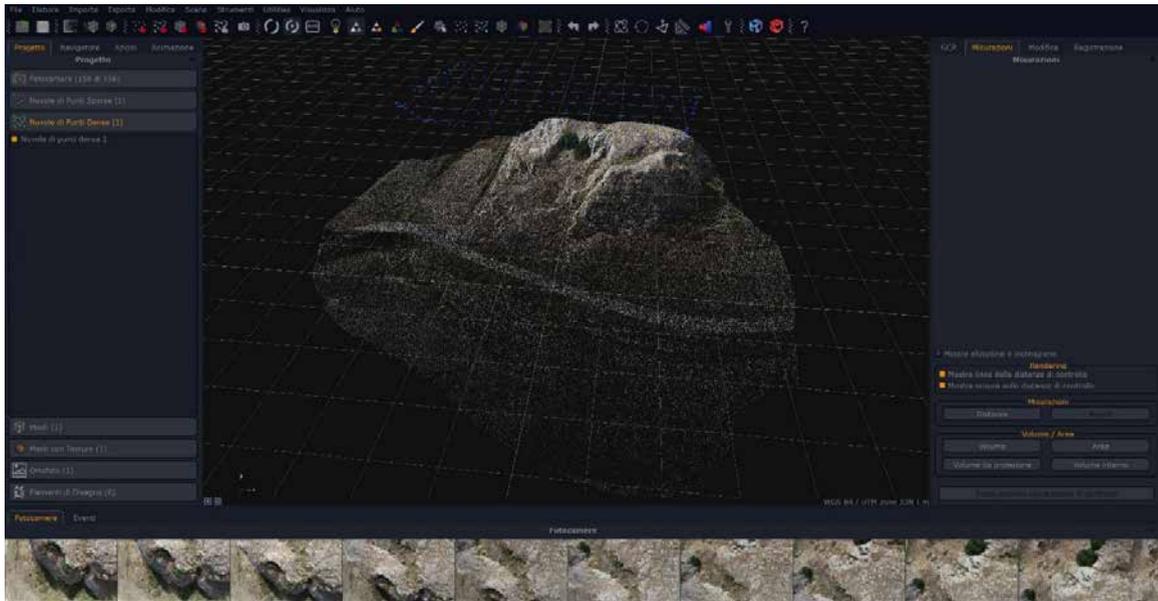


Figure 10. Dense point cloud of the aerial photogrammetric survey of a site made with 3DF Zephyr software.



Figure 11. Textured mesh of the aerial photogrammetric survey of a site made with 3DF Zephyr software.

The end product comprised highly detailed 3D models that accurately replicated the territory under survey. This allowed for precise examination of the connection between the archaeological contexts and the area's geomorphology. Additionally, a brief report was generated that shed light on the unstable conditions of the archaeological sites and the hills on which they rest. Using the same software mentioned above, the georeferenced orthophotos (Fig. 13) and DEM (Fig. 12) (Floris et alii 2017) were inserted into a GIS platform, which will be explicitly discussed in the following paragraph.

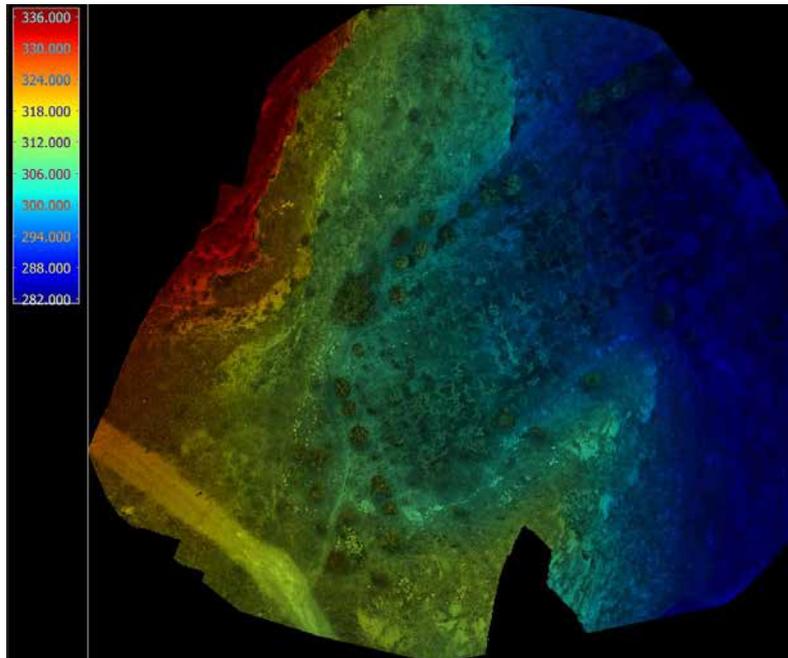


Figure 12. The DEM of Monte Conca (Milena-CL) created with the 3D model resulting from aerial photogrammetry images from a drone and processed with the 3DF Zephyr software.



Figure 13. Orthophoto processed with the 3DF Zephyr software and extrapolated from the three-dimensional model created with aerial photogrammetric image sets collected by a drone in the the locality of Rocca Aquilia (Milena-CL).

The terrestrial photogrammetric technique has also helped create 3D models, generate topographical surveys, and produce three-dimensional reconstructions of structures like rock-cut tombs. In this case, a Canon EOS 1300D reflex camera with a Sigma 17-70 mm, 1:2.8-4 lens was used, as it captures high-quality images. From a theoretical point of view, the principles that govern the functioning of camera photogrammetry (Fiorini 2012: 213-227; Putzolu and Vincenzutto 2013: 355-370) are the same as those for drone photogrammetry. Similar software and methods were used to process the data. Photogrammetric image sets were processed in 3DF Zephyr by aligning the images, generating sparse and dense point clouds, and processing the meshes with textures. The program created high-quality 3D models that accurately replicated the archaeological contexts being surveyed. Creating 3D reconstructions of

ancient tombs also allows us to study their state of conservation. Ideally, this process should be repeated periodically to precisely monitor the degree of erosion to which the tombs are subjected. Exposure to wind and adverse weather conditions causes abrasion of both the internal and external surfaces, making it worthwhile to study the speed at which the phenomenon is or is not eroding the monuments.

As a service to the local Antiquarium, 12 3D models of archaeological artifacts from the Milena Antiquarium were created during the larger survey project. The generation of the 3D models of the Antiquarium's collection did not serve the same purpose of topographical surveys and tomb models, but was focused rather on capturing ceramic materials that represented the various prehistoric phases in the area, with particular attention to the most intact and characteristic materials.

Creating a 3D model from an artifact also requires precision and patience. The shape of an artifact, especially that of prehistoric vessels, can cause challenges for the photography and processing phases. Vessels can be overly irregular or excessively smooth and homogeneous with few discerning features, characteristics can make it difficult for the camera to capture images without too many shadows and or difficult for the software to match images. This can result in models with holes that need to be closed with other software (Lo Brutto and Spera 2010: 1177-1180). While one can capture more images to avoid holes appearing within the 3D models, it is also important to strike a balance between the number of images collected and the file size to be processed. In some cases, delicate artifacts were avoided to prevent damage.

The 3D scanning of the objects was carried out within the warehouses of the Antiquarium, which generated difficulties in lighting conditions. In order to create more ideal lighting conditions, a photography 'set' was built that suitable for our work needs. First, we took photos of the vases on a base placed under a homogeneous light source. Then, we took photogrammetric shots by making regular 360° movements around the artifact. We took several shots from the same point but from different angles to obtain the most accurate rendering possible. Some vases had particularly irregular shapes, which required us to take a high number of photos, resulting in the creation of very heavy datasets, in order to capture the object from as many angles as possible. Depending on the complexity and size of the object, photogrammetric images sets consisted of between 250 and 500 photographs for each vase. The final result (Fig. 14) was a faithful reproduction of the vases made available to the Antiquarium in their shape and decorative motifs in their three-dimensional version. Nevertheless, voids were identified in

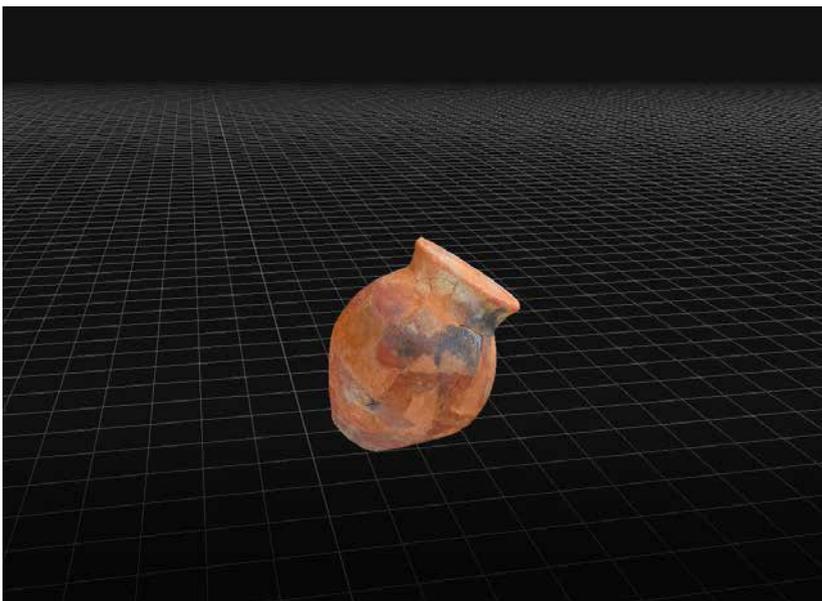


Figure 14. Finished 3D model, processed with 3DF Zephyr software. Courtesy of the Regional Department of Cultural Heritage and Sicilian Identity - Soprintendenza BB. CC. AA of Caltanissetta

the point clouds and subsequent meshes of some objects. These voids mainly resulted from the object's shape, which created important shadow points that the lighting set up could not dissolve, and thus created issues in the processing of the 3D models by drawing from the datasets alone. In the future, digitizing all the artifacts within the Antiquarium's display cases could further increase the collection's remote accessibility.

The use of GIS applications

The main goal was to accurately identify the archaeological areas and their relationship with the landscape. Therefore, including the detailed orthophotos produced by the 3D models into a GIS, and working in a GIS environment to compare the drone surveys with existing maps was a crucial part of the project. By creating GIS systems, we were able to manage topographical, cartographic, and spatial information of the archaeological evidence present in an area, as well as conduct further analysis on digital elevation models (DEMs) and study the levels of intervisibility between the surveys distributed in the research area (Acconcia and Ferreri 2016: 179-188; Salzotti 2009: 1-26). Like with the drone photogrammetry and processing, an important part of the method was to create and use a precise and interconnected workflow for working within the GIS. To begin with, the orthophotos were positioned on the regional technical cartography (CTR) at a scale of 1:10,000. This was done for the territories of the municipalities of Milena, Campofranco, Sutera, Montedoro, and Mussomeli, which are all located within the borders of the Regional Province of Caltanissetta. The open-source software QGIS was used for this purpose. Using GIS to vectorize the data from orthophotos made it possible to analyze the different natural landscape elements and their geomorphological characteristics with precision. This allowed for detailed observation and study of each feature of the territory to rediscover the role that each one played concerning all the archaeological evidence. The data was also analyzed to understand better the relationship between the natural landscape and the archaeological evidence (Russo 2018: 375-389). More in detail, vector representation was used to depict landscape elements and areas with archaeological remains. Through this research, maps were created in various scales to highlight the shape of the territory, connecting geomorphological data with archaeological evidence.

The main idea of this research is that agricultural and livestock farming activities involve making opposite choices, which leads human communities to select a territory based on geomorphological characteristics that allow these activities to occur. Defensive needs also play a role in choosing a specific type of area, leading communities to settle in one region or another. The research demonstrated a high frequency of archaeological sites in places with specific geographical characteristics. An ample space has been reserved for the 'reports' layer within the GIS. This layer contains vectors that indicate areas reported in the past, even if they were never archaeologically excavated, and others that are still unpublished today. These reports cover sites that belonging to the prehistoric, Roman, and medieval periods. If these sites are not detailed on paper, they risk being forgotten, making it difficult for future scholars to conduct research on a large and complex territory. Therefore, it is essential to consider the GIS portal as the definitive 'container' of reports to transmit to current and future scholars. In addition to traditional approaches, other archaeological contexts were identified using more complex and modern techniques, such as remote sensing. Also, we used QGIS software to analyze the area's topography in detail. For example, LCP landscape analysis is a crucial GIS tool for studying an area's road systems. The 'least cost path' (LCP) calculates the most efficient and convenient itineraries between two points based on terrain characteristics (Alberti 2017; Alberti et alii 2022; Tang and Dou 2023). After conducting an LCP GIS analysis, for example, it was possible to determine that the best North-South routeways through Sicily are located near the Gallo d'Oro River and in the Municipality of Milena (Calderone 2024). This shows how the project has moved from conventional methods to using new technologies to support and continue the research initiated in the field.

Use of satellite remote sensing

A GIS portal was developed to link the archaeological sites surveyed during the project with geomorphological features of the territory of Milena. The analysis of archaeological sites within the landscape has shown a deep connection between humans and the land of Milena over thousands of years (Calderone 2020: 75-88; Calderone 2024). Further information is required, however, to understand the settlement patterns of the communities that inhabited a vast area from the Middle Neolithic until the arrival of the Greeks in the area in the 6th-5th century B.C. and how it developed then through the Hellenistic period (De Miro 1962: 150-151; Spatafora 2007: 53). Ideally, new archaeological excavations would be shed light on these questions. However, less than half of the numerous prehistoric settlements surveyed have been studied through methodical excavation. Most of the settlements remain underground, and in some cases, over 25 years have passed since their identification, allowing layers of earth and vegetation to cover the remains. In other instances, ceramic fragments on the surface may not be in the exact location as the prehistoric huts themselves due to water and landslides. This makes it difficult, if not impossible, to identify the remains of ancient settlements, especially considering that some of the contexts under study are distributed over several hectares. An interdisciplinary team had to be formed to study the Milena territory thoroughly. This team (Brogiolo 2017) would bring together different professionals and approaches to the subject to overcome the challenges. As a result, the Civil Engineering and Architecture department of the University of Catania, represented by Giuseppe Mussumeci and Michele Mangiameli, was brought on board to assist with data collection using various tools, including satellite remote sensing. By doing so, the team could identify new sites previously obscured by meters of earth and vegetation, which would have been impossible to observe with the naked eye.

Application of multispectral remote sensing

The work in collaboration with the engineers from the Civil Engineering and Architecture department was published in 2022 (Calderone et alii 2022). This research utilized a postdictive and predictive approach, utilizing multispectral remote sensing data to identify new archaeological evidence. The study employed Sentinel-2 multispectral images, which consist of thirteen bands with spatial resolutions between 10 and 60 meters. This analysis method has been previously applied in archaeological research with satisfactory outcomes (Agapiou 2014) (Fig. 15). QGIS software was used to process the Sentinel 2 data, with the use of the Semi-Automatic Classification Plugin (SCP) option. The SCP plugin allows the downloading of remotely sensed images, in this case, the Sentinel-2 dataset, in a way that post-processing phases can be applied to perform supervised classification on the dataset (Mangiameli 2018). Using the SCP plugin, the team acquired Sentinel-2 images captured between April 3 and September 30, 2020, with a maximum cloud cover of 10%. A procedure was then adopted to identify archaeological characteristics that involve using multispectral and panchromatic images that are geometrically and radiometrically corrected, including the pre-processing of satellite imagery to improve their appearance and make it easier to identify archaeological features and markers. This pre-processing involves applying pansharpening techniques via the available Orfeo Toolbox plugin in QGIS. The research of Gennaro and Mangiameli (Gennaro et alii in 2019; Mangiameli et alii in 2020) provides further information on this pre-processing.

The SCP plugin uses the False Color Composite (FCC) technique to highlight specific information from images to assign RGB colors to three different electromagnetic spectrum bands (Alexakis et alii 2009; Masini et alii 2018). The output image resulting from the FCC data fusion was then used as input for the classification algorithm, which was also implemented in the SCP plugin. The emerging characteristics of the chosen area were selected as the Region Of Interest (ROI) for the algorithm's training. This methodology was applied to study two specific areas: Munstansello and Cimicia-Finaita (Fig. 16), resulting

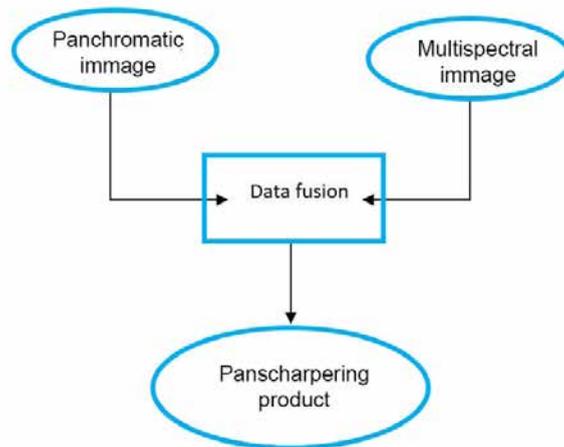


Figure 15. Flowchart of the image preprocessing.

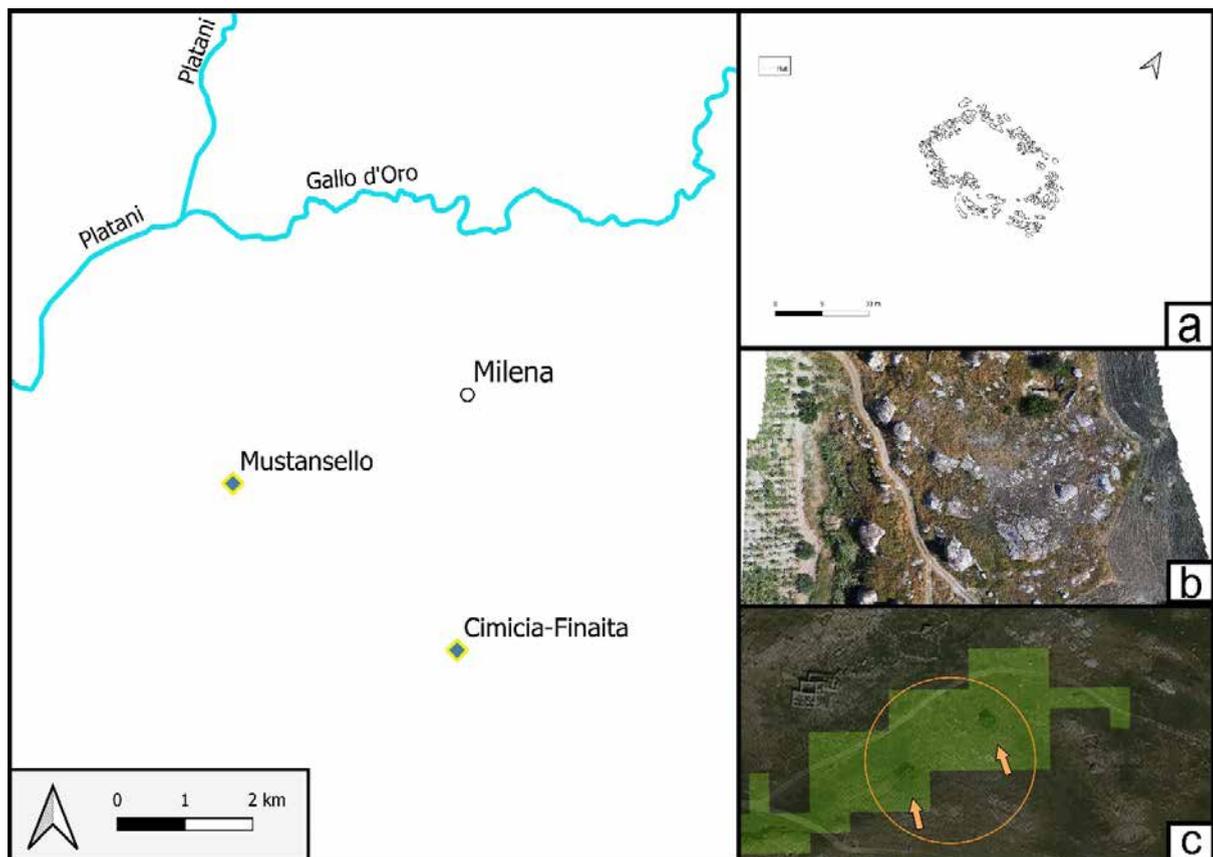


Figure 16. Archaeological areas of Mustansello and Cimicia-Finaita: a) the hut identified in the Cimicia-Finaita area, b) the orthophoto of the Cimicia-Finaita archaeological site captured by drone aerial photography, c) the area of Mustansello, as seen through a multispectral filter, revealing traces of prehistoric archaeological remains.

in the identification of settlements within the area. The settlements of Mustansello and Cimicia-Finaita were discovered through 3D drone surveys and remote sensing techniques. Without multispectral filters, the search for these sites would have taken much longer, requiring detailed analysis of all the dozens of surveyed sites. However, through remote sensing, we were able to narrow down the search area and precisely locate the remains of huts, as later confirmed by photogrammetric surveys. The Mustansello and Cimicia-Finaita localities are good examples of how multispectral filters significantly shortened the search time and helped us pinpoint the exact location of the huts.

The extensive territory of the Milena municipality is challenging to access, making it crucial to act quickly to prevent neglect and natural erosion from destroying its archaeological sites. The successful collaboration between remote sensing and archaeology proves that interdisciplinary collaboration is essential for obtaining accurate results. GIS portals also played a crucial role in achieving these results and contributed to heritage protection.

Chapter 4. Discussion of the Data, Prehistoric Routeways, and their Relationship with Historical Roads

By examining the ‘long history’ of a territory, we can observe how settlement patterns have evolved in the landscape by identifying sites that have led over the centuries to overlapping multiple archaeological contexts (Brancato 2020: 56). Between the villages of Grotte (AG) and Milena, the area is rich in both Roman (Mandrizzato 1997: 257-262) and medieval (La Rosa 1997: 269-276) archaeological sites. Along the main stops of the Roman-medieval road system, however, there is a good deal of evidence of prehistoric frequentation of the area dating back to the Middle Neolithic, indicating the need to verify the hypothesis that the Roman-medieval road system, or one very similar to it, could have been used for much longer (Calderone 2020; 2022; 2024). Using the GIS platform allowed for the simultaneous observation of various variables and characteristics and the ability to make comparisons based on different chronological phases.

The development of the GIS system allowed for the creation of a variety of thematic maps that were used to compare different archaeological sites and assess the potential level of interaction between the individual settlements studied. By mapping out the archaeological sites that have been published previously, we could consider the area’s geography and the position of a well-documented medieval route from past studies. Aggregating past studies into a single catalog of archaeological sites confirms the trend that medieval archaeological sites often overlap with prehistoric settlements. For example, the sites of Monte Conca, Amorella (cat. 23), Zellante (cat. 15), and Rocca Aquilia I (cat. 5) (Arcifa 1997; Arcifa and Tomasello 2005; La Rosa 1997f: 153; see Appendix for catalogue). This overlap likely occurs because the areas where prehistoric settlements are located are strategically positioned to be able to observe and control the valleys and were then later crossed by roads during the medieval period (Calderone 2024).

The reconstruction of the landscape in a GIS enabled the reconstruction of the viability of the area throughout different periods and hypothetical routes of prehistoric origin. Through the analysis of specially produced maps that show the flow of the rivers, the distribution of the mountains, the position of ancient settlements, necropolises, and traces of ancient routes, it was possible to isolate spaces within which prehistoric routes could have existed. The most significant pattern was the frequency with which prehistoric settlements appeared near medieval routeways, suggesting that these areas were also places of transit during prehistory. The GIS served to demonstrate that in fact these areas were the simplest to cross, from a geomorphological point of view, if moving in a north/south direction on foot. The pathways align with the trend of the mountain ridges and hills, avoiding fording the most dangerous rivers, such as the Platani, and utilizing the small valleys located at the foot of the most imposing mountains in the territory of Milena.

The decision to travel mostly on foot between the archaeological sites led to significant findings. It became apparent that some landscape regions were impassable due to natural conditions, particularly during autumn to early spring, when streams and rivers posed obstacles, especially on rainy days. However, by walking through the valleys and dirt roads, a report was compiled to identify areas that could still be traversed in winter, albeit with some difficulty. This raises the question of whether the use of the theorems and ‘laws’ advocated by Binford and the New Archaeology is suitable for interpreting a context that remains predominantly rural today (Binford 1972: 78-100; 1989).

Using an overly rigid approach in this case would not be productive. The archaeological evidence in the area should not be solely interpreted as a result of efforts to adapt to the natural environment. It is essential, whenever feasible, to delve into the mental attitudes that drove the behavior in a specific archaeological site. This involves studying and comprehending the attitudes, mindset, and various ways people of that particular cultural context perceive reality (Giannichedda 2016: 104). However, we cannot ignore that the generalizations derived from field data can also be considered valid. The fact that some generalizations may seem obvious does not make them irrelevant, especially since they are often the only ones that can be verified (Giannichedda 2016: 85). In our case, the obviousness of certain factors, such as the impact of impassable rivers on the practicality of specific areas, becomes the only verifiable factor where there are no other tangible traces of ancient prehistoric routes. The same applies to the presence of settlements located near hills, which provide a vantage point over areas that are accessible year-round. The frequency and incidence of these variables allow us to imagine an exact pattern, which, until proven otherwise, would be illogical to consider random. In this case, the generalization takes on a probabilistic value capable of relating factors such as mountains, rivers, settlements, and passable valleys. This relationship can no longer be considered casual, justifying the presence of a road as plausible. Therefore, it could be helpful to take inspiration from New Archeology regarding the procedural approach and theories on environmental determinism (Harris 1971). By simplifying the discussion about direct experiences in Milena's territory and considering both its potential and critical issues, it becomes evident that even today, the people living in these areas often have to adapt to their surroundings to carry out their activities. It is no coincidence that an increasing body of research highlights how geological factors have influenced the choice of places to live throughout history (Forciniti and Salerno 2003: 15-18; Quilici 2015: 149-162). From a methodological standpoint, there has been a well-defined path for several years, connecting the archaeological world with geology in a multidisciplinary climate. This has led to environmental geology, a discipline studying the interactions between human activities and the physical environment (Laureti 2019: 685). This interdisciplinary approach helps evaluate how the environment has influenced human choices throughout history and how human presence has shaped the landscape. Ultimately, the goal is to define the evolution of a territory in all its aspects (Tarlano 2014: 285-296).

