Journal of Mediterranean Archaeology 34.1 (2021) 28-57
ISSN (Print) 0952-7648
ISSN (Online) 1743-1700

Blowin' in the Wind: Settlement, Landscape and Network Dynamics in the Prehistory of the Aeolian Islands

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Abstract

This study provides a critical and interdisciplinary review of the archaeological record of the Aeolian Islands (Italy), from their earliest settlement in the mid-sixth millennium BC (Middle Neolithic) to the establishment of trans-Mediterranean networks at the end of the second millennium BC (Final Bronze Age). We combine archaeological, archaeometric, bioarchaeological and environmental data to explore the interplay between different prehistoric practices and their spatial settings, revisiting old evidence and presenting new data. The resulting picture reveals different levels of interaction and the critical role of these small island communities in establishing