Throughout this work, we will examine all the territory's defining factors, starting from its geomorphological elements to the dissemination of products made by human communities that were different from those previously occupying the area. These imported products demonstrate the existence of exchange and relationship activities among the region's communities. Considering that it is challenging to define the dynamics and paths of a commercial network and its connected pathways network without written sources, we can begin with the assumption that the material culture traces across a territory can at least help in outlining a general framework (Tanasi and Vella 2014: 67-68) and in classifying the main areas.

Indeed, if medieval sites were located near certain valleys and routeways in order to monitor them better, prehistoric sites might have served the same function near much older routes. If prehistoric sites are located in the same areas as medieval ones for controlling passes, and if these areas largely coincide with the medieval road network, it is reasonable to hypothesize that prehistoric routes also pass through them (Calderone 2024). The analogy between the settlement patterns of in the medieval and prehistoric periods is particularly compelling when one considers that the territory's difficult hills and mountains that characterize its geomorphology can only be crossed through specific passages along certain routes (Fig. 17) (Arcifa 1997: 283-288).

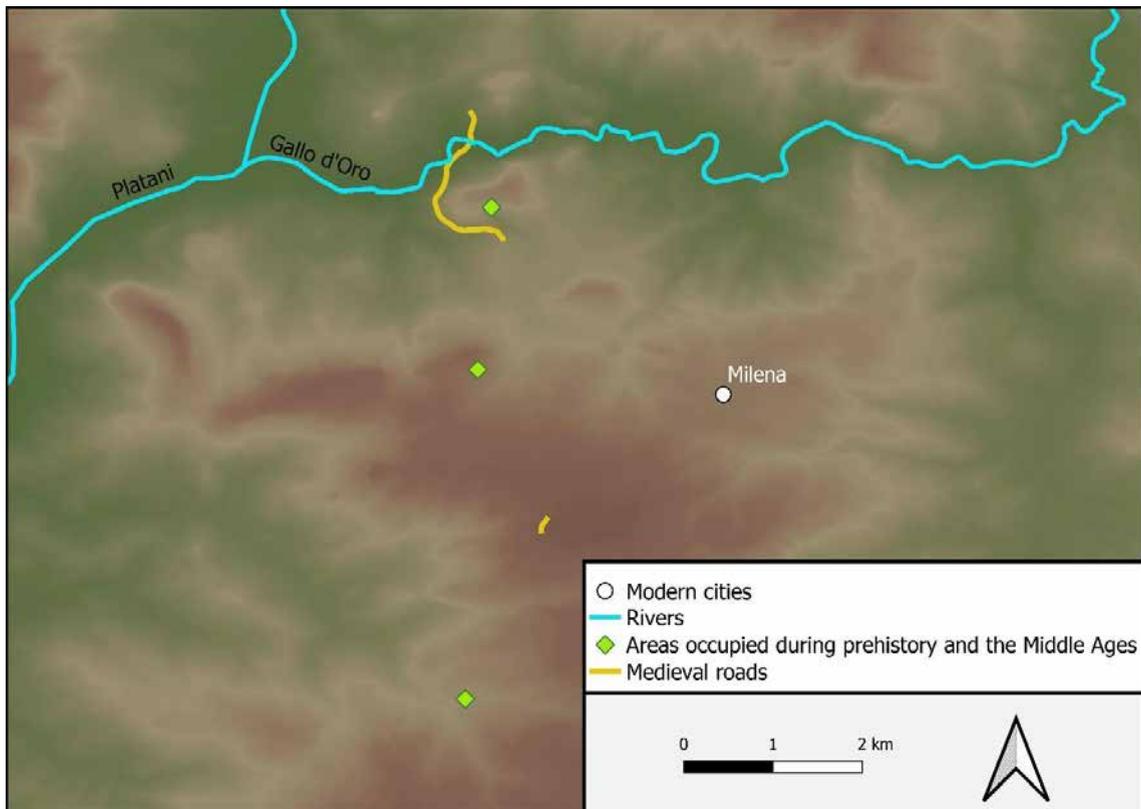


Figure 17. Positions of overlapping medieval and prehistoric archaeological sites around the medieval road system on the colorized version of the DEM from Tinitaly DEM (made available by the Sezione di Pisa Istituto Italiano di Geofisica e Vulcanologia; Tarquini et alii 2007; 2023).

However, additional data are needed to support these observations, which can be found from the case study of the Magna Via Francigena. The Magna Via Francigena is a medieval pilgrimage route that connects Palermo to Agrigento and is a historic regularly traveled by hundreds of pilgrims on foot to this day through the inland areas of Sicily.³ The road axis eventually passes through the municipality of Milena and near its archaeological areas, in theory allowing pilgrims to visit prehistoric sites. Unfortunately, most of these sites are closed to the public because they are on private land or are otherwise unusable.

Some scholars think that the modern pilgrimage route is in fact a medieval road known as the Sutera-Grotte (Arcifa 1997: 283-288; Comunale 2017: 73-87; Rizzo 2004). The Sutera-Grotte route also connected the coasts of Palermo to those of Agrigento, passing through the medieval village of Castronovo (PA) and then proceeding south towards the center of Sutera, Milocca, and the towns of Racalmuto (AG) and Grotte (AG) (Arcifa 2005; Arcifa and Tomasello 2005;). The road crossed the current municipal territory of Milena and the localities of Monte Conca (Cat. 19-20), Amorella (Cat. 22-23), and Zellante (Cat. 15), where many prehistoric and medieval settlement sites overlapped. Despite being a longer route overall, this road would have been important because it allowed a more direct and safe passage between Palermo and Agrigento by crossing the Gallo d'Oro river instead of the Platani river. The question of crossing the Platani, located further south than the Gallo d'Oro, has remained relevant even in modern times. The Platani is the largest river in southern Sicily, and its crossing can be treacherous due to elevated discharge in the spring months. The failed attempt to build a bridge at Passo Funnuto in the mid-19th century, in which a bridge built to cross the Platani river in 1863 collapsed just ten years

³ Official site: <http://www.viefrancigenedisicilia.it/>

later, demonstrated the complexity of its crossing (Arcifa 1996: 286). So, the medieval road to Grotte crossed the Gallo d'Oro river near Mount Conca, where there are numerous prehistoric archaeological sites and remains of a medieval fortification (Arcifa 1996: 287; Calderone 2020; 2024). Furthermore, it is possible that this medieval road followed the Greco-Roman road network between Palermo and Agrigento (Uggeri 2004: 13-19, 97-116). Previous studies identified communication routes connecting the island's central-northern areas with the Sicani Mountains, concentrating primarily on the regions close to Milena (Arcifa 2005: 31-33; Uggeri 2004: 106-108).

Middle Neolithic Period to the Early Copper Age

The research begins with the hypothesis that a series of paths connecting the northern and southern coasts of the island that pass through the territories of Campofranco and Milena may exist (Calderone 2020: 75-88). This area is located between the territories of the municipalities of Sutera, Campofranco, Milena, Mussumeli, and Montedoro (CL) in the central-southern part of Sicily. The presence of the Sicani mountains and the Platani River characterizes the area. One of its most essential tributaries is the Gallo d'Oro River, which flows near hills that almost form an ideal barrier around these territories in the direction of Milena (Fig. 18).

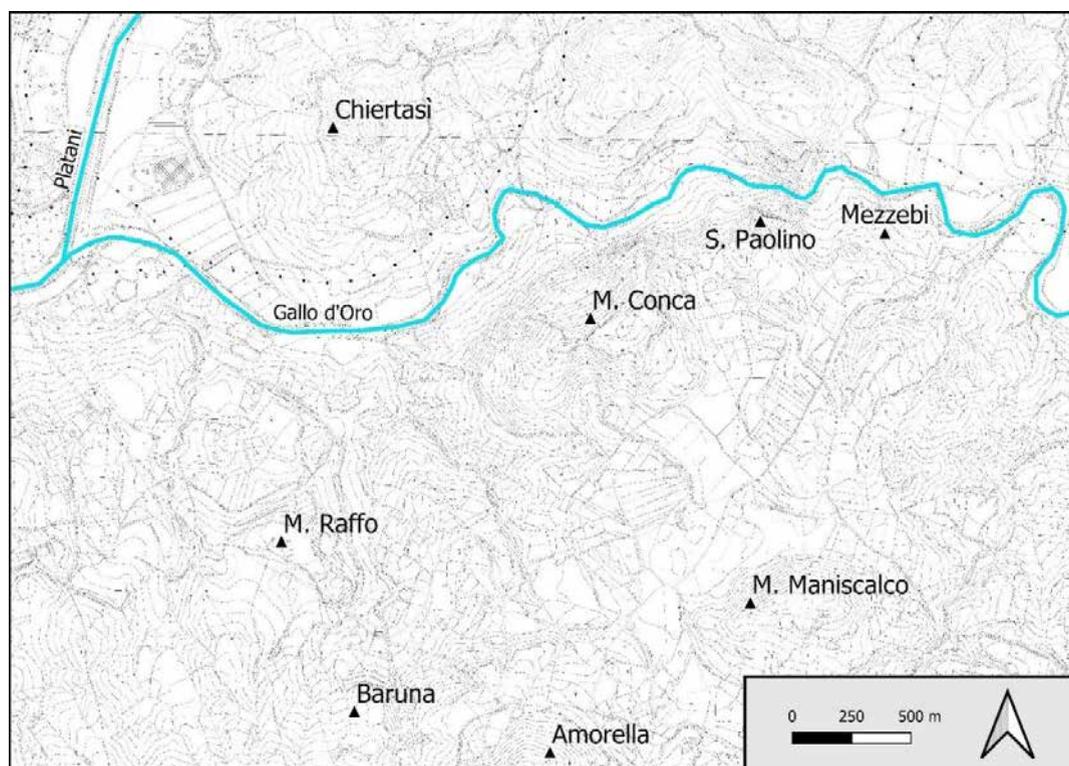


Figure 18. Territory of the municipality of Milena: Relationship between the River Gallo d'Oro and the principal mountain peaks on the Carta Tecnica Regionale (Regione Sicilia).

In more detail, proceeding from the North, the first sites are Mezzebi (Cat. 3), San Paolino (Cat. 1), and Monte Conca (Zubbio locality, Cat. 19) (Fig. 19). The area where they are located is still very fertile today and has partly become a nature reserve. Likely, the abundance of water provided by the Platani and especially by the Gallo d'Oro rivers contributed to human presence in these sites over the millennia. These sites show human activity dating back to the Middle Neolithic period (Guzzone 1994: 305-313).

Specifically, at the Mezzebi site, an artificial ditch containing tools and obsidian splinters has been discovered. Traces of a hut from the end of the Copper Age and the early Bronze Age have also been found in the same area (Privitera 1997: 87-89). Mezzebi prehistoric settlement is situated on a low limestone hill near the southern bank of the Gallo d'Oro river.

Archaeological excavations uncovered a hut with a diameter of between 4 and 5 meters in which were found ceramic sherds dateable to the end of the Copper Age and the beginning of the Bronze Age; Castelluccian fragments and later ceramics of the Campaniform type were also found in the same area (Privitera 1997: 85). A nearby Neolithic artificial ditch represented the initial phase of habitation in the region, which was then abandoned for an extended period, at least until the Ancient Bronze Age or possibly shortly before.

Proceeding south, about 3 km from Zubbio in Monte Conca, one reaches Pizzo Menta (Cat. 4), a hill used for intensive agricultural activities today. Remains of a settlement were discovered here in the 1990s (Guzzone 1994: 305-313). Approximately 750m further south is the site of Serra del Palco (Cat. 24), from which Pizzo Menta is perfectly visible. Serra del Palco is a mountain positioned dominantly over a broad valley (Fig. 19) near Monte Campanella (Cat. 21), the highest mountain in the territory, itself located approximately 4.5 km from the Platani River.

Evidence of habitation is well-documented in correspondence with a large plateau called Mandria, situated 520 m above sea level. This area was extensively used as a pasture for animals until the last century, as evidenced by the ruins of a large stone sheepfold. Several meters from the sheepfold, remnants of numerous huts were discovered dating back to the Neolithic period. The oldest pottery found belonged to the Stentinello *facies*, from the early Middle Neolithic (Guzzone 1994: 305-313). The six life phases of the main hut, the most monumental of which pertains to the apsidal building, demonstrate the site's significance (La Rosa 1985: 475-482).

The Zellante area (Cat. 15), located near the Coda di Volpe stream, shows signs of frequent human activity. There are large quantities of ceramics on the surface and rock-cut tombs, some of which are now hidden by vegetation (Guzzone 1994: 305-313). This area is mainly used for agriculture and is situated behind Serra del Palco in the south.

The archaeological contexts described above have several common factors. They all show signs of frequentation and activity, especially during the transition from the Neolithic period to the Copper Age. This is evidenced by the significant quantity of ceramic materials of the San Cono-Piano Notaro and Serrafferlicchio styles found in these contexts (Maniscalco 1997: 63-72). The number of occupied sites increased during the more recent period and began to be distributed more systematically across the territory. Around the beginning of the Copper Age, sites such as Rocca Amorella, Monte Grande (Cat. 8), and Mustansello (Cat. 12) were added in addition to the settlements established during the Neolithic period but followed a trend of being slightly more challenging to access than those established in the Neolithic period.

Additionally, the use of natural caves also increased during this period, possibly due to their use as places of worship, as some contained underground vapors (Maniscalco 2007: 181-182). In the subsequent period, known as the Malpasso *facies*, there was consistent use of caves, as evidenced by the discoveries at Fontanazza Monte Grande (Milena) (Cat. 11). It was during this time that the practice of burying the deceased in large caves began (Maniscalco and Cazzella 2012: 65).

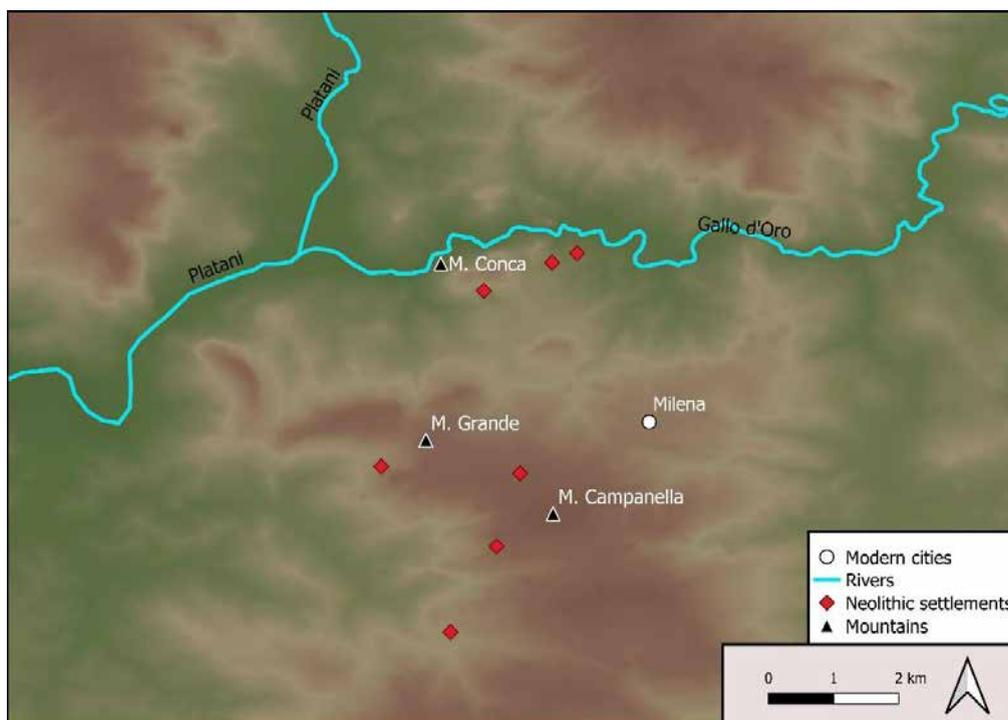


Figure 19. Distribution of Neolithic settlements along the territory of Milena in relation to the mountain ranges and the flow of rivers and streams on a colorized version of the DEM from Tinitaly DEM (made available by the Sezione di Pisa Istituto Italiano di Geofisica e Vulcanologia; Tarquini et alii 2007; 2023).

The data analysis does not show a clear separation between the end of the Neolithic and the beginning of the Copper Age. This is supported by the stratigraphies documented at Pizzo Menta and Serra del Palco (La Rosa 1994: 289-295), indicating significant continuity from the Middle Neolithic through the entirety of the Copper Age. An overlap of the Eneolithic huts with the Neolithic ones illustrates this. The arrangement and succession of the mentioned sites of the Middle Neolithic period were likely not random. The San Paolino and Conca mountains are essential to focus on, as they are close to the Gallo d'Oro river. The river is sometimes easy to cross, especially during the summer, despite moderate water throughout the year. When traveling from North to South, crossing the Gallo d'Oro River would be the most obvious choice for any traveler, rather than the Platani River, even if it means slightly lengthening the route (Arcifa 2005: 33). Pilgrims still make similar choices today, such as those who travel the 'Magna Via Francigena' on foot. On the journey from Castronovo to Sutera and then to Campofranco, they must divert their route towards the Gallo d'Oro to cross the river near the collapsed ruins of the so-called Roman bridge (Fig. 20), located at the foot of Monte Conca. After crossing the river obstacle, the pilgrims can proceed towards Milena. However, fording the river can be challenging during the rainy seasons between autumn and spring despite being one of the most accessible crossings. The route likely corresponds to the historical road from Sutera to Grotte during the medieval period (Arcifa 1997: 283-288) (Fig. 21). The passage of centuries and the increasing human impact on the land have not changed the fact that those traveling on foot cannot ignore the routes the land's shape makes accessible. After crossing the Gallo d'Oro and passing the mountainous Conca and San Paolino ranges, a broad and easy-to-follow path opens up, skirting the slopes of Mount Maniscalco and Rocca Amorella (Fig. 22).

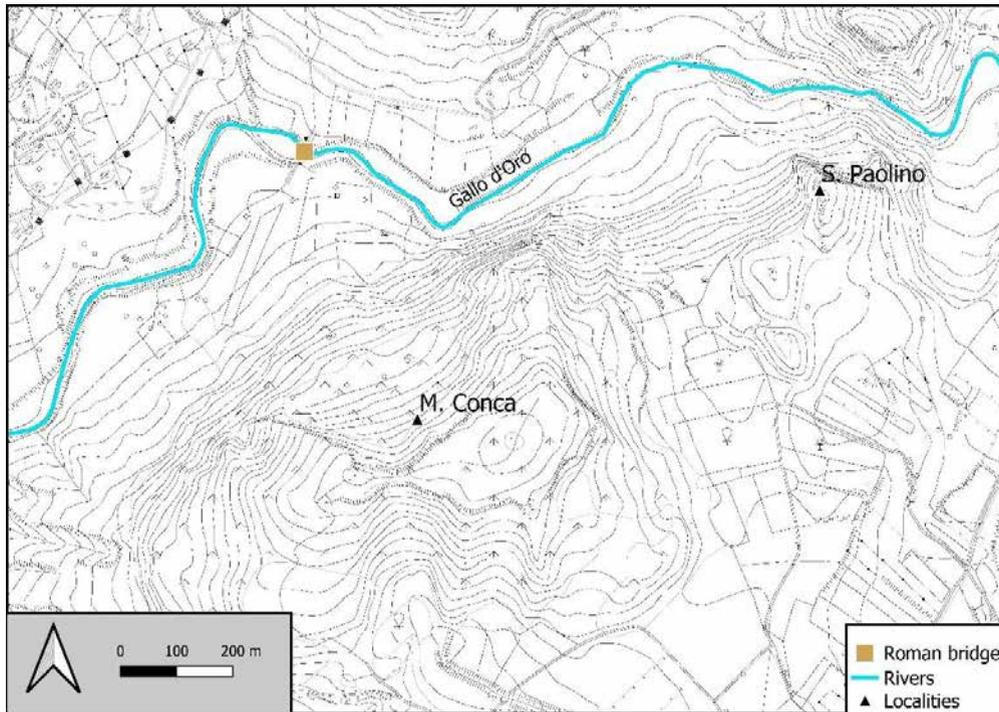


Figure 20. Positioning of the ruins of the so-called 'Roman bridge' over the Carta Tecnica Regionale (Regione Sicilia).

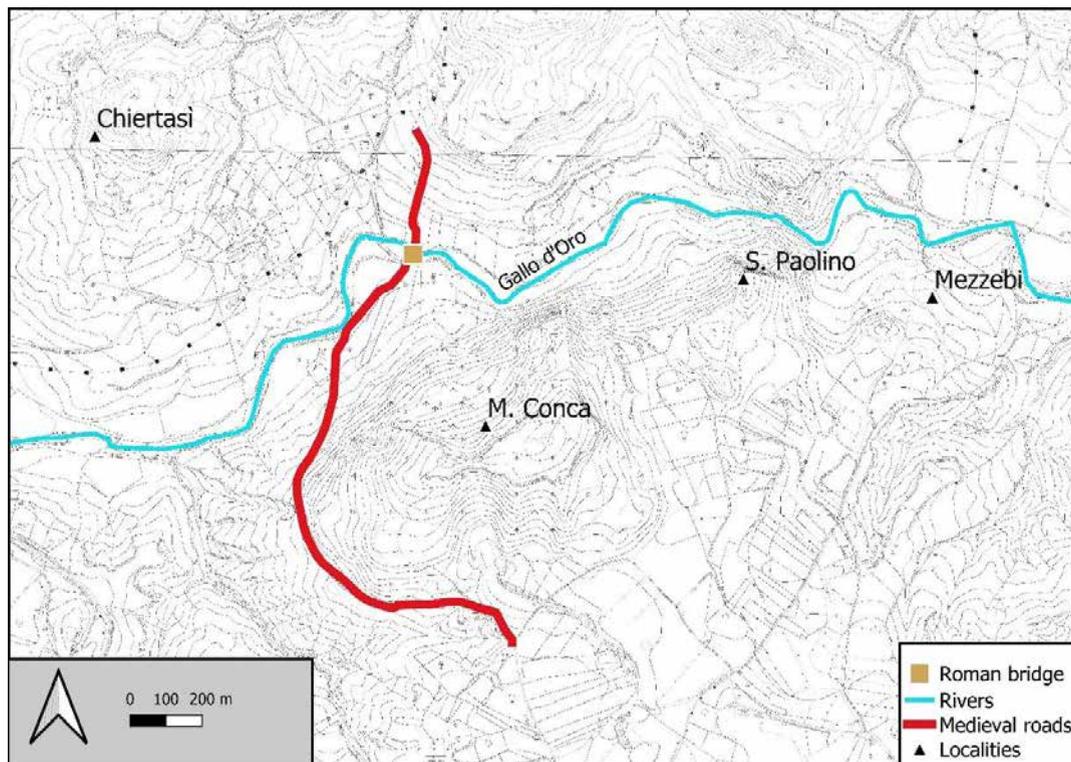


Figure 21. Monte Conca, reconstruction of the medieval road route in correspondence with the so-called Roman bridge over the Carta Tecnica Regionale (Regione Sicilia).

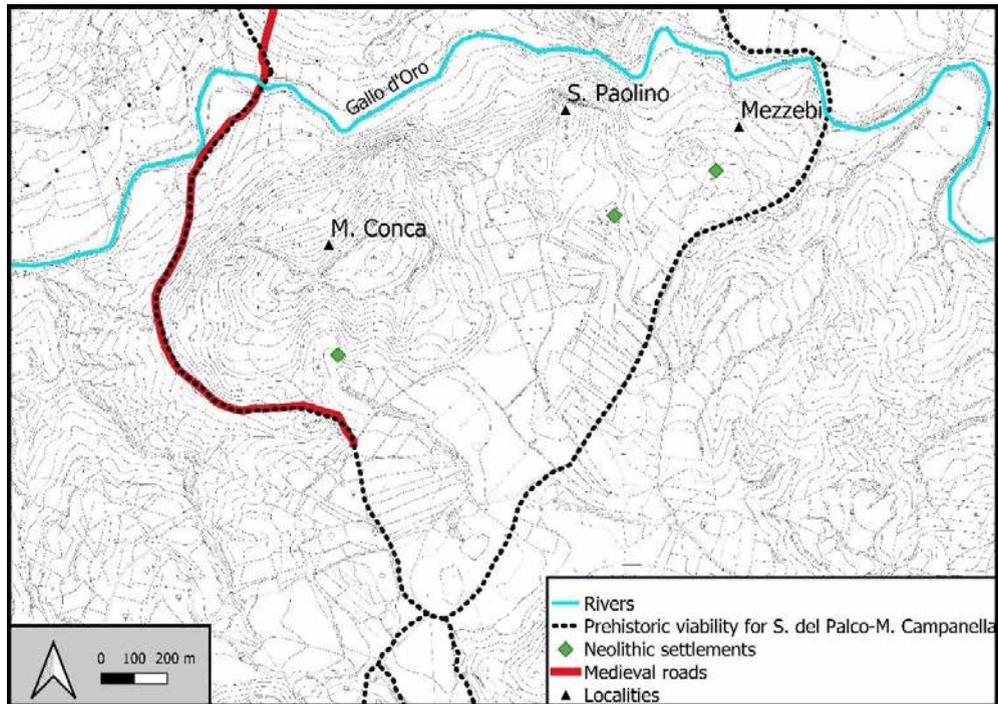


Figure 22. The reconstructive hypothesis of the location of prehistoric routes, superimposed on the medieval roads around the Conca and Paolino mountains, subsequently developed in a southerly direction, reaching the bottleneck between Monte Maniscalco and Rocca Amorella over the Carta Tecnica Regionale (Regione Sicilia).

The traveler will encounter a choice of routes leading in two main directions: one towards Monte Grande and Sant'Angelo Muxaro following the Platani watercourse, and the other towards Grotte and Agrigento. The second route passes through the area of Serra del Palco, where another section of a medieval route has been identified that connects Serra del Palco with Mount Campanella, and then continues towards Zellante (Arcifa 1997: 283-288; Calderone 2020; 2024) (Fig. 23).

Pizzo Menta is also included in our reconstruction due to its strategic position, just over 1 km north of Serra del Palco Mandria. From its summit, it is possible to oversee the route towards Serra del Palco and the road to Monte Grande, where signs of Neolithic occupation have been found (Maniscalco 2007). Both settlements are perfectly visible from Pizzo Menta and vice versa. This intervisibility is a crucial aspect of the study. Mezzebi, San Paolino, and Monte Conca are all visible from each other. From Monte Conca, it is possible to oversee the entire stretch of land leading to the confluence with the Platani River, which disappears shortly after behind Rocca Grande. Even from the summit of San Paolino, the long course of the Gallo d'Oro heading East, specifically towards Mount Iannico, is observable and controllable. Furthermore, Pizzo Menta, Monte Campanella, and Serra del Palco are perfectly visible from each other. From Serra del Palco, the broad valley that opens toward Zellante and the town of Grotte, further South, can be observed. The visibility among the inhabited areas suggests that intervisibility was part of the particular logic that governed the choice of settlement locations.

Another aspect regarding the placement of settlements mentioned so far is their placement on the slopes themselves. Each site is located on plateaus on the southern part of the mountains and hills, practically hidden from the north. This strategic positioning may have been influenced by defensive needs against potential threats from the north. All of the villages are at similar altitudes and surrounded by environments with similar characteristics, suggesting a systematic and efficient approach to protecting the territory from external threats.

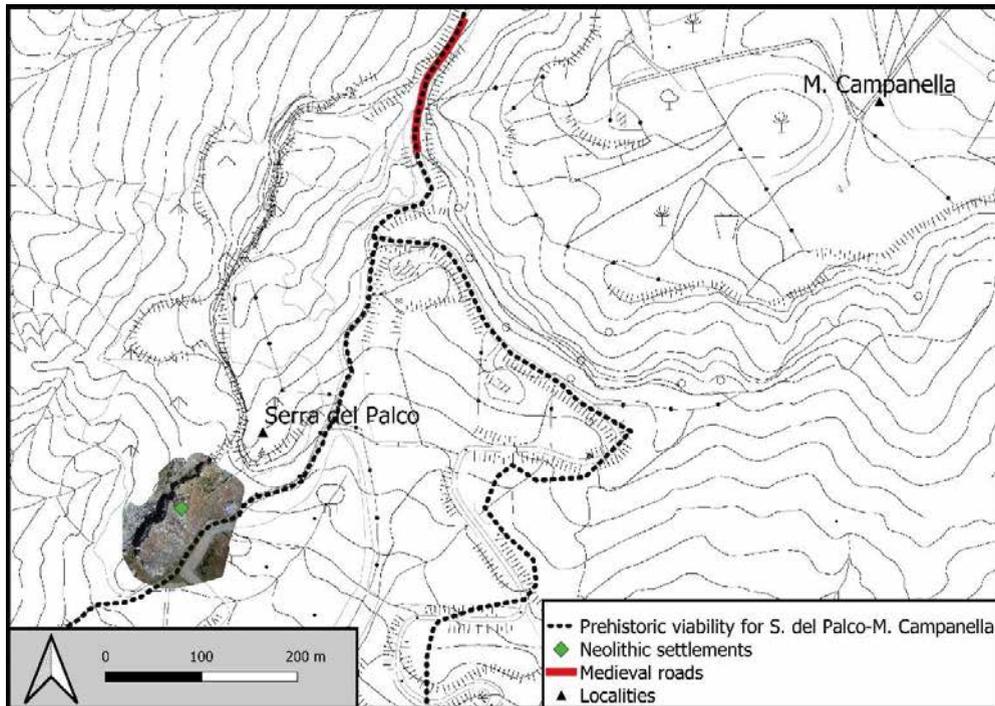


Figure 23. Medieval period routes and hypothesized prehistoric paths near Serra del Palco and the Neolithic settlement superimposed on the Carta Tecnica Regionale (Regione Sicilia).

The research is focused on a specific geographical area, but it is important to consider its relationship with the surrounding cultural landscapes. Thus, it is necessary to study the status of routeways and their conditions in the nearby topographical contexts. The mention of the Tyrrhenian coasts of the Palermo area at the beginning of the paragraph is intentional. Specifically, the Himerian coastline between the San Leonardo, Torto, and Himera rivers, have long been recognized as one of the main areas of access to the center of Sicily (Belvedere 2015: 56-59; Cucco 2017: 3-4). Several medieval chronicles mention routes from the coast to Castronovo, a town near Campofranco (CL) by Milena. These routes utilized the entire course of the Torto River, extending up to its mouth (Santagati and Santagati 2017: 97-202). Probably from this pathway, products from the Tyrrhenian areas, such as obsidian from Lipari that was traded in the Neolithic period (Bordonaro 2012: 79-80), arrived in the area of Milena (Fig. 24), which has also been discovered further south in Serra del Palco (Boscaino et alii 2012: 569-577; Nicoletti 1997a: 265-269; 1997b: 117-126).

The presence of obsidian in the area suggests its significance as it was able to be part of extensive trade routes despite being far from the coast. Large amounts of obsidian were discovered in Serra del Palco, especially in layers containing Diana-style ceramics. This provides an essential chronological reference that aligns with the peak period of Lipari obsidian distribution across the Mediterranean (Nicoletti 1997a: 266), indicating that the Milena region was well integrated into Neolithic trade routes. This would not have been possible without a society open to external trade and without viable paths connecting internal settlements, as seen in Serra del Palco Mandria. The area not only yielded the presence of obsidian from Lipari, but also smaller quantities of obsidian originating from Pantelleria (Boscaino et alii 2012: 576; Nicoletti 1997a; La Rosa 2006). This suggests a complex and interconnected network in which the Milena territory served as a central hub connecting the opposite coasts of the island, facilitating trade in both directions, regardless of the attractiveness and centrality of the source locations (Nicoletti 1997a: 268), such as Lipari and Pantelleria.

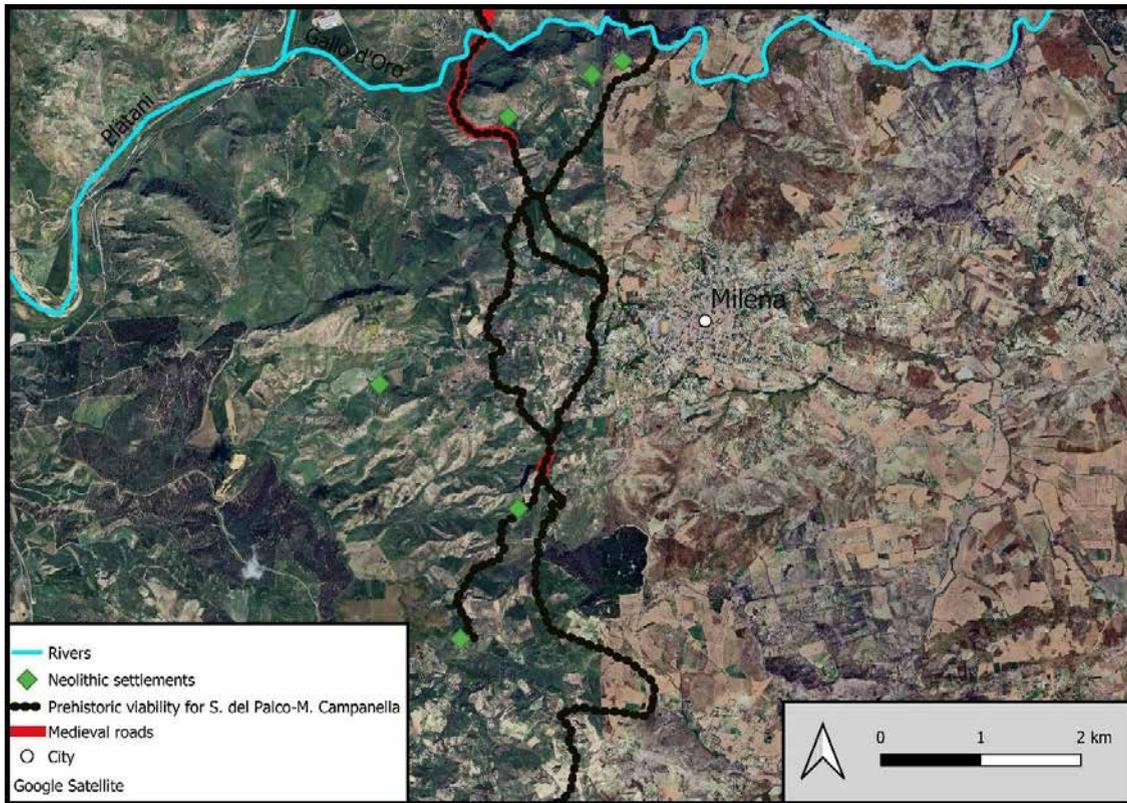


Figure 24. Reconstruction of Neolithic period pathways in the territories of Campofranco and Milena. Generated from Map data 2015 ©Google.

The Late Copper Age to the Middle Bronze Age

The focus of the discussion will now shift towards the Bronze Age while also considering the final moments of the Eneolithic. It is important to note that there is not a clear break between these two phases. However, from this point on, there is a significant increase in the number of settlements. The overall picture will gradually become more complex due to the influence and influx of products from other Mediterranean areas. To fully understand what was happening in the area, it is important to contextualize the areas under study with their neighboring contexts to the north and south. It is essential to delve deeper into the contacts with different cultures and think about the routes and ways of penetration through which these cultures managed to enter the territory. Two fundamental routes pass through the territory of Milena to the Neolithic. The first follows the route described earlier for the Neolithic period, while the second deviates from the main path but then rejoins the course of the Platani River.

New settlements were established at the end of the Eneolithic—the beginning of the Bronze Age, overlooking the valleys where prehistoric pathways we believe to exist. Throughout the Eneolithic period, evidence of occupation is present in the Conca and San Paolino mountains, as indicated by the ceramics discovered in the San Cono-Piano Notaro, Serrafelicchio, and Malpasso styles (Maniscalco 1997: 63-72). The area of Mezzebi also shows signs of occupation from the early Bronze Age, with remains associated with the Castelluccio style (Ardesia 2014: 102; Privitera 1997: 85-92). Similarly, Monte Conca and San Paolino continue to exhibit signs of Early Bronze Age occupation, with settlements in the same areas as they were previous periods (Palio 1997: 111-116).

Beginning in the Bronze Age, numerous hills overlooking the mountains and the Gallo d'Oro River begin to be systematically occupied. In a research study published in 2024 (Calderone), the results of a study that precisely analyzed the relationship between the landscape and the distribution of Bronze Age settlements were presented. This work highlights how the morphology of the landscape of this area has influenced roads and pathways from Prehistoric times until today. The research demonstrates the existence of a route that led to the Western part of the island after passing the Gallo d'Oro and heading towards Monte Grande. It passed through Mustansello before rejoining the course of the Platani River about 2 km away (Calderone 2024) (Fig. 25).

At the same time, the Middle Neolithic routes directed towards Serra del Palco continue to be used (Calderone 2024). In Serra del Palco, a Bronze Age village was established (Ardesia 2014: 159-160), and new burials were constructed in Monte Campanella (Fig. 25). Of particular note is the Tholos B tomb (Fig. 26, 27), where imported Mycenaean ceramics were found, along with late Thapsos pottery (Tusa 1999: 527). Additionally, the Zellante locality, which is considered the southernmost part of the area under study, continued to be inhabited during the Late Copper and Middle Bronze Ages (La Rosa 1997d: 197-202; Maniscalco 1997: 63-72).

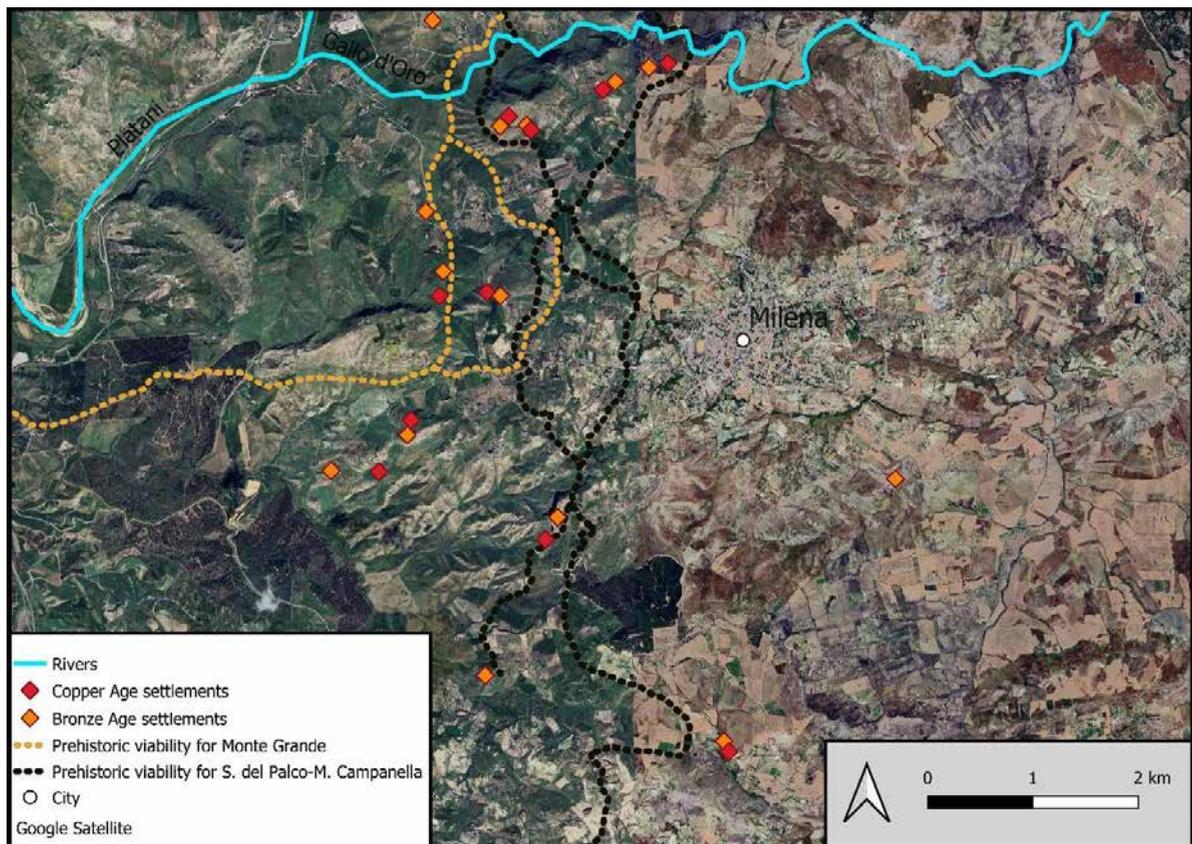


Figure 25. The hypothesis about the pathways through the Milena territory during the Copper and Bronze Ages in the direction of Monte Grande and Serra del Palco (Calderone 2024). Generated from Map data 2015 ©Google.



Figure 26. Tholos tomb in Pizzo Menta (photo by the author).



Figure 27. Interior of the Tholos at Pizzo Menta (photo by the author).

Pathways and cultural relations during the Bronze Age

It is essential to understand the reasons that justify the existence of a complex network of paths. Human movement must be linked to practical reasons that make travel necessary and dictate the choice of one location over another. The presence of the Platani River has facilitated contact between the inland areas of the island and the coasts of Agrigento over the centuries. It is no coincidence that long-lasting settlements developed near this river during prehistoric times, especially, for example, in the areas around Sant'Angelo Muxaro. Scholars have extensively studied the archaeological sites in this area to west of Milena demonstrating that this region had deep connections with other areas of the Mediterranean, similar to those described for the territory of Milena (Gulli 2021; Palermo 1999; 2004). The areas around the city of Agrigento, the hills to the north and northwest of it and the areas around Sant'Angelo Muxaro also show possible signs of contact with the territory of Milena (Castellana 2021; La Rosa 1997). Both of these areas are characterized by the presence of rivers, such as the Platani, and by a similar geomorphology to the territory of Milena. One of the most characteristic elements is the presence of gypsum formations, which is very abundant and has been used for different purposes and was used, extracted, processed, and exported through time (Gulli et alii 2015; 2017; 2018). The landscape of these particular environments and rocky outcrops was further exploited through the creation of tombs, open-air quarries, shelters, dry stone walls, and mines over the course of millennia (Madonia et alii 2018). Further evidence of contact between the regions is demonstrated by the diffusion of tholos tombs within the chalky limestone mountains, not only in the region of Milena but also in Sant'Angelo Muxaro and north of Agrigento. The Platani river valley connects these regions, and surely facilitating the flow of imported materials and funerary cultural practices.

This section looks to identify the best passages for human transit during prehistory within the area of study in order to tease out a more complex and organized cultural and economic exchange than has hitherto been envisioned by scholars and understand how the human communities living here created similar archaeological contexts and developed common forms of space management in these areas. While much of the cultural similarity might be linked to the similar geological and geomorphological features of this region of Sicily, the presence of a large river alone cannot explain the deep spread of rich imported bronze materials from the Aegean areas during the Bronze Age. It likely resulted from the communities' conscious and collective decision to maintain active contact with populations outside Sicily. Moreover, there must have been a complex system of internal routes facilitating methodical territory exploitation for raw material extraction. It is impossible to imagine Milena's territory, so far from the sea routes and the coasts, as an isolated and marginalized place compared to the surrounding Sicilian communities, especially those closer to the coastline. For this reason, in the following pages, I will attempt to clarify the extent of the contact between Milena and the areas in the direction of Agrigento and Sant'Angelo Muxaro.

Ancient routeways through Serra del Palco towards the Agrigentine coast

Starting from the coasts of Agrigento, there are at least two possible direct routes to the Southern areas of the island, passing through Milena. The settlement of Cannatello played a crucial role as an essential center for sulfur trade during the Middle and Late Bronze Age (Castellana 2000: 165). It could have acted as a southern connection point for some of the routes branching off southwards from Milena, passing through the localities of Monte Conca and Serra del Palco. The significance of Serra del Palco to the rest of the territory covered in this study must be emphasized, like the presence of products, styles, and influences from other areas outside Sicily deserves justification. Additionally, the widespread presence of Tholos tombs (Fig. 28) in the central southern part of the island, as opposed to their absence in the more Northern areas, should be considered, except in specific cases in Castronovo di Sicilia (PA) and Alia (PA).

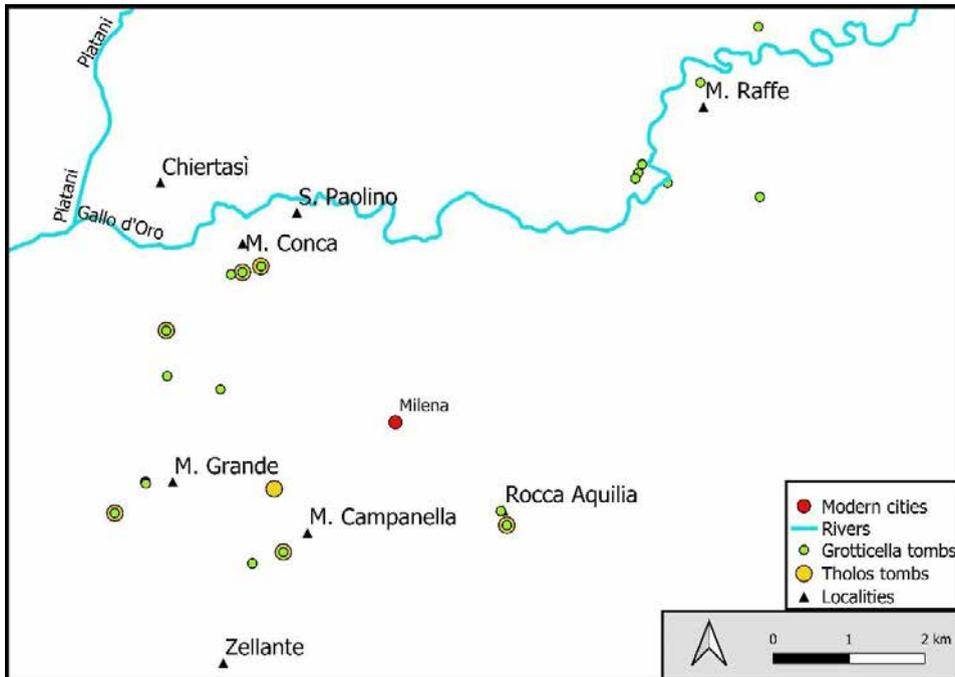


Figure 28. Distribution of the Grotticella and Tholos tombs in the municipality of Milena.



Figure 29. An example of a Grotticella tomb in the Mustansello area (photo by the author).

The distribution of tholos tombs in the Platani Valley was not accidental. This phenomenon likely started in the southern areas of the island and spread inland. Additionally, during the Middle and Recent Bronze Age along the coasts of Agrigento, there is evidence of commercial relations with Aegean civilizations (Tanasi 2020: 172–205), possibly involving the trade of sulfur and bitumen, both of which are abundant in these areas of Sicily (Castellana 2000: 123). Furthermore, the Cannatello site has also revealed the presence of Nuragic ‘grey’ ceramics from Sardinia, indicating its integration into Mediterranean trade routes (Usai and Lo Schiavo 2009: 277). As an emporium, Cannatello could have attracted materials and

products from other parts of the Mediterranean, which were then likely redistributed to central areas. The significant quantity of Cypriot Mycenaean ceramics found at the site further demonstrates the close commercial relations between the Agrigento area and the Aegean regions, which also influenced the architectural structures in the area, leading to the gradual appearance of buildings with a rectilinear plan (Castellana 2002: 112, 130-131). Cannatello likely served as one of the natural outlets to the sea for the routes hypothesized so far. This is supported by the discovery of a fragment of an ingot of the 'oxide' type, commonly found in the central Mediterranean and especially in Sardinia, during the Middle and Recent Bronze Age (Giardino 1997a: 408-409). The finding demonstrates that the site was a hub of extensive commercial activity, attracting goods from various areas of the Mediterranean and those from the Aegean. It is challenging to precisely determine the reasons behind the influx of materials from significantly different Mediterranean regions. Still, it is conceivable that there was a route involving the direct participation of the Aegean people. It is suggested that these travelers made an intermediate stop in Sicily on their journey to Sardinia (La Rosa 1989: 7; Russel and Knapp 2017). Additionally, Sicily may have provided them with other materials, such as sulfur and bitumen, for trade. The discovery of the copper ingot fragment in Cannatello (Tusa 1999: 607) further supports this perspective.

The Castelluccian settlements and necropolises are found in various areas of the Agrigento region, often near the sites included in this research. This assessment presents interesting new points for consideration. One question is the purpose of these sites and whether, for example, the existence of pathways facilitated the presence of the Castelluccian people. The intermediary role of the Platani valley in connecting this area with the rest of north-western Sicily could be a compelling reason for maintaining these settlements, which may have had a more strategic significance rather than being solely linked to productive activities. However, statements like the latter seem restrictive and would not explain the long existence of the numerous settlements in the Milena area. These settlements could thrive and expand over time, showing signs of occupation from different periods, covering the entire Copper and Early Bronze Ages. It seems much more plausible that the Agrigento area, and the Platani area in general, were also utilized for mining purposes during the Castelluccian era, given the significant presence of sulfur and the other considerations mentioned earlier. This aspect is crucial, especially considering the importance of sulfur extraction during this period. This is evidenced by the coastal site of Monte Grande in Palma di Montechiaro (AG), where a large area dedicated to sulfur extraction and processing was discovered. This demonstrates this site's central role in carrying out an activity that must have been substantial during the Castelluccian era (Castellana 2002: 44-49). We have extensively discussed the presence of Aegean imported materials, as evidenced by the bronzes of Milena and Caldare. Sebastiano Tusa himself expressed little doubt that the spread of these imported materials was due to trade routes connecting to the eastern Mediterranean. These trade routes were mainly linked to sulfur and rock salt extraction in Sicily, which were likely destined for commercial purposes (Tusa 1999: 494). Furthermore, at the site of Monte Grande in Palma di Montechiaro, there are indications of mining activity continuing into the late Castelluccian phase. This is supported by the discovery of furnaces and active sulfur mines in the coastal area of Vincinzina during this period. This suggests a continuity in the exploitation of the Agrigento area and its connections with the Aegean-Mycenaean world during the transition from the ancient to the middle and recent Bronze Age (Castellana 2002: 112). The data from analyzing metallic materials discovered in the Agrigento area dating back to the Late Bronze Age and the early Iron Age are essential. From a technological perspective, these objects share similarities with metal products from mainland Italy (Giardino 1997b: 133), indicating that this region had connections with various areas beyond Sicily. The Agrigento area had interactions with other cultures well before, at least from the Castelluccian age, as evidenced by the large quantity of imported Aegean ceramics in the San Francesco quarry in Monte Grande (AG). These ceramics included fragments depicting boats resembling those from the Cycladic region (Castellana 2002: 49-50). This suggests that the commercial relations between this area of Sicily and the Aegean regions of the Mediterranean may have occurred even before the

Late Bronze Age. Determining the specific geographical areas where sulfur extraction and processing activities were concentrated is essential. This includes identifying whether other quarries were active in the Platani valley during the same period. For instance, documented evidence shows active quarries in Casteltermini, specifically at the site of Monte Roveto, where signs of sulfur processing and extraction have been found. This is evidenced by discovering a sulfur lump similar to the one found at Baffo Superiore. However, the exact dating of this discovery is challenging due to the compromised context in which it was found at a later date (Gullì 2016: 106). The existence of multiple centers dedicated to sulfur extraction, which required transportation from inland areas to coastal regions for the market, implies the need for organized transport routes. This suggests the possibility of specifically designed routes to facilitate the transportation of raw materials most efficiently, given the technological limitations of the period under analysis. During the Thapsos era, a significant concentration of Mycenaean remains was documented along the Platani valley. In previous chapters, the concept of Mycenaean taste theorized by Ernesto De Miro has already been described. This concept refers to the habit of reintroducing the Mycenaean artistic style in products resulting from local craftsmanship (De Miro 1997: 138-139). De Miro spoke of a deeper connection between these areas and the Mycenaean cultures, emphasizing how, in the region of the Platani Valley, there was a free adherence to foreign stylistic forms, a genuinely local taste capable of influencing the Bronze Age and extending into the following period.

Ancient routeways through Sant'Angelo Muxaro to the Agrigentine coasts

First, it is helpful to provide some context about the area around Sant'Angelo Muxaro. This will allow us to compare it with Milena's territory and examine possible connections. The area of Sant'Angelo Muxaro has evidence of occupation dating back to the Copper Age. For example, the Malpasso-style ceramics found in the Capreria district suggest this (Tusa 1999: 252), and fragments of ceramics from the Sant'Ippolito style have been found in Grotta Barberia (Tusa 1999: 257). Additionally, signs of Late Copper Age activity have been identified at Falsone and Monte Minavento (Tomasello 1996: 108). From the hills around Sant'Angelo Muxaro, it is possible to control the approximately 30 km long passage created by the Platani River as it flows towards the southern coast. Furthermore, the presence of rock salt and potassium salts in the nearby areas has also been documented (Rizzo 2004: 33), indicating the availability of critical raw materials. Although there may be signs of human presence in Sant'Angelo Muxaro during the Eneolithic period, systematic inhabitation of the area did not begin until the end of the Bronze Age and the beginning of the Iron Age. From this moment, we witness the spread of more and more numerous burials, as in Contrada Capreria (Castellana 2002: 133-137), a locality that occupies a river terrace located right on the surface of a bend along the course of the Platani, Contrada Muxarello (Piano Paesaggistico 1999), in Colle Sant'Angelo (Palermo 1999: 161-164), in the Costa di Fico area, and to which are added the signs of frequentation documented near Colle Castello, property Priolo (Palermo 1979: 50-58), Pizzo Carraggi and Cozzo Luponero (Ardesia 2014: 99-101). The Giardina district shows signs of frequentation (Ardesia 2014: 99-101), and numerous archaeological findings of Thapsos are found in the Sopracanale district (Palermo 2004: 216; Tusa 1999: 494). Tholos burials are well documented in Muxarello, particularly in the necropolis of Cozzo Valenti, which is a large and fertile location (Tomasello 1996: 107-108). The Southern Necropolis, located on the southern wall of the hill hosting modern Sant'Angelo Muxaro, also contains documented tholos burials, some of which share common characteristics with those found in different areas of Sicily (Tomasello 1996: 35-106). Additionally, exciting data have emerged from the Capreria district, where two basins were found in a tomb, similar to those found in Caldare and especially to those found in Milena (Castellana 2000: 212).

Milena and Sant'Angelo Muxaro have traces of relationships with the Aegean dating back to the Late Bronze Age (Palermo 2004: 203-204). The connection between the two locations is evident through the presence of imported or Aegean-inspired materials and the widespread use of tombs with double tholos chambers. These tombs can be found in the Southern cemetery of Sant'Angelo Muxaro, similar

to those in the Milena area. In both regions, the Tholos tombs are characterized by the placement of the funeral bed to the left of the entrance and occupying approximately half of the cell without deforming the base perimeter, as seen also in some other necropolises in the area of Caltagirone (CT) (Tomasello 1996: 52-57). The history of Sant'Angelo Muxaro is somewhat more uncertain than Milena's, making it more challenging to compare the two areas. According to the latest research, the initial settlement in Sant'Angelo likely dates back to the Late-Late Bronze Age (Palermo 2015: 25). However, evidence of earlier habitation has also been discovered from the Eneolithic period's end to the Bronze Age's beginning (Maniscalco 2007: 174-177). To emphasize the connections between this area and Milena, it is essential to highlight the significant discoveries in Rocca Aquilia. This location, situated to the southeast of Milena, exhibits clear and consistent signs of human activity from the Middle Neolithic period to the Byzantine and Islamic periods (Arcifa and Tomasello 2005). Notably, the largest tholos tomb in the entire Milena territory has been documented in this area (Fig. 31), with dimensions similar to those of the tholoi found in Sant'Angelo Muxaro (La Rosa 1997e: 194).

Based on the data analyzed in this research, the second route crossed the Gallo d'Oro River and turned westward to follow the course of the Platani River. As the Platani River flows towards the sea, it passes through the territory of the municipality of Sant'Angelo Muxaro (AG) (Fig. 30).

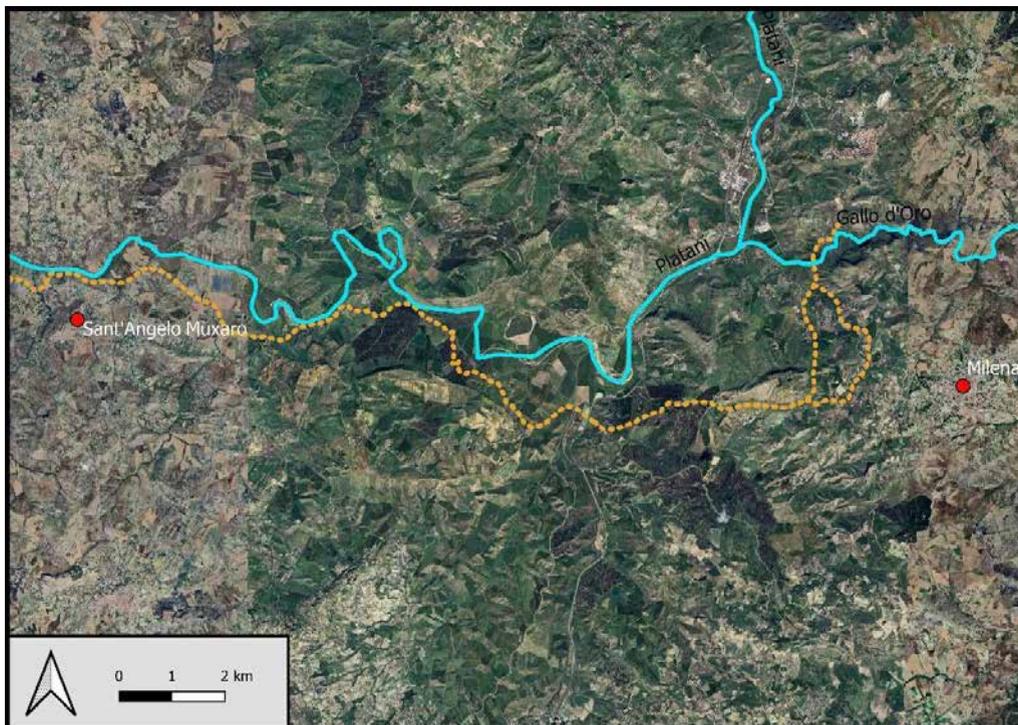


Figure 30. Viability hypothesis about the positioning of the course of the Platani River and the towns of Milena and Sant'Angelo Muxaro. Generated from Map data 2015 ©Google.

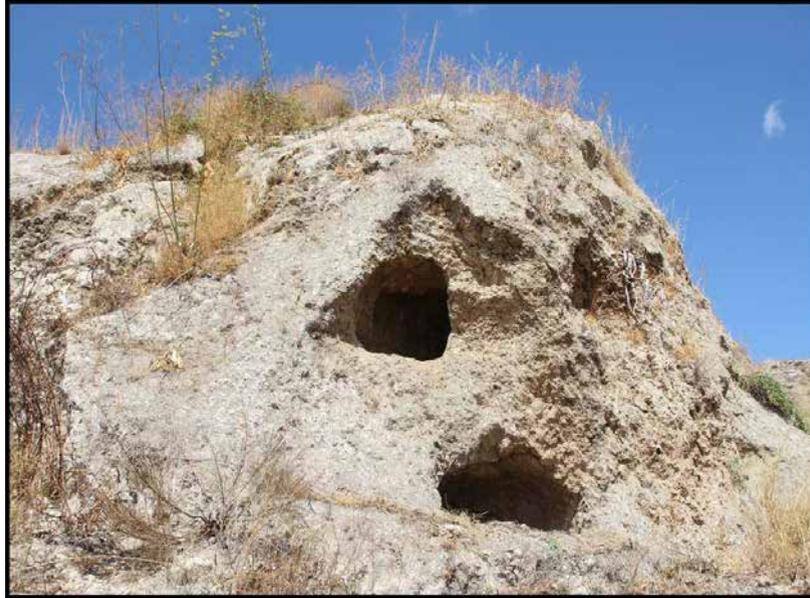


Figure 31. Grotticella and Tholos tombs in Rocca Aquilia.

These two areas likely had contact with each other, at least from a cultural standpoint, as both areas contain materials of Aegean origin and similar burial structures. The Platani river appears to have united them both geographically and ideologically, enabling communication and the exchange of products and cultural aspects between the southern and internal areas of the island. Milena and Sant'Angelo share very similar geographical features, being rich in minerals, valleys, and small hills, from which the course of the Platani river can be observed and controlled. For example, from Monte Grande, one can see the top of Monte Sant'Angelo, indicating the importance of visibility in choosing settlement locations and developing contacts.

In sum, a variety of factors bring together different areas of Sicily and converge primarily in the central southern region of the island. The landscape of this Sicilian area is abundant in valleys, which are easily traversed and are still used by pilgrims walking through central Sicily. The presence of raw materials and easily accessible areas for exploitation and extraction of said raw materials, the transportation of which was facilitated by rivers and routes for transport contributed to the development of a system shared spatial occupation of the territory over the centuries. However, distinguishing factors also differentiate the analyzed areas from each other, making it challenging to precisely define the extent of interactions between the different settlements. For instance, it appears that the area of Milena shows signs of occupation predating those in Sant'Angelo Muxaro (Gullì 2021; La Rosa 1997; Maniscalco 2007; Palermo 2015). Conversely, the area of Sant'Angelo Muxaro was systematically occupied up to protohistoric times on a broader scale than the territory of Milena (Gullì 2021; 2024; La Rosa 2017; Palermo 2004; 2015). In the future, thorough cross-referencing of the extensive data collected over previous decades will be crucial to understanding the level of connection between these two areas. The continuous use of certain routeways through the landscape of the island are well-documented in some areas of Sicily. The data collected here and presented in the catalogue can help researchers identify paths that may not be directly associated with river presence. While the Platani River can facilitate crossing various areas and transporting materials, it can pose a significant obstacle under certain conditions and from particular perspectives. Consequently, past communities likely utilized alternative routes, as evidenced by the presence of materials and cultural ideas from other Mediterranean regions.

Conclusion

This work sought to describe certain fundamental aspects of the landscape and settlement patterns in the Milena region. The territory of Milena is characterized by low but rugged hills, with valleys that lead towards Serra del Palco to the south or Monte Grande and subsequently to Sant'Angelo Muxaro in the west. These areas are rich in settlements dating from the Middle Neolithic to the Late Bronze Age, likely established for monitoring and defending passages through the mountains. Previous studies have suggested that the territory of Milena performed the role of a crossroads of sorts in the past (Tusa 1994: 331. 333-347), but were unable to define specific boundaries. Based on the data, we have shown a strong link between the area encompassing the current municipalities of Milena, Campofranco, Sutera, Mussomeli, and Montedoro and the rest of central-southern Sicily. The area's advantageous topographical characteristics allowed for a certain ease of movement, avoiding obstacles like the rugged Sicani mountains or the Platani river. Through the analysis of the geography and geomorphology of the landscape of Milena and the archaeological sites within it helped us understand how the road system could only follow specific paths and contribute to the definition of the prehistoric road system, despite the challenge of the absence of direct archaeological evidence of a road or footpath. The modern roads, mainly the state and provincial roads leading from the Corleone areas towards Milena, still essentially utilize the valleys in the mountains of central Sicily. These valleys, facing southeast, gradually lead to the area of Milena via Prizzi (PA), Castronovo di Sicilia (PA), and Sutera (CL). After passing through these areas, travelers reach the Platani river, which can be bypassed by crossing the gentler Gallo d'Oro river, slightly lengthening the route but making it easier and less dangerous. Modern pilgrims walking the Magna Via Francigena still pass through these ancient settlements, following the stages through Corleone, Prizzi, Castronovo di Sicilia, Sutera, Milena, and Grotte, and near the prehistoric archaeological sites in Sutera, Mussomeli, Campofranco, and Milena.

By studying both the contexts and the distribution of the materials, it was possible to observe a considerable continuity from the Middle Neolithic to the Copper Age in the settlement of the hills that are arranged linearly from the Conca (Cat. 20) and Paolino (Cat. 1) until reaching Serra del Palco (Cat. 24), passing through Pizzo Menta (Cat. 4). From the Eneolithic onwards, the settlements and burial areas increased considerably, while some were concentrated along a new route, which passed through the localities of Baruna (Cat. 16) and Rocca Amorella, reaching Monte Grande (Cat. 8) and Mustansello (Cat. 12), to continue its journey towards the areas further west. Starting from the Early Bronze Age, an increasingly elaborate territorial organization developed. The appearance of Aegean elements and Tholos tombs (Castellana 2000, Tomasello 1996) demonstrate the arrival of products and ideas from the Aegean area. The spread along the Platani valley of the custom of burying the deceased in Tholos tombs marked a break from previous burial customs, based on cave tombs, and shows clear signs of interaction with the Aegean world, that the well-known Tholos tombs, both built and dug into the living rock, imitate. The spread of the Tholos in the heart of the island, more specifically in Sutera, Mussomeli, Montedoro, Milena, Monte Campanella (Cat. 21), Monte Raffo (Cat. 17), Monte Conca (Cat. 20), Furnieddu, Mustansello (Cat.s 12-13), Rocca Aquilia (Cat. 6-7), Monte Ottavio, Rocca Piccirillo (Cat. 33), Rocca Ficarazze, in Sant'Angelo Muxaro and Muxarello (Castellana 2002: 138), demonstrating that the Aegean culture managed to penetrate the Sicilian hinterland in a widespread manner, especially in the Platani valley, but in some rare cases reaching as far as central-northern Sicily. This could not have occurred in a disorganized or disconnected context, especially considering the ability of this phenomenon to involve settlements located hundreds of kilometers from the coast, as is the case of Milena. On the other hand, as hypothesized by Francesco Tomasello, the spread of the Tholos through the Platani valley would demonstrate a penetration strategy towards the island's interior between the Late Helladic IIIB and the Late Helladic IIIC. This intention is also evidenced by the presence of

contemporary inhabited areas such as Monte Castello, Sant'Angelo Muxaro, Monte Conca, and Rocca Ficarazze, which are located in control of essential valleys adjacent to routes connecting the regions described in the previous pages. Raw materials, like sulfur that were extracted from various areas in the territory until a few decades ago, could have been used for trading with the peoples of the Aegean. This is evident from the artifacts and possibly the habits of the communities that lived in the territory of Milena during the Middle Bronze Age.

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Appendix: Topographical Catalogue of Sites

1. **Mount San Paolino**, Campofranco (CL), (CTR sez. 630090, coordinates 386876, 4150485).

Definition: Topographical unit.

Type: Pottery scatter.

Function: Prehistoric settlement.

Area: ha 2.1.

Altitude: 276m a.s.l.

Classes of materials: Stentinello; Diana; San Cono-Piano Notaro; Serraferlicchio.

Periods: Middle-Late Neolithic, Early-Middle Copper.

Description: Mounts San Paolino, Mezzebi, and Monte Conca are connected and create a natural barrier that makes crossing the Gallo d'Oro River difficult, except for a few areas where plateaus make crossing easier. Monte San Paolino, in particular, was located on the southern slopes of the hill. Despite wheat cultivation in the region today, the accumulation of debris has created a thick layer of earth, preserving evidence of prehistoric occupation, such as huts and ceramic materials. Excavations of the 1980s and 1990s have provided valuable information on the continuous use of the area from the Middle Neolithic period until the Middle Copper Age and then again in the Early Bronze Age, after which occupation ceased. A rare Diana-style fragment was found at this location.

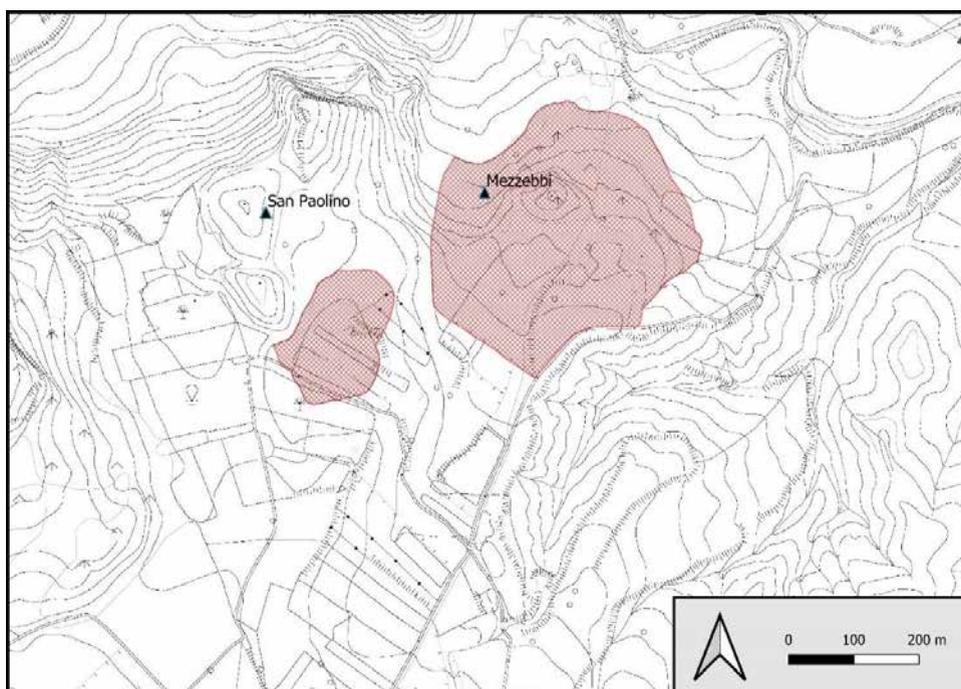


Figure 32. San Paolino and Mezzebi, areas with signs of occupation on Neolithic, Copper Age, and Bronze Age sherds CTR, 1: 5,000 scale.

2. Cimicia-Finaita, Montedoro (CL), (CTR sez. 630130; coordinates: 387971, 4144085)

Definition: Topographical unit.

Type: Pottery scatter.

Function: Prehistoric settlement.

Area: ha 1.0.

Altitude: 480m a.s.l.

Classes of materials: Malpasso; Rodi-Tindari-Vallelunga; Castelluccio.

Periods: Late Copper Age; Early-Middle Bronze Age.

Description: The area corresponds to a small hill used for grazing. Modern sheepfolds were built in the area but were abandoned and reduced to ruins. The surface is rich in ceramic sherds from different periods, ranging from the Copper Age to the Bronze Age. In the southernmost part of the peak, there appear to be remains of ovoid huts, but require more investigation to be verified.

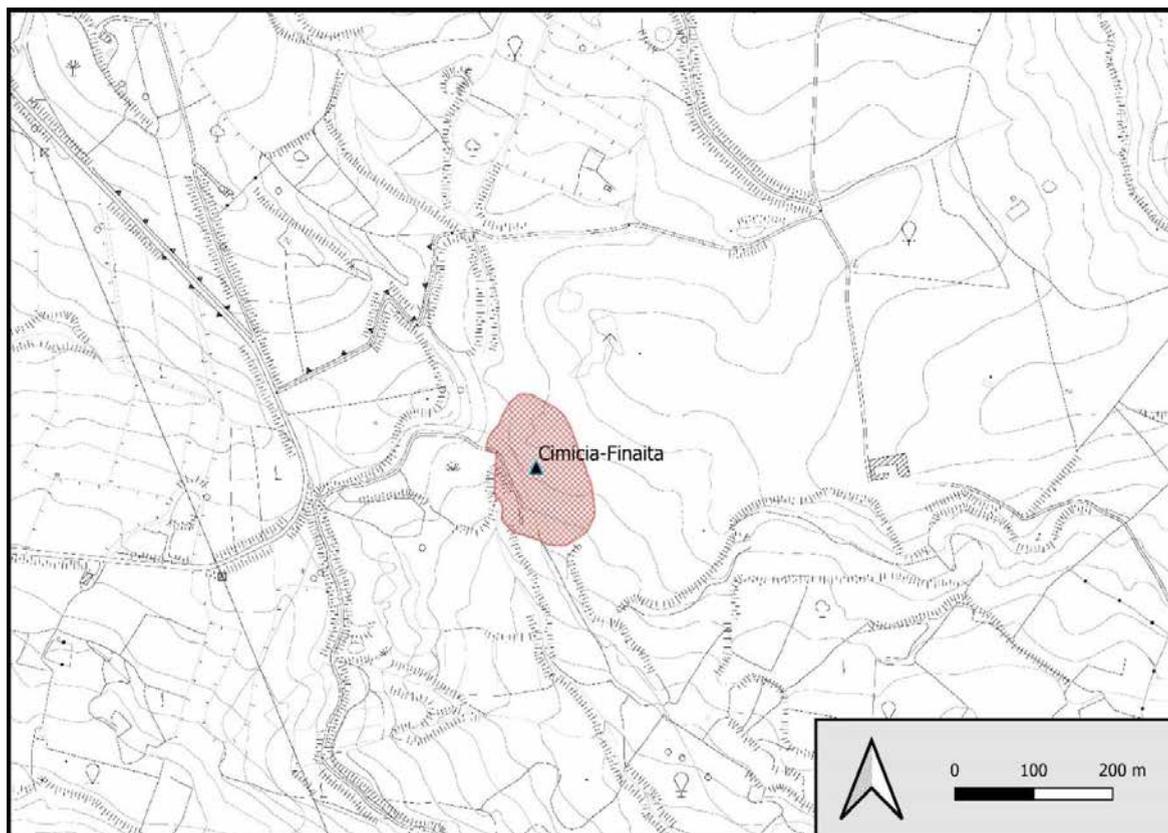


Figure 33. Cimicia-Finaita, areas with signs of occupation on Copper Age, Bronze Age, CTR, 1: 5,000 scale.

3. Mezzebi, Campofranco (CL), (CTR sez. 630090; coordinate: 387254, 4150457).

Definition: Topographical unit.

Type: Pottery scatter.

Function: Prehistoric settlement.

Area: ha 7.0.

Altitude: 240m a.s.l.

Classes of materials: Sant'Ippolito; Moarda; Castelluccio.

Periods: Late Neolithic, Late Copper Age, Early-Middle Bronze Ages.

Description: This area directly contacts Mount San Paolino and plays a strategic role in monitoring the routes into the territory of Milena via the Gallo d'Oro. The site has been occupied during various periods. After the Neolithic occupation, there was a gradual abandonment, making human presence sporadic during the Eneolithic period. The area was settled again during the Bronze Age, as evidenced by a well-studied and documented hut. The hill continued to be occupied occasionally in historical times. There are sporadic surface sherds, but the archaeological remains studied at the end of the last century are no longer visible as they are buried under accumulations of earth and vegetation.

4. Pizzo Menta, Milena (CL), (CTR sez. 630090)

Definition: Topographical unit.

Type: Prehistoric necropolis and settlement.

Function: Prehistoric settlement.

Area: ha 0.10.

Altitude: 500m a.s.l.

Classes of materials: San Cono-Paino Notaro; Malpasso

Periods: Neolithic, Middle-Late Copper Age

Description: Evidence of Neolithic period huts was found through documented post holes, and limited documentation of ceramics. The Copper Age is well-documented through the discovery of a burial site containing ceramics and human remains. The oldest signs of human occupation were found near a hut close to the burial site, with the oldest layer showing some signs of Neolithic occupation. Pizzo Menta is strategically located between Monte Conca and Serra del Palco, making it an important area due to its clear visibility of Serra del Palco and Monte Grande. It is plausible that people settled in this area due to the guaranteed sightlines between these three mountains.

5. Rocca Aquilia I, Milena (CL), (CTR 630100; coordinates: 3895416, 41466726).

Definition: Topographical unit.

Type: Pottery scattered area and structure.

Function: Byzantine period settlement.

Area: ha 0.8.

Altitude: 389m a.s.l.

Classes of materials: Byzantine 'combed' roof tiles (tegole pettinate).

Periods: 7th-8th c. A.D.

Description: A Byzantine settlement was likely at the bottom of the mountain's northeastern slope as evidenced by the abundance of Byzantine period combed tiles on the surface based on. The remains of the houses may still be visible. At the top, there is a quadrangular cistern, although its exact age needs to be confirmed by further investigation.

6. Rocca Aquilia II, Milena (CL), (CTR 630100; coordinates: 3896270, 41466557).

Definition: Topographical unit.

Type: Pottery scatter and structure.

Function: Prehistoric settlement and necropolis.

Area: ha 4.6.

Altitude: 340m a.s.l.

Classes of materials: Diana; San Cono-Piano Notaro; Serraferlicchio; Malpasso; Castelluccio.

Periods: Middle-Late Neolithic, Copper Age, Middle-Late Bronze Age.

Description: A prehistoric settlement is on the southern slope near the foot of Rocca Aquila. Significant amounts of prehistoric pottery representing different periods were found throughout the area. Plowing activities have likely affected the archaeological sites. However, it is possible that remains of buildings and wall structures can still be found under one to two meters of depth. Previous tests have revealed a stratigraphy that indicates continuous human occupation of the area from the late Neolithic period to the end of the Copper Age.

7. Rocca Aquilia III, Milena (CL), (CTR 630100; coordinate: 38962799, 414652858).

Definition: Topographical unit.

Type: Tombs area.

Function: Necropolis.

Area: ha 0.018.

Altitude: 335m a.s.l.

Classes of materials: -

Periods: Copper Age, Middle-Late Bronze Age.

Description: South of Rocca Aquilia, overlooking the modern road, there are several Grotticella-style artificial cave burials and a tholos tomb. The tholos tomb is the largest found so far in the entire territory of Milena, with a similar profile to those on Monte Campanella and similar dimensions to those from Sant'Angelo Muxaro. The tomb yielded very few materials, including some ceramic fragments that are difficult to interpret, some of which date back to the late Bronze Age, an iron ring, and a flint core.

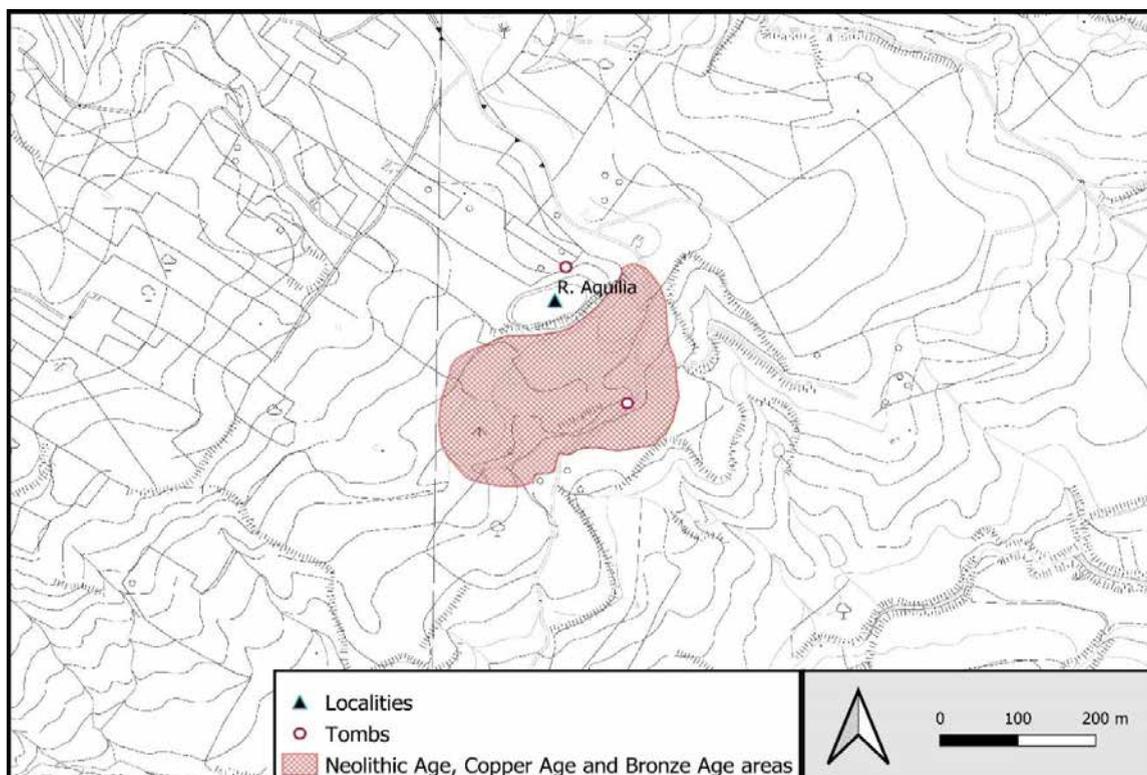


Figure 34. Rocca Aquilia I-II-III, CTR, 1: 5,000 scale.

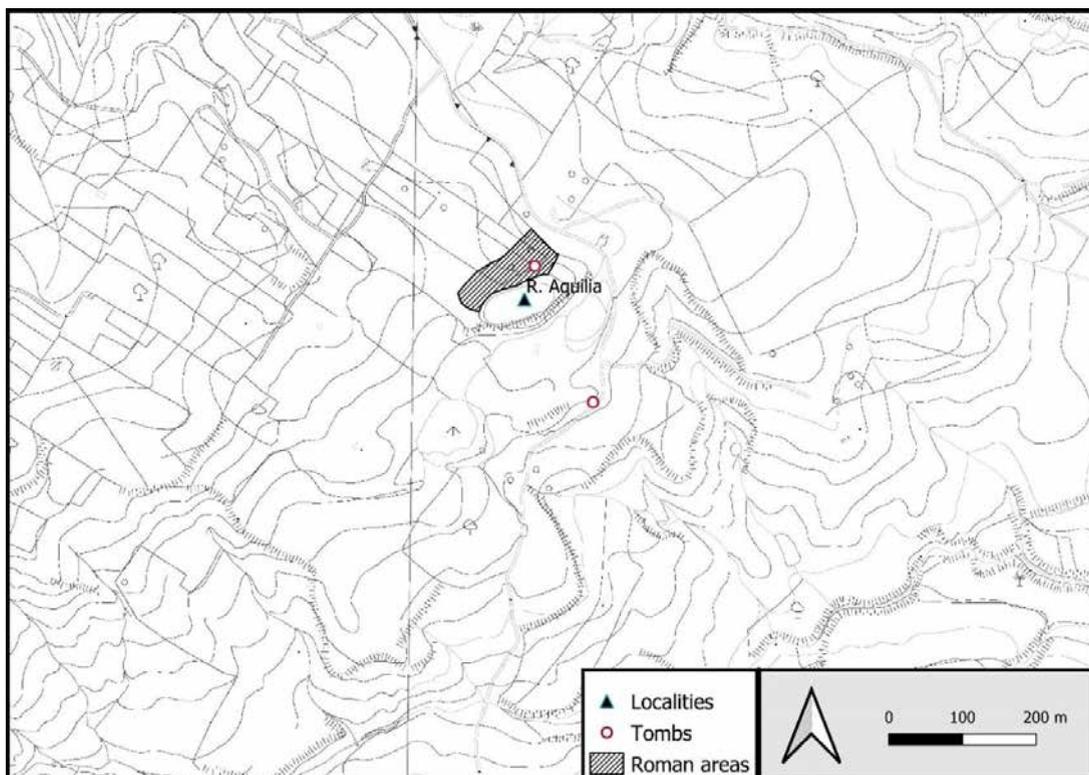


Figure 35. Rocca Aquilia I-II-III, CTR, 1: 5,000 scale.

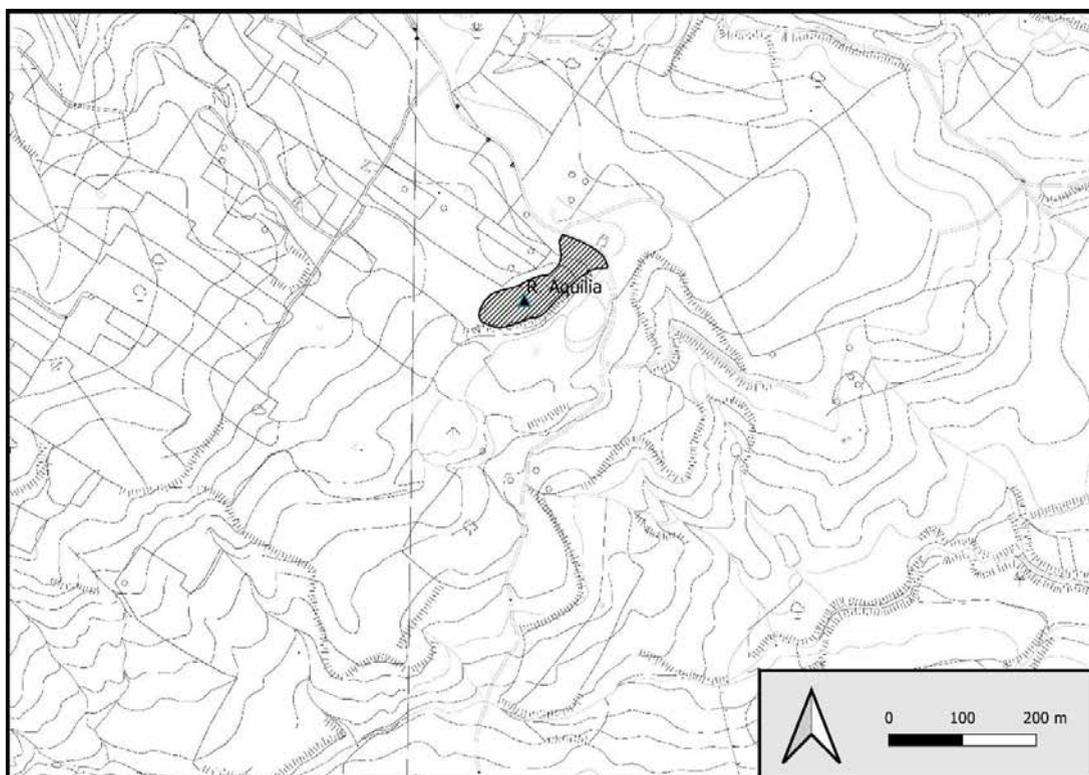


Figure 36. Rocca Aquilia I-II-III, areas with signs of Byzantine occupation, CTR, 1: 5,000 scale.

8. Monte Grande, Milena (CL), (CTR sez. 630090; coordinate: 384979, 4146997).

Definition: Topographical unit.

Type: Pottery scatter and tombs.

Function: prehistoric settlements and necropolis.

Area: ha 0.9.

Altitude: 333m a.s.l.

Classes of materials: Stentinello; Diana; San Cono-Piano Notaro; Serraferlicchio; Malpasso; Thapsos.

Periods: Middle/Late Neolithic, Copper Age, Bronze Age.

Description: This mountain is one of the most well-studied and documented sites. In the Fontanazza area and on the summit of Monte Grande, a noticeable amount of ceramic scatter is apparent on the surface, indicating possible settlement during the Neolithic period. Further investigations and excavations focused on the plateau at the top of the mountain could reveal the presence of additional settlements. Archaeological excavations confirmed the existence of a Middle Bronze Age settlement. It is also possible that there were additional huts on other plateaus on the sides of the mountain, which have not yet been archaeologically studied but show signs of occupation in various areas, as evidenced by large quantities of ceramics, particularly from the Bronze Age. From the top of Monte Grande, one can observe the entire surrounding territory. Serra del Palco, Pizzo Menta, and Mustansello are visible and the territory opening towards the southwest toward Sant'Angelo Muxaro.

9. Monte Grande II, Milena (CL), (CTR sez. 630090; coordinate: 3848708, 41471089).

Definition: Topographical unit.

Type: Pottery scatter and rock-cut tombs.

Function: necropolis.

Area: ha 0.001.

Altitude: 304m a.s.l.

Classes of materials: San Cono-Piano Notaro; Serraferlicchio; Malpasso; Thapsos.

Periods: Copper Age, Middle Bronze Age.

Description: In addition to the village areas, a total of five caves used for ritual and funerary purposes during prehistory were analyzed (see Fig. 141). Almost all the phases, from the Middle Neolithic to the Bronze Age, are well represented. This is demonstrated by the studies carried out on the materials found inside the caves. The first cave encountered when proceeding from North to South is cave number III.

10. Monte Grande III, Milena (CL), (CTR sez. 630090; coordinate: 3848675, 41470934).

Definition: Topographical unit.

Type: Pottery scatter and cave tombs.

Function: necropolis.

Area: ha 0.001.

Altitude: 296m a.s.l.

Classes of materials: San Cono-Piano Notaro; Serraferlicchio; Malpasso.

Periods: Copper Age.

Description: Continuing southward, the next cave is Cave V, which has yielded evidence of Copper Age occupation.

11. Monte Grande IV, Milena (CL), (CTR sez. 630090; coordinate: 3848752, 41470761).

Definition: Topographical unit.

Type: Pottery scatter and cave tombs.

Function: Necropolis.

Area: ha 0.001.

Altitude: 295m a.s.l.

Classes of materials: Stentinello; Diana; San Cono-Piano Notaro; Serraferlicchio; Malpasso; Thapsos.

Periods: Middle-Late Neolithic, Copper Age, Middle Bronze Age.

Description: As you continue along the southern slope of the mountain, you will come across a group of three caves: I, II, and IV. These caves have yielded materials dating to the Middle Neolithic to the Bronze Age. In the Funtanazza 1 Mustansello cave, tests have revealed complete sequences from the late Neolithic to the end of the Copper Age, showing continuous habitation during that time. In the same cave, numerous signs of Thapsian activity have been found, following a long period of abandonment that resulted in the absence of Castelluccian finds. Further tests and excavations on the plateau at the mountain's peak could reveal more settlements, as has been done for a Middle Bronze Age settlement.

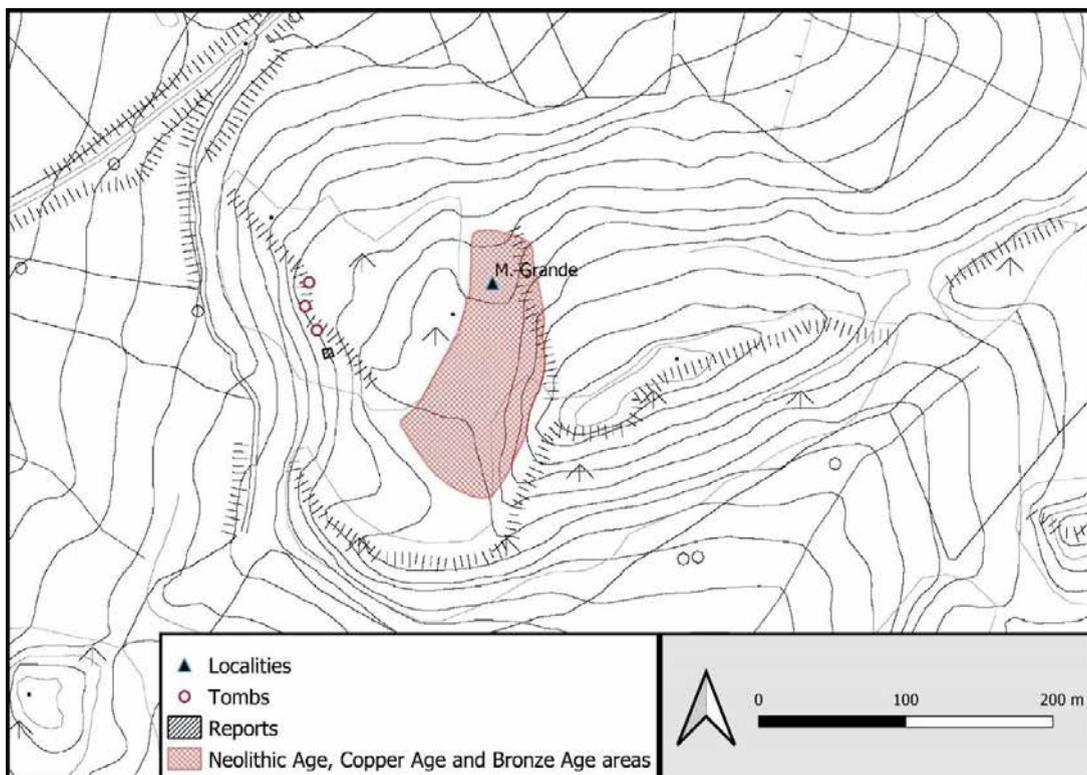


Figure 37. M. Grande I-II-II-IV-V, CTR, 1: 2,500 scale.

12. Mustansello I, Milena (CL), (CTR sez. 630090; coordinates: 384250, 4146659).

Definition: Topographical unit.

Type: Pottery scatter and tombs.

Function: Necropolis.

Area: ha 11.6.

Altitude: 320m a.s.l.

Classes of materials: San Cono-Piano Notaro; Serraferlicchio; Malpasso; Rodì-Tindari-Vallelunga.

Periods: Copper Age, Bronze Age.

Description: The area is connected to Monte Grande. During the field survey, ceramic scatter dating back to the Copper and Bronze Ages was readily visible on the surface. A plateau covers several hectares of the southern foot of the mountain. Unfortunately, it is mainly covered by vegetation, some of which are almost two meters high, obscuring probable remains of prehistoric huts that were still visible on the surface. The thick vegetation also hinders access to small natural caves used in the past as sheepfolds. Although these caves have not been methodically excavated, they have shown numerous signs of prehistoric occupation on the surface. Much of the remaining area is used for cultivating wheat. One of these areas contains a small cave tomb dating back to the Copper Age. Other tombs are still visible as one descends further down the plateau towards the natural depression below, known locally as 'Caldaruna.'

13. Mustansello II, Milena (CL), (CTR sez. 630090; coordinates: 3844661, 41466934).

Definition: Topographical unit.

Type: Pottery scatter and cave tombs.

Function: Necropolis.

Area: ha 0.075.

Altitude: 372m a.s.l.

Classes of materials: San Cono-Piano Notaro; Serrafferlicchio; Malpasso; Rodi-Tindari-Vallelunga.

Periods: Copper Age, Bronze Age.

Description: The mountain has a group of burials on the southern slope, including at least one Tholos tomb and four other tombs, two of which partly overlap and connect with one another. Just below is a tomb with a conical shape similar to the later Tholos tombs, although it does not have the typical vault ceiling and is flat instead.

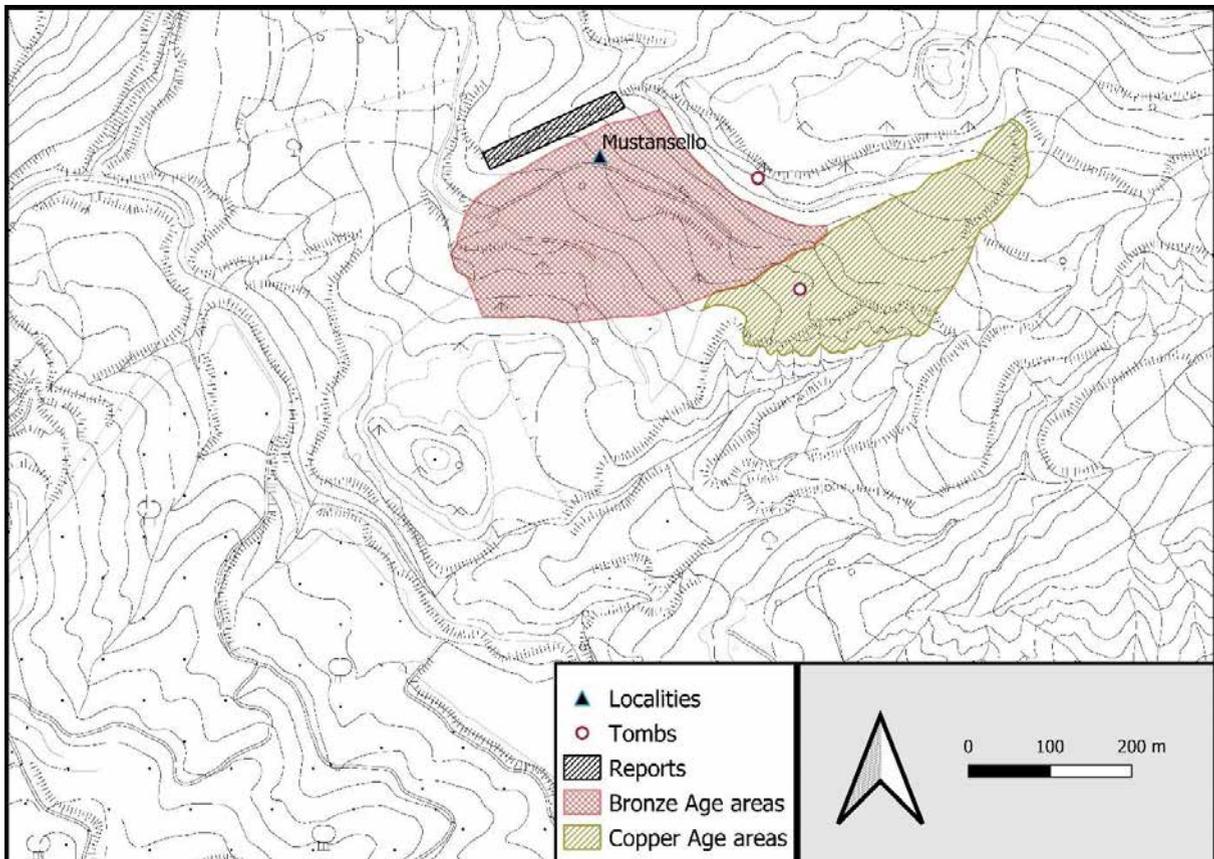


Figure 38. Mustansello I-II, CTR, 1: 5,000 scale.

14. Chiertesì, Campofranco (CL), (CTR sez. 630050 e 630090; coordinates: 3851860, 41511028).

Description: Topographical unit.

Type: Pottery scatter.

Function: Prehistoric period and Iron Age Settlements.

Area: ha 2.3.

Altitude: 323m a.s.l.

Classes of materials: Thapsos.

Periods: Middle Bronze Age, Iron Age (?).

Description: The hill is quite rugged and exposed to strong winds and abandoned. The summit shows signs of occupation from different periods, starting from the Middle Bronze Age. Recent investigations found many ceramics on a plateau just below the summit. The location was likely chosen for defense and territorial control due to its difficult accessibility and the ability to monitor the surrounding area towards Rocca Ferro and Monte Conca. Further excavations may reveal evidence of a settlement that could have been used to monitor the crossing of the Gallo d'Oro river. It is possible that the area was also occupied during the Iron Age when indigenous centers were scattered throughout the Campofranco territory. This information is based on a survey carried out in August 2020, which led to the discovery of numerous ceramic sherds from various Bronze Age and historical periods.

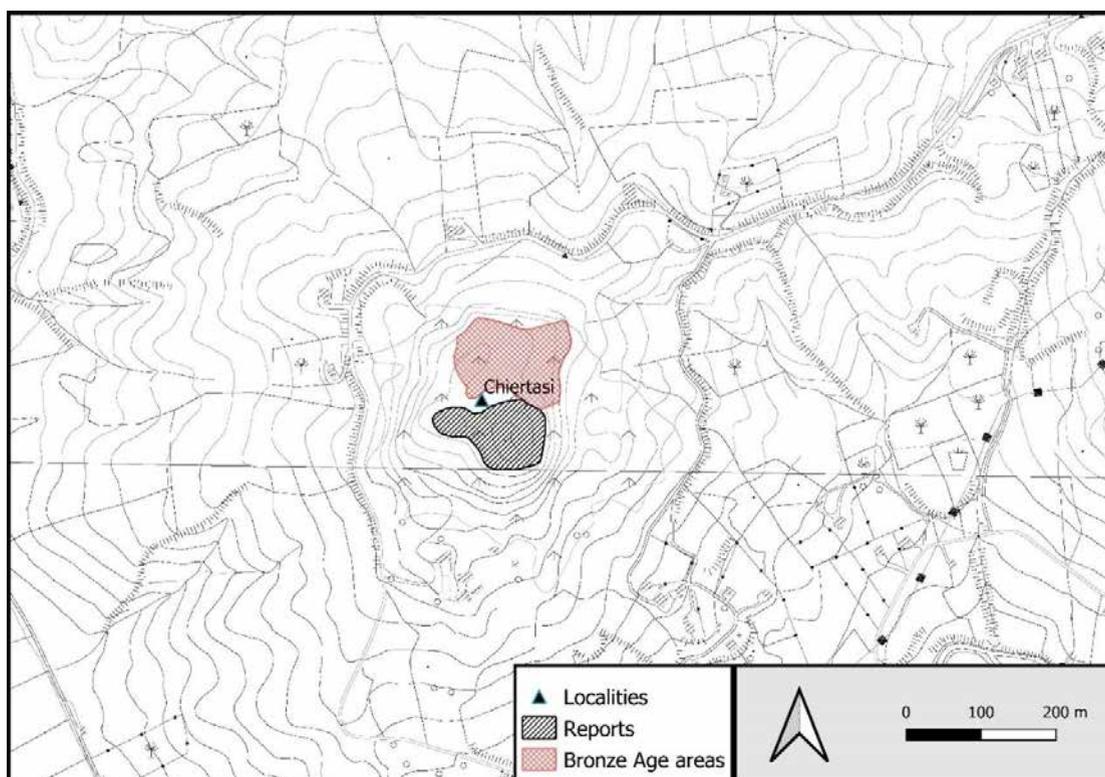


Figure 39. Chiertesì, CTR, 1: 5,000 scale.

15. Zellante, Montedoro (CL), (CTR sez. 630130; coordinates: 385680, 4144664).

Definition: Topographical unit.

Type: Pottery scatter and tombs.

Function: Prehistoric settlement.

Area: ha 7.4.

Altitude: 396m a.s.l.

Classes of materials: Stentinello; Malpasso; Thapsos.

Periods: Neolithic period, Copper Age, Middle Bronze Age, Roman period, and Byzantine period.

Description: The entire area is used for agriculture. In the area where there is now an olive grove, a large amount of Roman and Byzantine ceramics can be seen on the surface due to plowing activities. The extensive quantity of materials indicates that there may have been a settlement in that area engaged in productive activities. Unfortunately, the subsequent construction of a large farmhouse has likely compromised any potential archaeological remains. Next to the farmhouse is a raised plateau that still contains significant quantities of prehistoric ceramics on the surface. Moving south from the olive grove, a rocky outcrop bordered by the Coda di Volpe stream still contains rock-cut tombs.

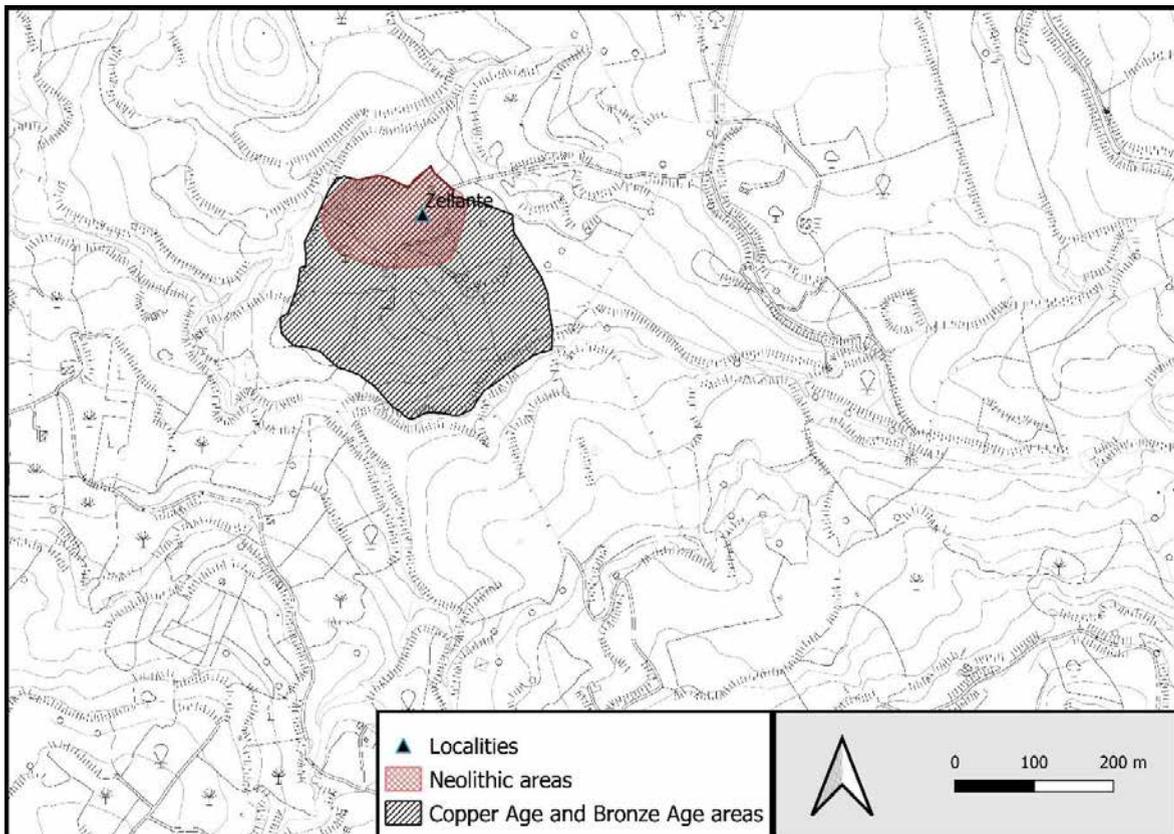


Figure 40. Zellante, CTR, 1: 5,000 scale.

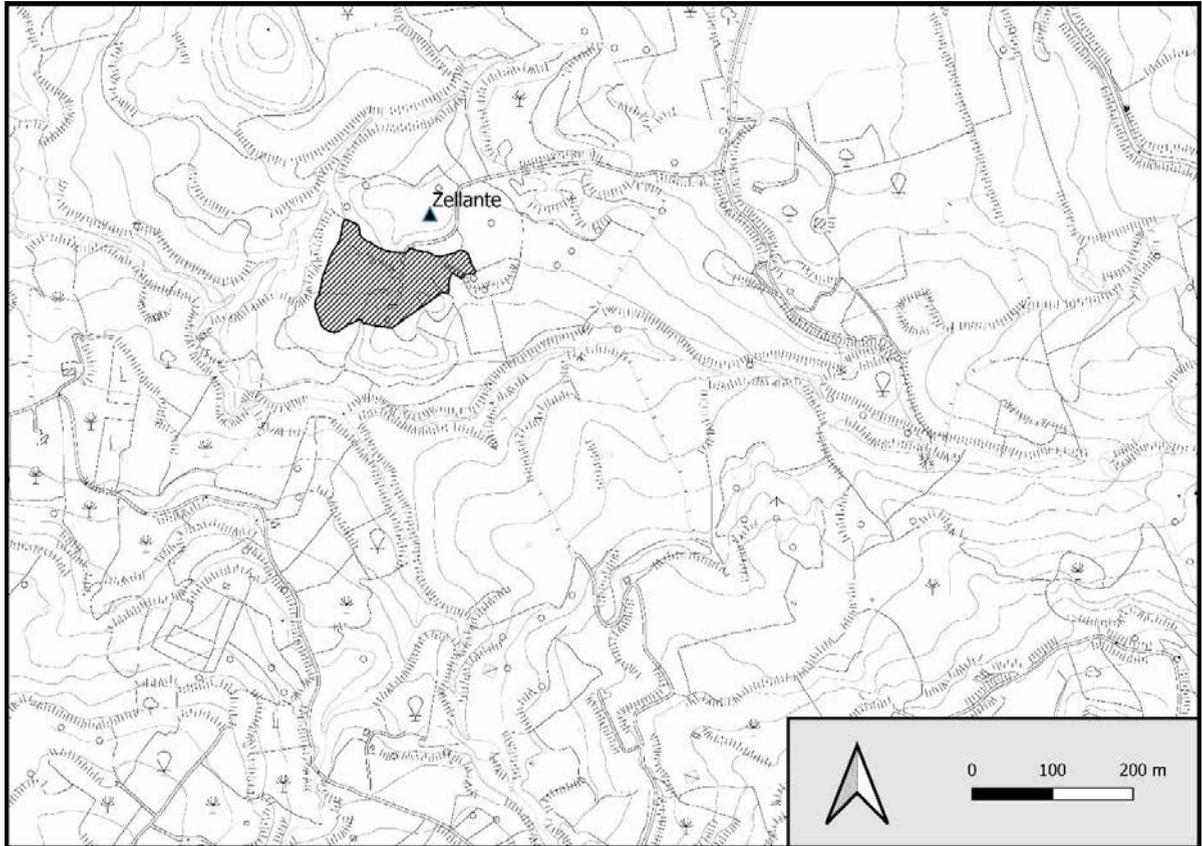


Figure 41. Zellante, Roman and Byzantine areas, CTR, scale 1: 5,000.

16. Baruna, Milena (CL), (CTR sez. 630090; coordinates: 385241, 4148482).

Definition: Topographical unit.

Type: Pottery scatter and tombs.

Function: Prehistoric settlement.

Area: ha 9.5.

Altitude: 400m a.s.l.

Classes of materials: Serraferlicchio; Rodì-Tindari-Vallelunga; Castelluccio.

Periods: Copper Age, Middle Bronze Age.

Description: Baruna is a large flat area located at the base of Serra dei Morti, between Rocca Amorella and Monte Raffo. It serves as a crucial point on the route leading south or north, allowing travelers to avoid scaling the heights of Serra dei Morti and Amorella. The area has evidence of human occupation dating back to the Copper and Bronze Ages. A small 'Grotticella' tomb is near a rocky spur, surrounded by dense vegetation and two large fig trees. Other tombs may be situated at the base of the rock. The abundant vegetation, which thrives even in summer, has obscured the area, making it challenging to identify ground materials. However, further excavations and clearing activities could reveal remnants of ancient dwellings.

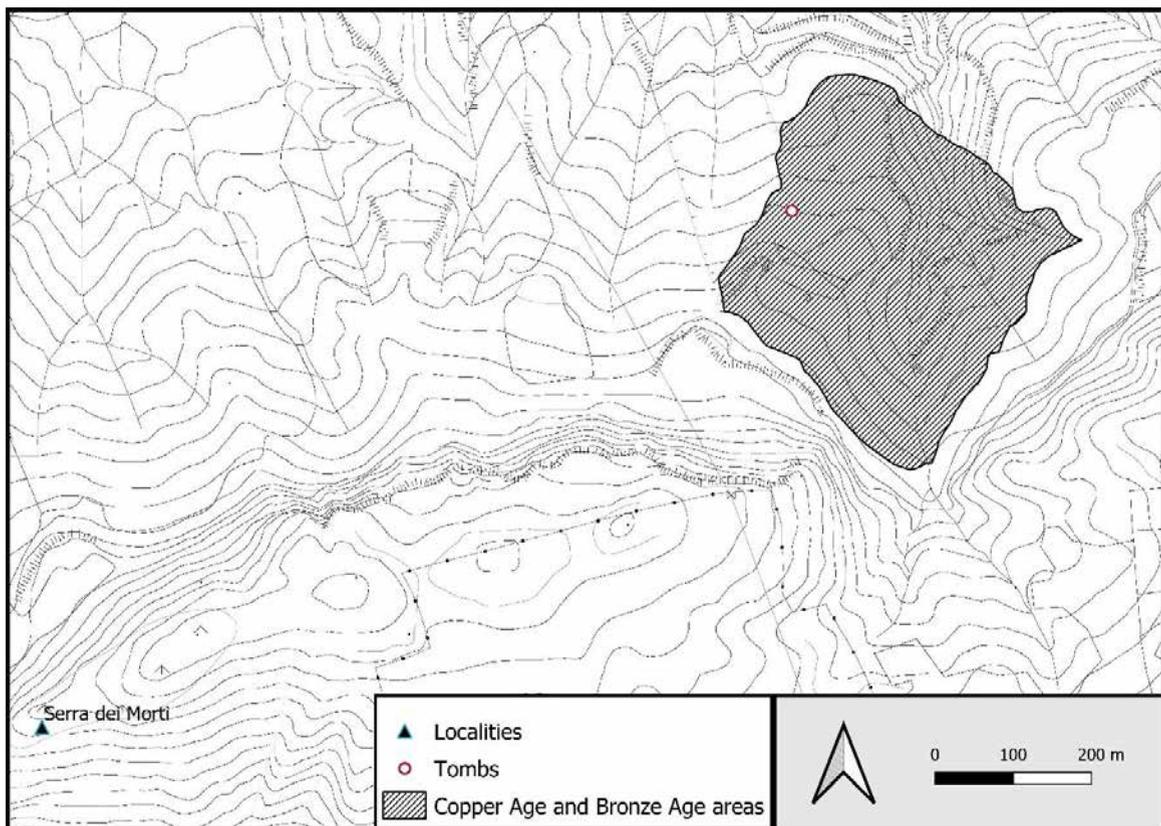


Figure 42. Baruna, CTR, 1: 5,000 scale.

17. Raffo Piano Zazzi, Milena (CL), (CTR sez. 630090; coordinates: 385105, 4149130).

Definition: Topographical unit.

Type: Pottery scatter and tombs.

Function: Prehistoric and Iron Age indigenous settlements.

Area: ha 1.40.

Altitude: 320m a.s.l.

Classes of materials: -

Periods: Middle Bronze Age, Iron Age.

Description: The area was a quarry for many years, likely destroying numerous tombs. Currently, only a Tholos tomb is visible on the side of the slope where Provincial Road 24 is located. Other Grotticella type rock-cut tombs can also be found on the same wall. On the top of the hill, in the area known as the 'Zazzi plain,' many Iron Age ceramics are scattered on the surface. Further excavations could provide more insight into the actual presence of the center.

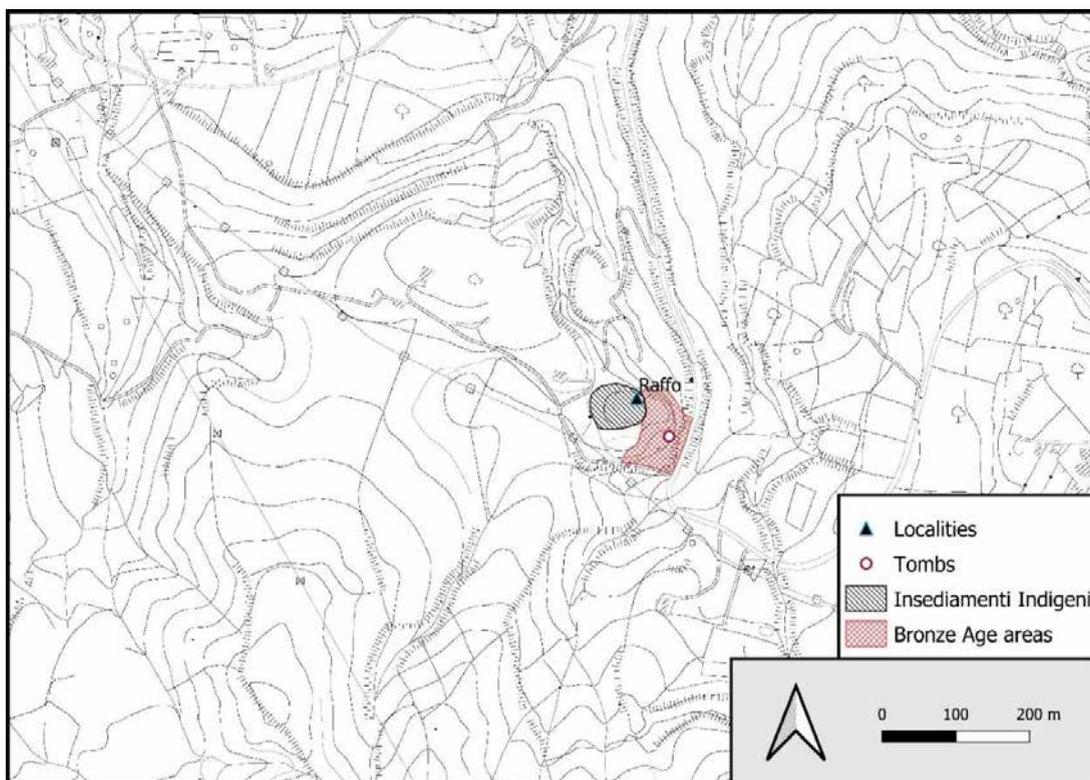


Figure 43. Raffo Piano Zazzi, CTR, 1: 5,000 scale.

18. Cozzo Reina, Mussomeli (CL), (CTR sez. 630060; coordinates: 3929232, 41530711).

Definition: Topographical unit.

Type: Pottery scatter and tombs.

Function: Prehistoric period and Iron Age indigenous settlements.

Area: ha 1.8.

Altitude: 275m a.s.l.

Classes of materials: Malpasso.

Periods: Late Copper Age, Middle Bronze Age, Iron Age.

Description: This is a large hill close to the Gallo d'Oro river. On the hill's western side, there are numerous ancient burials dating back to the Bronze and Iron Ages. The weather significantly damaged many of the tombs, but further exploration could reveal evidence of an ancient settlement. Moving westward, a necropolis from the Greek period has also been found.

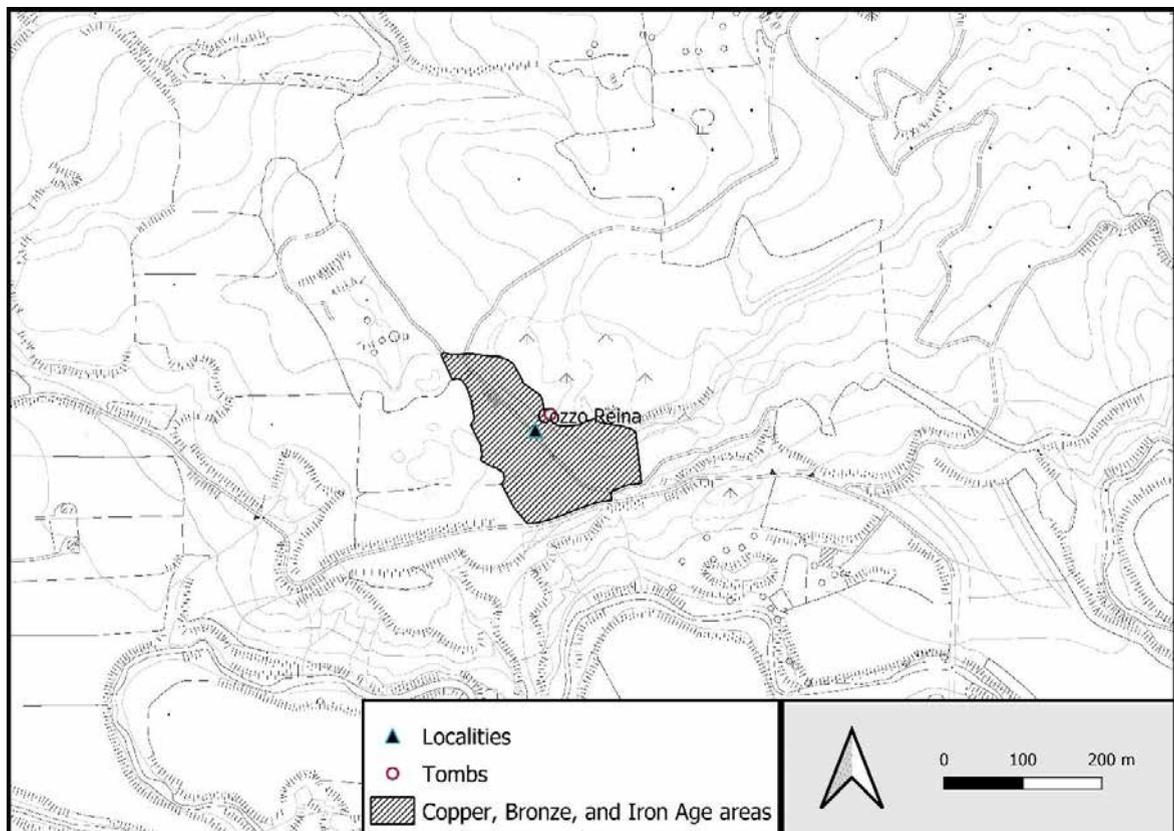


Figure 44. Cozzo Reina, CTR, 1: 5,000 scale.

19. Monte Conca Gola-Zubbio, Campofranco (CL), (CTR sez. 630090; coordinates: 386110, 4149866).

Definition: Topographical unit.

Type: Pottery scatter.

Function: Prehistoric settlement.

Area: ha 0.48.

Altitude: 288m a.s.l.

Classes of materials: Serraferlicchio; Malpasso; Rodi-Tindari-Vallelunga; Castelluccio; Thapsos.

Periods: Neolithic, Copper Age, Bronze Age, medieval period.

Description: Monte Conca is a significant mountain, now designated as a nature reserve, and strategically located near the Gallo d'Oro river. The hill boasts several points of archaeological interest. On the southern slope, there is a group of eight Grotticella and Tholos type tombs in both, although some are now overgrown with vegetation. Further down, near medieval ruins, lies the area known as Monte Conca Gola, or more commonly Zubbio, where evidence of a Bronze Age village has been documented, along with signs of occupation dating back to the Copper Age and even the Neolithic era. A vineyard previously occupied the area, which has since been removed. Not far from here, on a spur facing further south, behind the path leading to the mountain's summit, there are documented burials, including Tholos tombs from the Middle Bronze Age.

20. Monte Conca western slope, Campofranco (CL), (CTR sez. 630090; coordinates: 386110, 4149866).

Definition: Topographical unit.

Type: Pottery scatter.

Function: Prehistoric settlement.

Area: ha 0.7.

Altitude: 365m a.s.l.

Classes of materials: San Cono-Piano Notaro; Castelluccio.

Periods: Copper Age, Middle Bronze Age, Byzantine period.

Description: In the locality of Carruzzata on the southwestern side (coordinates: 3857361, 41497639), which points towards Serra dei Morti, Neolithic ceramics and copper have been found. On the mountain's western side is a settlement dating to the Copper/Bronze Age that overlooks the path leading to the top of the relief and offers a clear view of the confluence between the Gallo d'Oro and the Platani rivers. It also overlooks Chiertasì Hill, making it a crucial point for control over the territory. On top of the mountain is a previously studied fort with an adjoining Byzantine settlement. The prehistoric settlement is on a spur that overlooks the mountain's southern slope, near the main path. This area contains burials dating back to the Late Bronze Age.

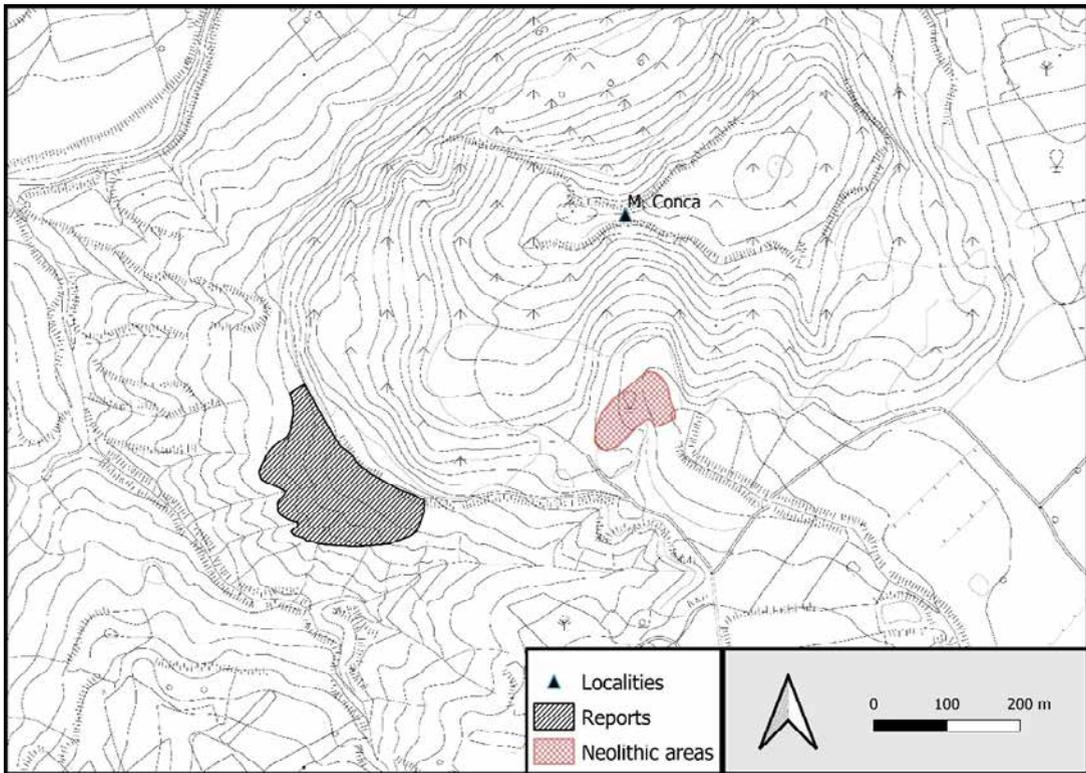


Figure 45. M. Conca, West-Gola Zubbio-Carruzzata, CTR, 1: 5,000 scale.

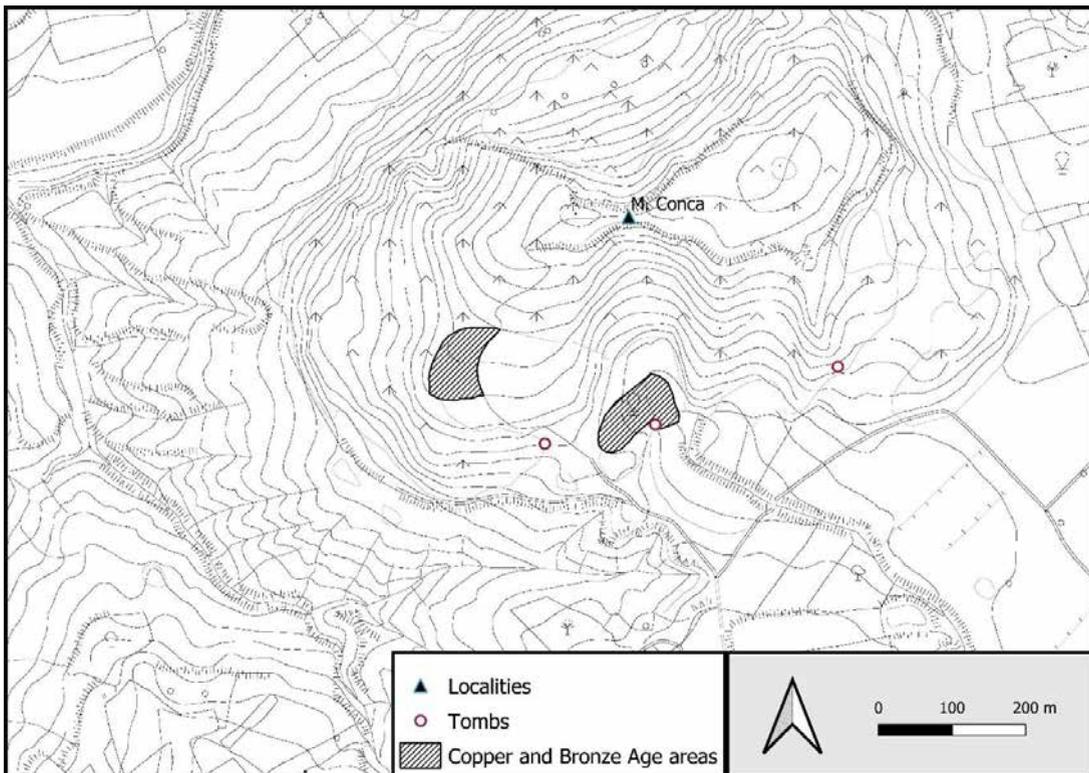


Figure 46. M. Conca West area-Gola Zubbio-Carruzzata, CTR, 1: 5,000 scale.

21. Monte Campanella, Milena (CL), (CTR sez. 630090, coordinates: 386762, 4146270).

Definition: Topographical unit.

Type: Pottery scatter and tombs.

Function: Prehistoric settlement and necropolis.

Area: ha 2.0.

Altitude: 660m a.s.l.

Classes of materials: Thapsos, Mycenaean.

Periods: Bronze Age, Iron Age.

Description: The highest mountain in the Milena area is home to three Bronze Age Tholos tombs. The tombs' entrances are adorned with a triple cornice, and each burial site contains a funeral bed. One of the tombs yielded a bowl and a bronze sword, a rare metal find in this region. Additionally, at the mountain's summit, evidence of lead, bronze, and iron smelting suggests the presence of an ancient settlement nearby.

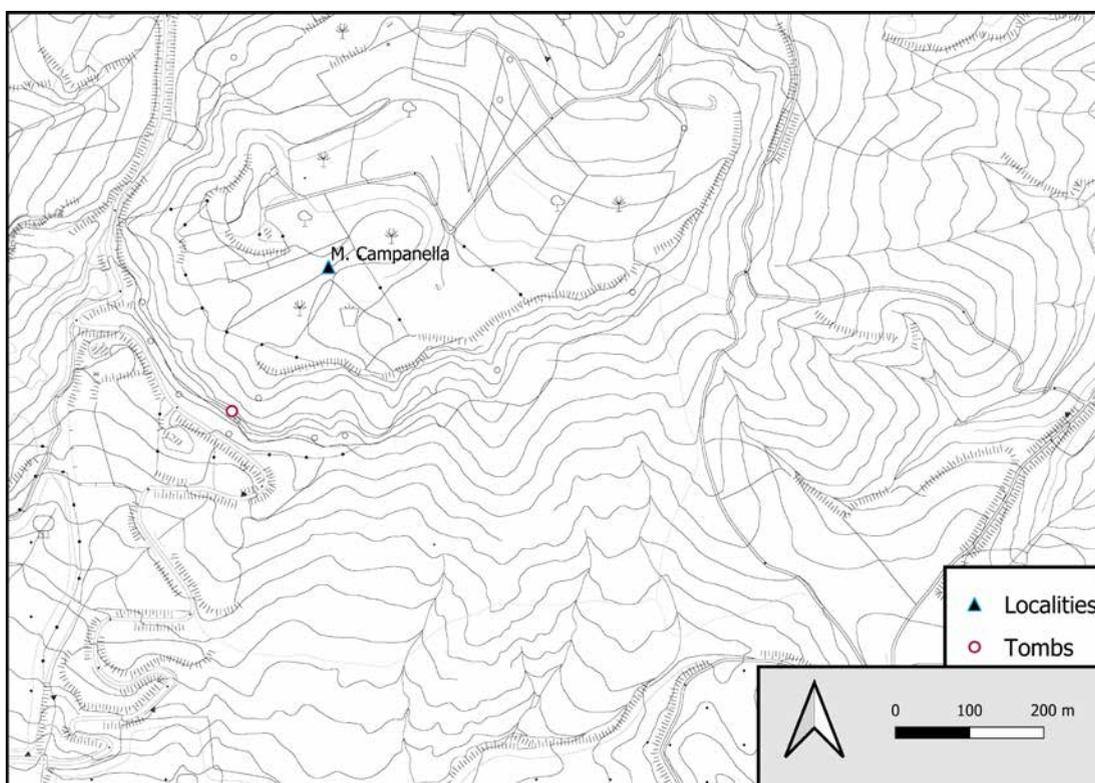


Figure 47. M. Campanella, CTR, 1: 5,000 scale.

22. Pirito-Rocca Amorella, Milena (CL), (CTR sez. 630090; coordinates: 385796, 4148289).

Definition: Topographical unit.

Type: Pottery scatter, structures, and tombs.

Function: Prehistoric settlement with necropolis, Iron Age indigenous and Roman period settlements.

Area: ha 0.52.

Altitude: 488m a.s.l.

Classes of materials: Malpasso; Rodi-Tindari-Vallelunga; Castelluccio; Thapsos; Pantalica Nord; Polizzello.

Periods: Late Copper Age, Bronze Age, Iron Age, Greek period (6th-5th century BC), Late Roman period 4th-6th centuries AD, Byzantine period.

Description: The hill is isolated and located to the southeast of the municipality of Milena. There are signs of occupation dating back to the Copper Age in the same area where a Bronze Age hut and contemporary hearths were later discovered. Specifically, ceramics of the Malpasso style were found. Although little is visible on the surface now, previous tests conducted by La Rosa revealed the remains of a Bronze Age hut and at least four hearths. The settlement was occupied until the period of Pantalica Nord. Some fragments of the Polizzello type were also documented, indicating frequent use of the area in historical times. This is supported by the discovery of ceramics dating back to the 6th and 5th centuries B.C. The area continued to be occupied during the late Roman period, during which a rhomboidal hut was built on the remains of the prehistoric settlement, incorporating two hearths. This building also featured a unique space for storing food. Additionally, during a survey on the top of the hill, remains of a small building from the possible Byzantine era were discovered. It may have served as a small outpost for observing and monitoring the territory, considering its strategic location for controlling routes northward towards Monte Conca and southward towards Serra del Palco.

23. Pirito-Rocca Amorella II, Milena (CL), (CTR sez. 630090; coordinates: 385929, 4148590).

Definition: Topographical unit.

Type: Tombs.

Function: Necropolis.

Area: ha 0.20.

Altitude: 400m a.s.l.

Classes of materials: -

Periods: Late Roman period 4th-6th c.s AD, Byzantine period, Muslim period.

Description: In this area, the presence of tombs on the Northwest slopes of the hill is documented, relating to two different periods: the 4th-6th century and the Muslim period.

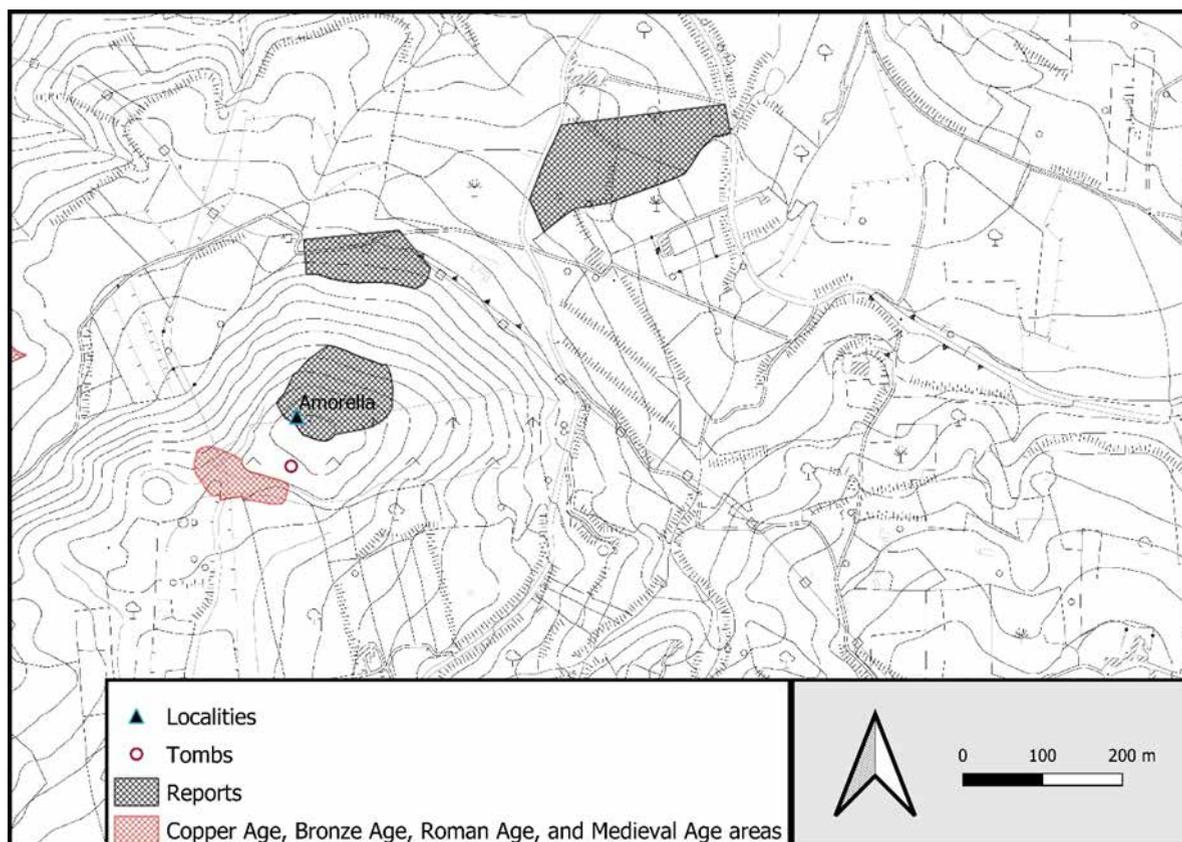


Figure 48. Pirito Rocca Amorella I-II, CTR, 1: 5,000 scale.

24. Serra del Palco Mandria, Milena (CL), (CTR sez. 630090; coordinates: 386279, 4146022).

Definition: Topographical unit.

Type: Pottery scatter, tombs, and structures.

Function: Prehistoric settlement.

Area: ha 0.10.

Altitude: 500m a.s.l.

Classes of materials: Stentinello, San Cono-Piano Notaro, Serrafferlicchio, Malpasso.

Periods: Neolithic period, Copper Age.

Description: Serra del Palco Mandria is the most extensively excavated and documented site. Different settlement phases have been identified, including five Neolithic period and two Copper Age phases. The third Neolithic phase is particularly notable as it includes the construction of an apsidal hut. The area was also occupied during the Copper Age, as evidenced by a hut. A tomb was found in the exact location of the hut of the same period. After the Copper Age, the area showed no further signs of habitation as communities moved to higher altitudes on the same mountain.

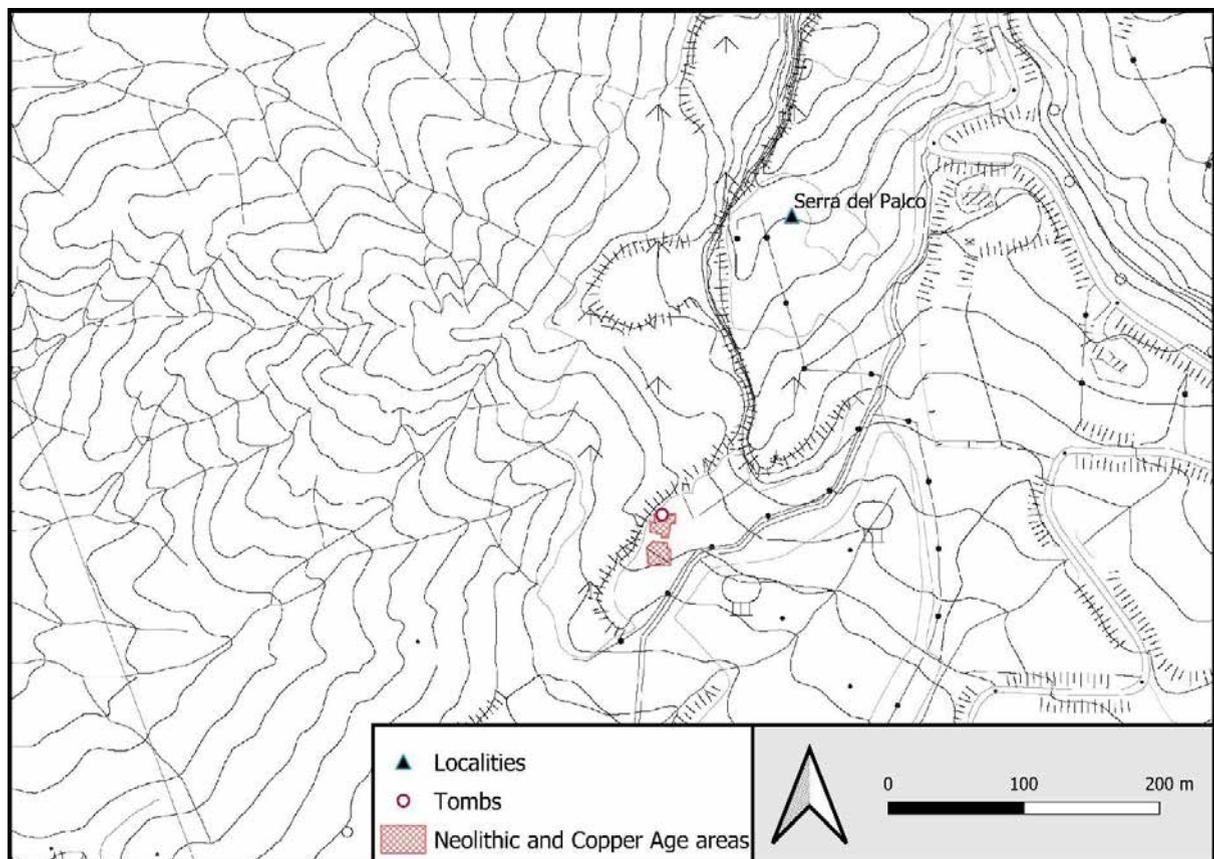


Figure 49. Serra del Palco Mandria, CTR, 1: 3,000. Scale.

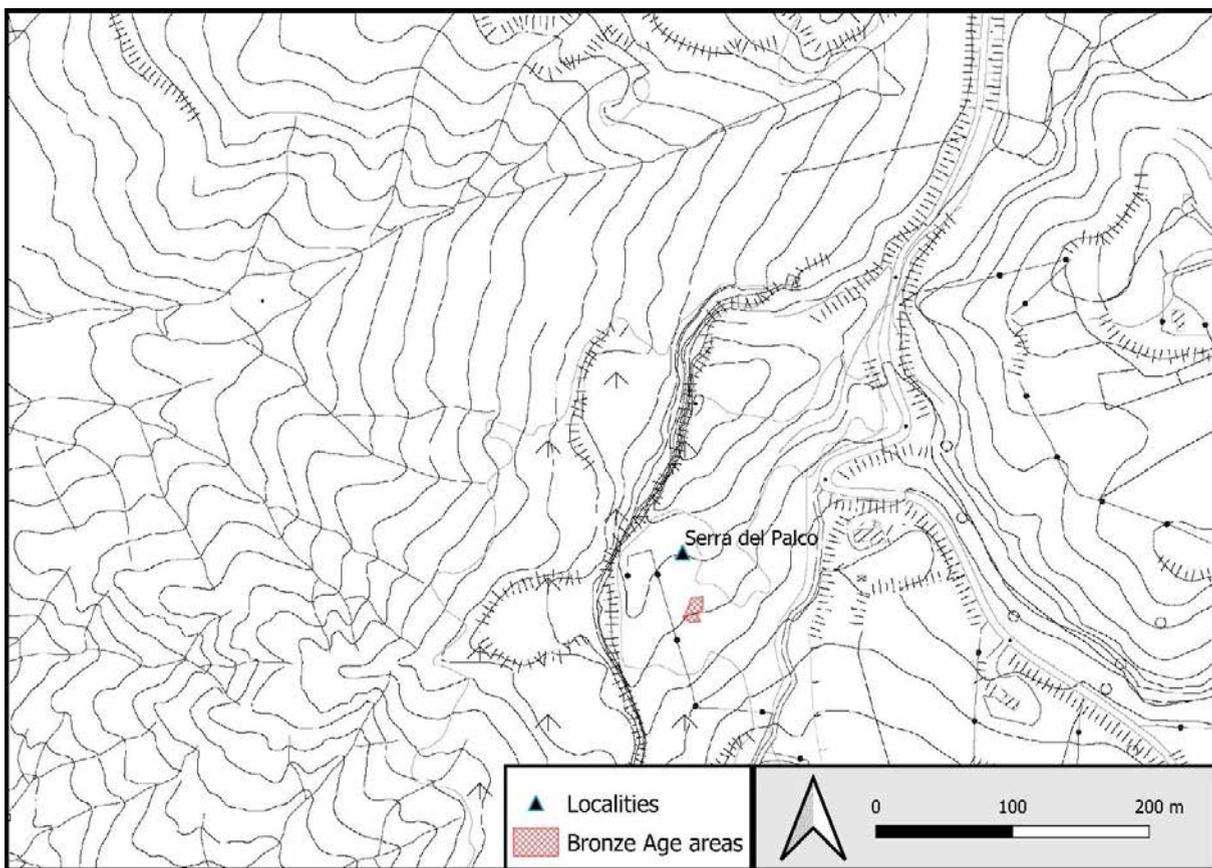


Figure 50. Serra del Palco Mandria, CTR, 1: 3,000 scale.

25. Serra del Palco Sommità, Milena (CL), (CTR sez. 630090; coordinates: 386383, 4146205).

Definition: Topographical unit.

Type: Pottery scatter and structures.

Function: Prehistoric period and Iron age indigenous settlements.

Area: ha 0.450.

Altitude: 580m a.s.l.

Classes of materials: Rodì-Tindari-Vallelunga; Castelluccio; Thapsos; Mycaean, Archaic Greek.

Periods: Bronze Age, Iron Age, Greek Archaic period.

Description: At the top of the mountain, a village of Castellucian origin was built during the Bronze Age and continued to be occupied even during the Thapsian period. Pottery fragments of indigenous and Greek cultures have been found scattered across the plateau, indicating a human presence dating back to the Archaic period. These findings are closely related to those from Mount Campanella, which also showed signs of occupation dating to the same period.

26. Monte Buonotte, Mussomeli (CL) (CTR 630100, CTR sez. 630060; coordinates: 3929716, 41508369).

Definition: Topographical unit.

Type: Pottery scatter and tombs.

Function: Prehistoric settlement with tombs and Roman settlement.

Area: ha 7.9.

Altitude: 380m a.s.l.

Classes of materials: -

Periods: Copper Age, Bronze Age, Roman period.

Description: Many Copper and Bronze Age rock-cut tombs are found along the rocky wall and the mountain's eastern slopes. A short distance away, scattered pottery remains from the Roman period is still visible on the ground.

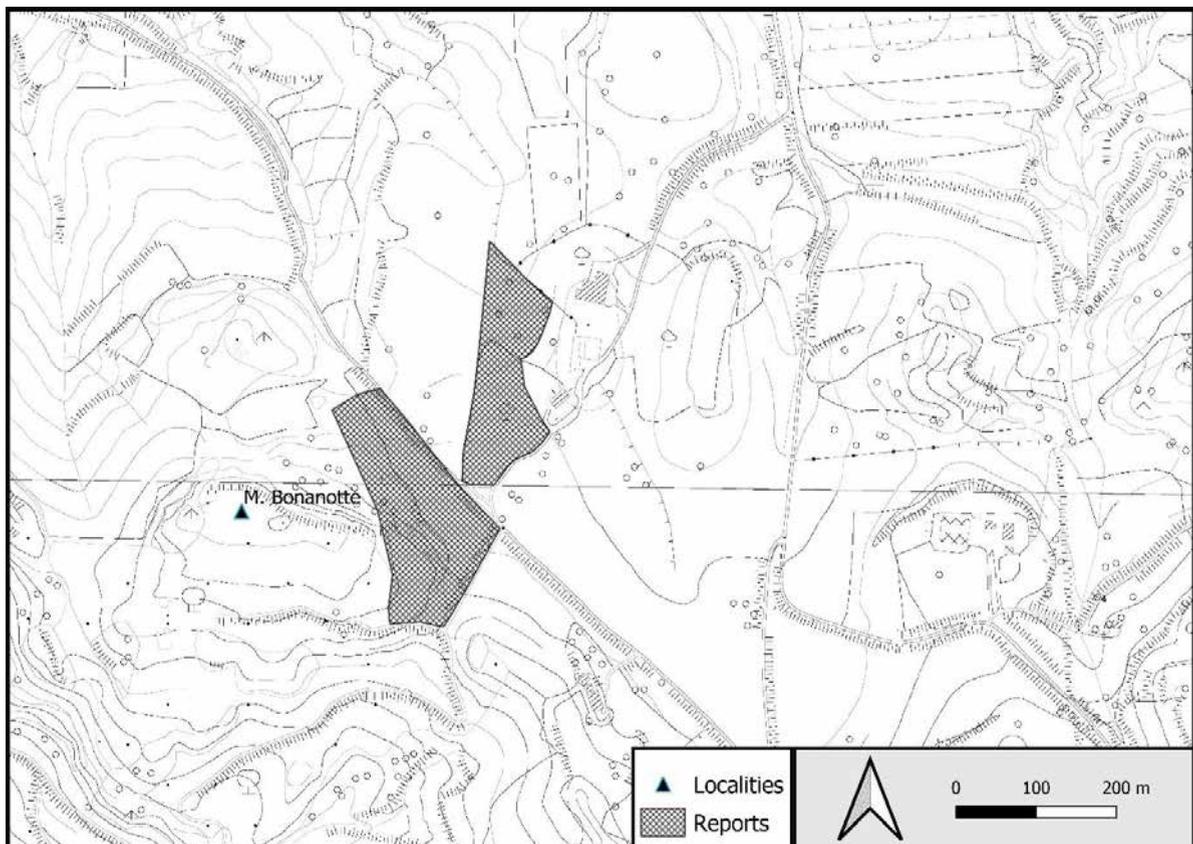


Figure 51. Locality of Buonotte, reports on CTR map, 1: 5,000 scale.

27. Rocca Ranni I, Milena (CL), (CTR sez. 630090; coordinates: 3832850, 41486648)

Definition: Topographical unit.

Type: Pottery scatter, and structures (medieval period?).

Function: Indigenous, Greek, and medieval period settlements.

Area: ha 1.0.

Altitude: 354m a.s.l.

Classes of materials: Sant'Angelo Muxaro, Greek.

Periods: Iron Age, Greek period.

Description: The mountain, currently used entirely for grazing animals, is in front of Rocca Ferro. It is ideal for controlling the territory towards the South and North, especially where the Gallo d'Oro river meets the Platani river. Monte Raffo, Serra dei Morti, and Monte Conte are also visible from the top of this mountain. Its height allows for monitoring the course of the Platani and Gallo d'Oro rivers. This makes it a crucial point for monitoring the territory, and for this reason, it will likely be the site of settlements during the Iron, Greek, and medieval periods. A possible medieval period fort is evidenced by the remains of walls at the top of the mountain.

28. Iannicu, Milena (CL), (CTR sez. 630100; coordinates: 3896435, 41497037).

Definition: Topographical unit.

Type: Pottery scatter.

Function: Prehistoric period settlement.

Area: ha 0.47.

Altitude: 360m a.s.l.

Classes of materials: San Cono - Piano Notaro; Serrafferlicchio; Malpasso.

Periods: Neolithic period, Copper Age.

Description: Along the mountain's southern slopes, which overlook the Gallo d'Oro river, are well-documented ceramic remains from the Middle-Late Neolithic period. Ceramics from the entirety of the Copper Age have also been found. This makes it an important location that should be further explored through excavations to confirm existence of a settlement. Additionally, the site is strategically positioned to control the routes crossing the Gallo d'Oro and leading towards the contemporary settlements of Mezzebi, San Paolino, and Monte Conca to the west.

29. Monte Raffe I, Mussomeli (CL), (CTR sez. 630060; coordinates: 392370, 4152013).

Definition: Topographical unit.

Type: Pottery scatter, tombs, and structures

Function: Settlement.

Area: ha 5.0.

Altitude: 460m a.s.l.

Classes of materials: Sant'Angelo Muxaro; Greek.

Periods: Iron Age indigenous, Archaic and Hellenistic period.

Description: On the northwest facing front of the relief, numerous rock-cut tombs are scattered in groups. Ceramics from the Copper and Bronze Ages were found near these tombs. The mountain is strategically positioned near where the Salito River joins the Gallo d'Oro. From the summit, one can survey the valleys to the north and west towards Mount Iannicu. Due to its advantageous location, the mountain was occupied in the Iron Age, with the establishment of an indigenous settlement and a necropolis. Subsequently, the site was Hellenized around the 6th century BC. The settlement gradually expanded around the 4th century BC.

30. Monte Raffe II, Mussomeli (CL), (CTR sez. 630060; coordinates: 3921723, 41523535).

Definition: Topographical unit.

Type: Pottery scatter and tombs.

Function: Settlement and necropolis.

Area: ha 2.1.

Altitude: 100m a.s.l.

Classes of materials: San Cono-Piano Notaro; Sant'Angelo Muxaro.

Periods: Copper Age, Late Bronze Age.

Description: On the northwest face of the mountain, numerous rock-cut tombs are gathered in scattered groups. Ceramics from the Copper and Bronze Ages have been found near these tombs. The hill is strategically located near the area where the Salito river meets the Gallo d'Oro river. It is possible to control the valleys that open to the North and West towards Mount Iannicu from the top of the hill.

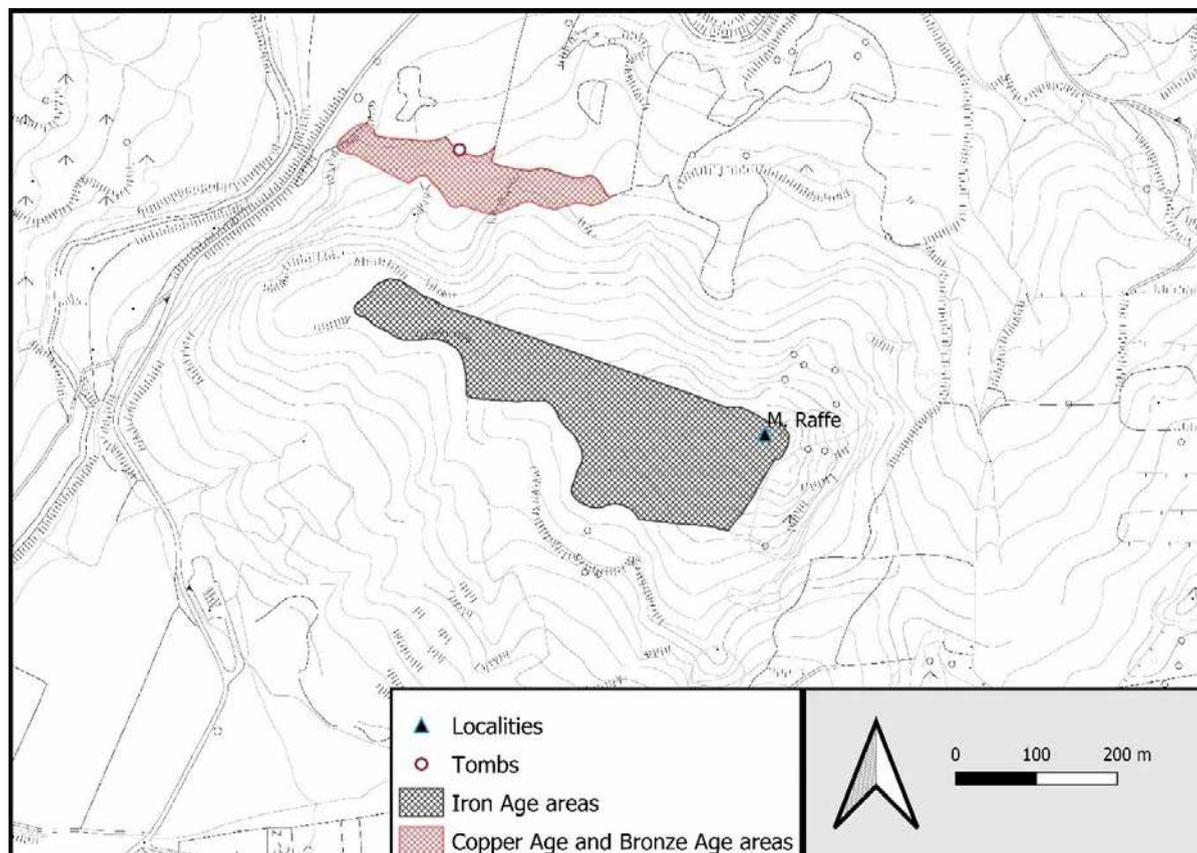


Figure 52. Monte Raffe I-II, CTR, 1:5,000 scale.

31. Rocca Ferro I

Milena (CL), (CTR sez. 630090; coordinates: 381989, 4150008).

Definition: Topographical unit.

Type: Pottery scatter and structures.

Function: Indigenous settlement.

Area: ha 3.5.

Altitude: 300m a.s.l.

Classes of materials: Ceramica Piumata (Pantalica Sud).

Periods: Iron Age, 7th-6th c.s BC.

Description: The mountain overlooks the Passo Funnuto, a narrow point along the Platani River, and provides a strategic vantage point for controlling access to the coast of Agrigento. Across the river lies Rocca Ranni, making this location crucial for territorial surveillance. Its elevation and visibility from surrounding areas suggest its significance during the Archaic period, particularly with the increasing

Greek influence and the need to fortify the territory. There is no evidence for Bronze Age occupation. Remnants of indigenous settlements and ancient wall structures from the 7th and 6th centuries BC have been found.

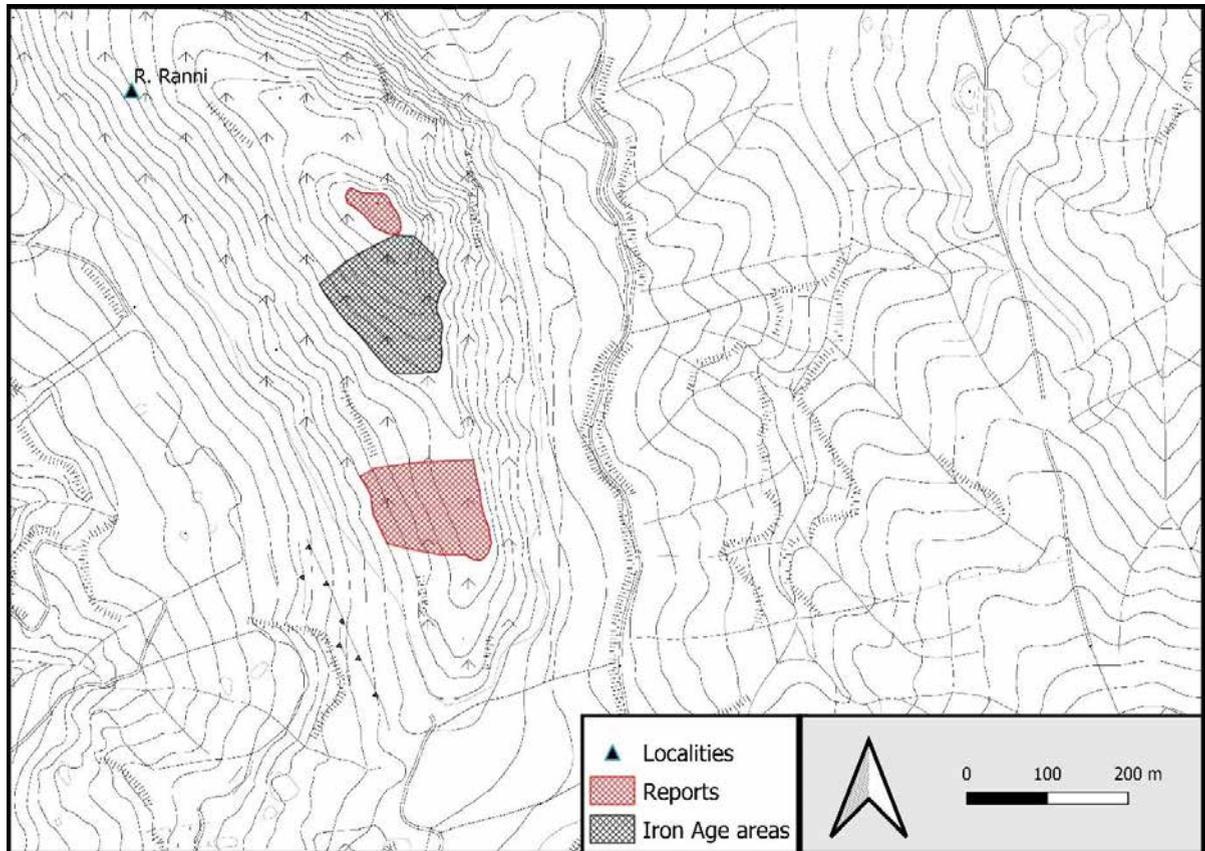


Figure 53. Rocca Ranni I-II, CTR, 1: 5,000 scale.

32. Rocca Ferro II, Milena (CL), (CTR sez. 630090; coordinates: 381544, 4149675).

Definition: Topographical unit.

Type: Cave and pottery scatter.

Function: Cave tombs and settlements.

Area: ha 6.0.

Altitude: 300m a.s.l.

Classes of materials: San Cono-Piano Notaro, Serrafferlicchio.

Periods: Early and Middle Copper Age.

Description: The area exposed in the direction of the Platani river shows signs of occupation during the Early Copper Age. This is evidenced by a cave that yielded materials in the San Cono-Piano Notaro and Serrafferlicchio style.

33. Piccirillo, Campofranco (CL), (CTR sez. 630050; coordinates: 3884937, 41514475).

Definition: Topographical unit.

Type: Tombs.

Function: Necropolis.

Area: ha 0.18.

Altitude: 300m a.s.l.

Classes of materials: -

Periods: Bronze Age.

Description: On the hill north of the Gallo d'Oro river, about ten rock-cut burials have been documented. One of these burials has an ellipsoidal plan and so can be considered a Tholoid tomb.

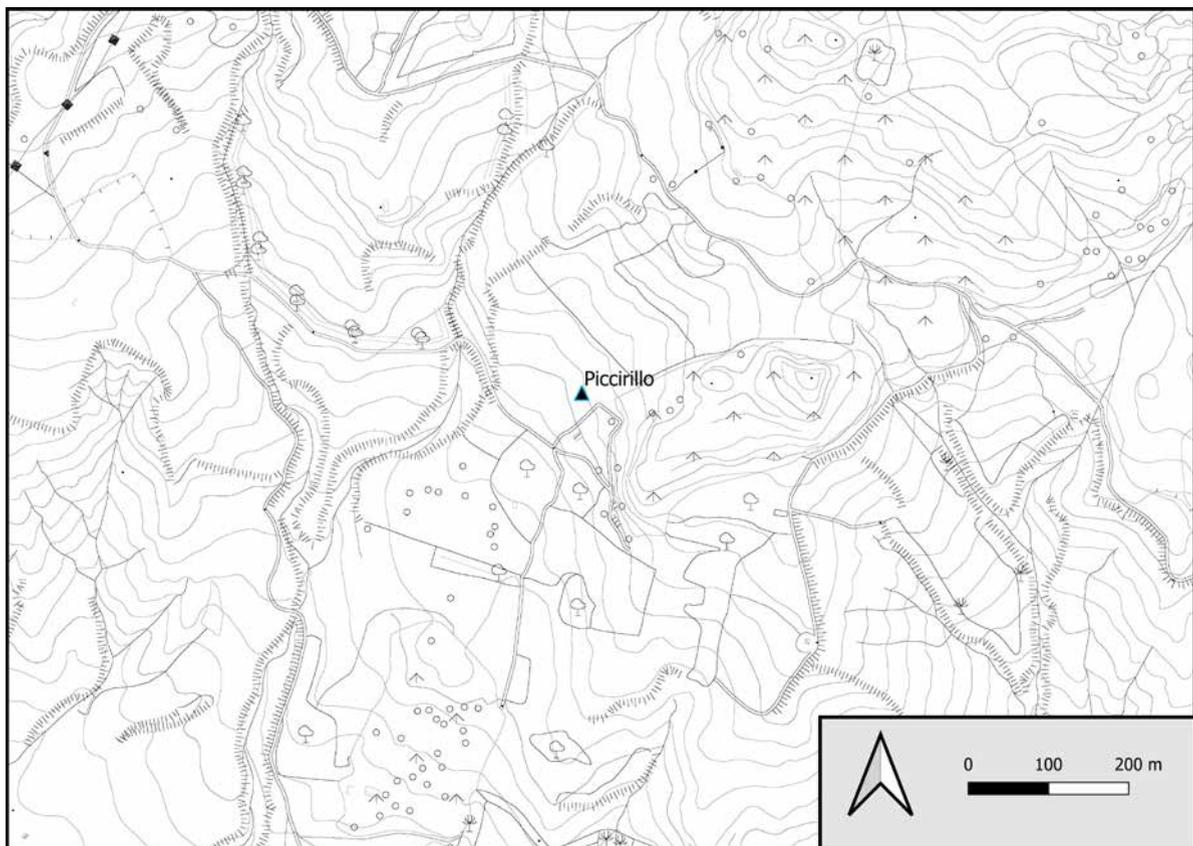


Figure 54. Piccirillo, Bronze Age area on CTR map, 1: 5,000 scale.

34. Amorella, Milena (CL), (CTR sez. 630090; coordinates: 3862960, 41486955).

Definition: Topographical unit.

Type: Pottery scatter.

Function: Late Roman period, Byzantine period, Muslim period, and Norman period settlements.

Area: ha 2.5.

Altitude: 360m a.s.l.

Classes of materials: Imperial Roman pottery, medieval pottery.

Periods: Imperial Roman period, Byzantine period, Muslim period, and Norman period.

Description: Numerous ceramic fragments have been identified at the foot of Rocca Amorella, to the east and immediately in front of Mount Maniscalco. These sherds include ceramics from the Late Roman, Byzantine, Muslim, and Norman periods.

35. M. Grande V, Milena (CL), (CTR sez. 630090; coordinates: 3848832, 41470600).

Definition: Topographical unit.

Type: Pottery scatter and cave.

Function: Necropolis.

Area: ha 0.001.

Altitude: 310m a.s.l.

Classes of materials: -

Periods: Prehistoric period.

Description: Heading slightly further south, at approximately the same altitude as caves 1, 2, and 4, we notice a possible cave showing clear indications of use during several prehistoric phases. However, further investigation is needed to confirm.

36. Rocca Aquilia IV, Milena (CL), (CTR 630100; coordinates: 3895293, 41467100).

Definition: Topographical unit.

Type: Pottery scatter and tombs.

Function: Roman settlement and necropolis.

Area: ha 0.4.

Altitude: 340m a.s.l.

Classes of materials: Republican and Imperial Roman period pottery.

Periods: Republic and Imperial Roman Age.

Description: Near the northern slope (Fig. 35), in an area devoted to growing wheat, a Roman settlement or production center is likely to be located, indicated by the abundance of scattered ceramics in the soil. On the north wall of Rocca Aquilia, there is still a visible tomb, possibly also from the Roman era.

37. Pernice, Milena (CL), (CTR sez. 630090; coordinates: 3846500, 41497221).

Description: Topographical unit.

Type: Pottery scatter and tombs.

Function: settlement and necropolis.

Area: ha 0.51.

Altitude: 240m a.s.l.

Classes of materials: Castelluccio; Thapsos; Greca.

Periods: Bronze Age, Greek period.

Description: Traces of habitation dating back to the Middle Bronze Age and Grotticella type rock-cut tombs are also documented in this area. The location was also occupied during the Greek colonization period in Sicily, as evidenced by the ceramics from this time.

38. Rocca Ranni II, Milena (CL), (CTR sez. 630090; coordinates: 383387, 41483763)

Definition: Topographical unit.

Type: Pottery scatter.

Function: Prehistoric settlement.

Area: ha 1.3.

Altitude: 312m a.s.l.

Classes of materials: Malpasso, Rodi-Tindari-Vallelunga.

Periods: Late Copper Age, Bronze Age.

Description: The mountain, currently used entirely for grazing animals, is in front of Rocca Ferro. It is ideal for overseeing the territory to the south and north, especially where the Gallo d'Oro River intersects the Platani (see Fig. 53). A bit lower than the summit, on a plateau that faces South and overlooks the narrow passage between the mountain and Serra dei Morti, we can see evidence of ceramics dating back to the Bronze Age.

39. Località Serpente I, Mussomeli (CL), (CTR sez. 630060; coordinates: 3914185, 41912804).

Definition: Topographical unit.

Type: Tombs.

Function: Necropolis.

Area: ha 0.04.

Altitude: 65m a.s.l.

Classes of materials: -

Periods: Bronze Age.

Description: Numerous Grotticella type rock-cut tombs are on a small rocky spur, exposed on the eastern slopes, but all of them face the Gallo d'Oro river.

40. Località Serpente II, Mussomeli (CL), (CTR sez. 630060; coordinates: 3913682, 41511727).

Definition: Topographical unit.

Type: tombs.

Function: necropolis.

Area: ha 0.11.

Altitude: 65m a.s.l.

Classes of materials: -

Periods: Bronze Age.

Description: Numerous Grotticella type rock-cut tombs are on a small rocky spur, exposed on the eastern slope, but all face the Gallo d'Oro river.

41. Località Serpente III, Mussomeli (CL), (CTR sez. 630060; coordinates: 3913315, 41511012).

Definition: Topographical unit.

Type: Tombs.

Function: Necropolis.

Area: ha 0.34.

Altitude: 81m a.s.l.

Classes of materials: -

Periods: Bronze Age.

Description: Grotticella tombs on a hill facing the Gallo d'Oro River.

42. Lantaro Minico, Mussomeli (CL), (CTR sez. 630060; coordinates: 3917533, 41510399).

Definition: Topographical unit.

Type: Tombs.

Function: Necropolis.

Area: ha 0.12.

Altitude: 98m a.s.l.

Classes of materials: -

Periods: Copper Age, Bronze Age (?).

Description: There are 15 rock-cut tombs on a rocky outcrop, directly overlooking a bend in the Gallo d'Oro river. The tombs face northwest and are at a high altitude. They are located on an extremely steep and difficult-to-climb slope, indicating that over the centuries, landslides and erosive forces related to the river's flow have significantly altered the shape of the hill.

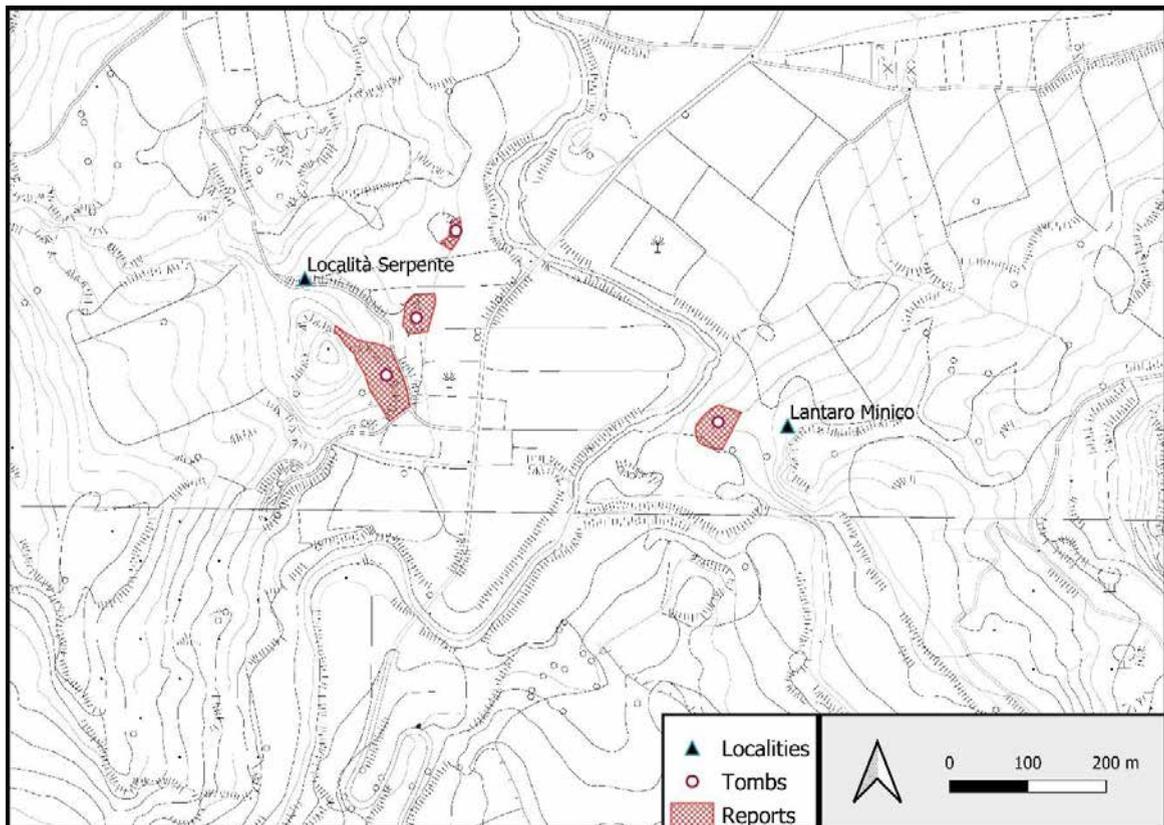


Figure 55. Lantaro Minico, reports area on CTR map, 1: 5,000 scale.

43. Località Vetrano, Milena (CL), (CTR sez. 630090; coordinates: 3893552, 41497283).

Definition: Topographical unit.

Type: Pottery scatter.

Function: Greek period settlement.

Area: ha 1.6.

Altitude: 300m a.s.l.

Classes of materials: Greek pottery.

Periods: Archaic Greek period.

Description: Numerous ceramic fragments from the Greek era have been found on a plateau (Fig. 56).

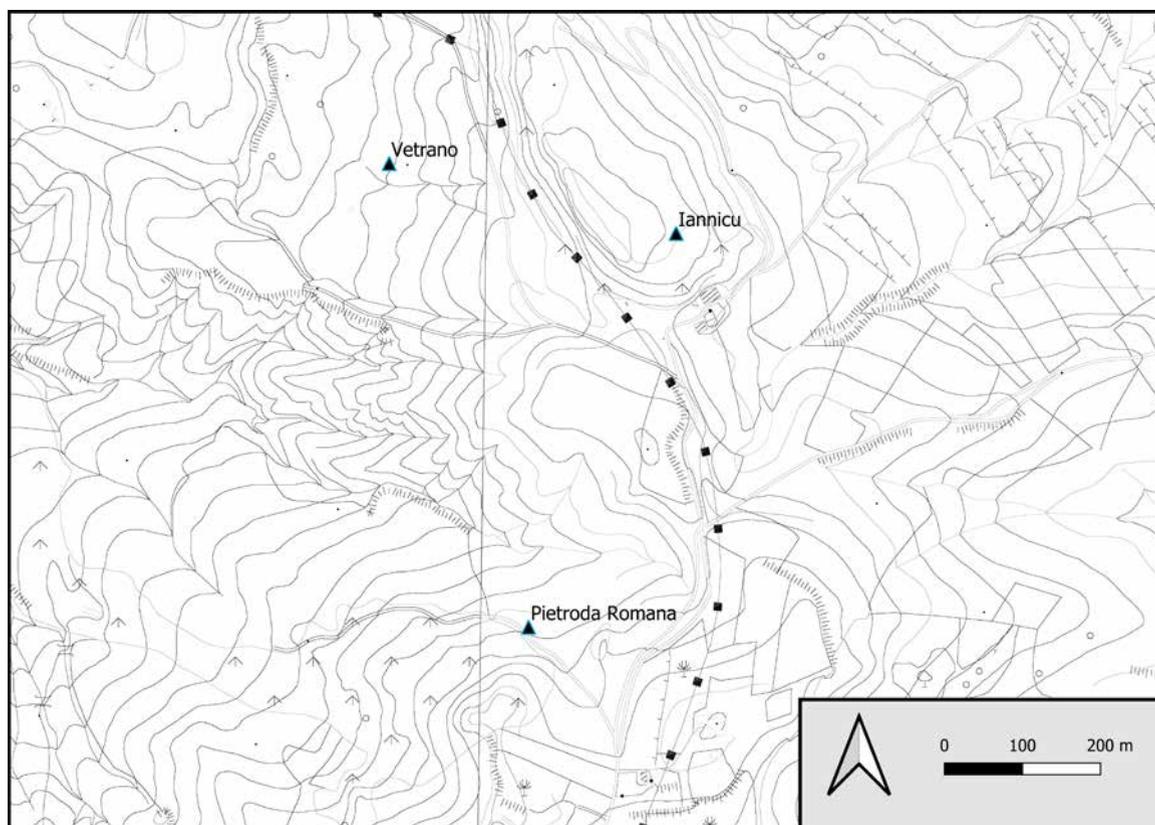


Figure 56. Vetrano, Iannicu and Pietroda Romana, CTR, 1: 5,000 scale.

44. Pietroda Romana, Milena (CL), (CTR sez. 630100; coordinates: 3894952, 41491747).

Definition: Topographical unit.

Type: Pottery scatter.

Function: Prehistoric settlement.

Area: ha 0,44.

Altitude: 380 m a.s.l.

Classes of materials: Castelluccio.

Periods: Copper Age, Bronze Age.

Description: On a plateau overlooking the road from Milena to Iannicu, signs of habitation dating back to the Copper and Bronze Ages have been documented (Fig. 56).

45. Monte Conca Carruzzata, Campofranco (CL) (CTR sez. 630090; coordinates: 3857361, 41497639)

Definition: Topographical unit.

Type: Pottery scatter.

Function: Prehistoric settlement.

Area: ha 2.0.

Altitude: 257m a.s.l.

Classes of materials: San Cono-Piano Notaro, Malpasso.

Periods: Neolithic period, Copper Age.

Description: On the South/West side of Monte Conca, in the locality of Carruzzata, Neolithic and Copper Ages pottery were scattered across a large plateau about 150 meters long (Fig. 45). It is believed that the continuous accumulation of earth and debris from the upper parts of the mountain has caused the archaeological remains to be buried several meters deep. The settlement's strategic location provided a vantage point for overseeing the Gallo d'Oro crossing and the valley behind Monte Conca, leading towards Milena.

Catalogue of archaeological sites

N.	Toponym	Locality	Type	Chronology	Bibliography
1	M. S. Paolino	Campofranco	Settlement	Middle-Late Neolithic period, Early and Middle Copper Age	Maniscalco 1997; Palio 1997; Piano Paesaggistico 1999; La Rosa 1997
2	Cimicia-Finaita	Montedoro	Settlement	Late Copper Age; Early-Middle Bronze Age	Calderone et alii 2022; La Rosa 1997; Maniscalco 1997
3	Mezzebi	Campofranco	Settlement	Late Neolithic period, Late Copper Age, Early-Middle Bronze Age	Guzzone 1997; Palio 1997; Privitera 1997
4	Pizzo Menta	Milena	Settlement	Neolithic period, Middle-Late Copper Age	La Rosa 1997; Maniscalco 1997
5	Rocca Aquilia I	Milena	Settlement	Medieval Age	Piano Paesaggistico 1999
6	Rocca Aquilia II	Milena	Settlement	Middle-Late Neolithic period, Copper Age, Middle-Late Bronze Age	Castellana 2002; Guzzone 1997; La Rosa 1997; Piano Paesaggistico 1999;
7	Rocca Aquilia III	Milena	Settlement	Copper Age, Middle-Late Bronze Age	Castellana 2002; La Rosa 1997; Piano Paesaggistico 1999.
8	M. Grande I	Milena	Settlement	Middle-Late Neolithic period, Copper Age, Middle Bronze Age	Guzzone 1997; La Rosa 1997; Maniscalco 1997; Palio 1997;
9	M. Grande II	Milena	Necropolis	Copper Age, Middle Bronze Age	La Rosa 1997; Maniscalco 1997; Palio 1997
10	M. Grande III	Milena	Necropolis	Copper Age	La Rosa 1997; Maniscalco
11	M. Grande IV	Milena	Necropolis	Middle-Late Neolithic period, Copper Age, Middle Bronze Age	Guzzone 1997; La Rosa 1997; Maniscalco 1997
12	Mustansello I	Milena	Settlement, Necropolis	Copper Age, Middle Bronze Age	Ardesia 2014; Maniscalco 1997
13	Mustansello II	Milena	Necropolis	Copper Age, Bronze Age	Ardesia 2014; Maniscalco 1997

14	Chiartesi	Campofranco	Settlement	Bronze Age, Iron Age	Ardesia 2014; La Rosa 1997
15	Zellante	Montedoro	Settlement	Neolithic period, Copper Age, Middle Bronze Age, Roman Age, Byzantine Age	Guzzone 1997; La Rosa 1997; Maniscalco 1997;
16	Baruna	Milena	Settlement	Copper Age, Bronze Age	Ardesia 2014; Maniscalco 1997; Palio 1997
17	Raffo Piano Zazzi	Montedoro	Settlement	Bronze Age, Iron Age	La Rosa 1997
18	Cozzo Reina	Mussomeli	Settlement	Copper Age, Middle Bronze Age, Iron Age, and Greek period.	La Rosa 1997; Maniscalco 1997; Palio 1997
19	M. Conca Gola-Zubbio	Campofranco	Settlement and Necropolis	Neolithic period, Copper Age, Bronze Age, Medieval Age	La Rosa 1997
20	M. Conca – western slope	Campofranco	Settlement	Copper Age, Middle Bronze Age, Medieval Age	Arcifa 1997; La Rosa 1997
21	M. Campanela	Milena	Necropolis	Bronze Age, Iron Age	Castella 2002; La Rosa 1997; Militello 1997; Tomasello 1996; Tusa 1999
22	Pirìto-Rocca Amorella	Milena	Settlement	Late Copper Age, Bronze Age, Iron Age, Greek period, Roman Age, Medieval Age	Arcifa 1997; Ardesia 2014; Mandruzzato 1997; Maniscalco 1997; La Rosa 1989, 1997; Palio 1997; Piano Paesaggistico 1999;
23	Pirìto-Rocca Amorella II	Milena	Necropolis	Late Roman Age, Byzantine Age, Arabic Age	Arcifa 1997; La Rosa 1989, 1997; Mandruzzato 1997; Piano Paesaggistico 1999
24	Serra del Palco Mandria	Milena	Settlement	Neolithic period, Copper Age	La Rosa 1985, 1994, 1997; Nicoletti 1997; Piano Paesaggistico 1999
25	Serra del Palco Sommità	Milena	Settlement	Bronze Age, Iron Age, Greek period	Ardesia 2014; La Rosa 1997; Piano Paesaggistico 1999;
26	M. Buonanotte	Mussomeli	Settlement, Necropolis	Copper Age, Bronze Age, Roman Age	N.A.
27	Rocca Ranni I	Milena	Settlement	Iron Age, Greek period	La Rosa 1997

APPENDIX: TOPOGRAPHICAL CATALOGUE OF SITES

28	Iannicu	Milena	Settlement	Neolithic period, Copper Age	Guzzone 1997; Maniscalco 1997
29	M. Raffe I	Mussomeli	Settlement, Necropolis	Indigenous Age, Greek Archaic, and Hellenistic Ages	Congiu 2018a, 2018b; Panvini et alii 2018
30	M. Raffe II	Mussomeli	Settlement, Necropolis	Copper Age, Late Bronze Age	Ardesia 2014; La Rosa 1997; Maniscalco 1997
31	Rocca Ferro I	Milena	Settlement	Iron Age	La Rosa 1997
32	Rocca Ferro II	Milena	Settlement	Ancient and Middle Copper Ages	Maniscalco 1997
33	Piccirillo	Campofranco	Necropolis	Bronze Age	La Rosa 1997
34	Amorella	Milena	Pottery scatter	Roman Imperial Age, Byzantine Age, Arab Age, Norman Age	Arcifa and Tomasello 2005
35	M. Grande V	Milena	Tomb	Prehistoric period	N.A.
36	Rocca Aquilia IV	Milena	Tomb	Roman Age	Arcifa and Tomasello 2005
37	Pernice	Milena	Settlement	Middle Bronze Age, Greek period	La Rosa 1997
38	Rocca Ranni II	Milena	Settlement	Late Copper Age, Bronze Age	Palio 1997
39	Serpente I	Mussomeli	Necropolis	Bronze Age, Iron Age	N.A.
40	Serpente II	Mussomeli	Necropolis	Prehistoric period	N.A.
41	Serpente III	Mussomeli	Necropolis	Prehistoric period	N.A.
42	Lantaro Minico	Mussomeli	Necropolis	Prehistoric period	N.A.
43	Vetrano	Milena	Pottery scatter	Greek period	N.A.
44	Pietroda Romana	Milena	Pottery scatter	Prehistoric period	N.A.
45	M. Conca Carruzzata	Campofranco	Pottery scatter	Prehistoric period	N.A.

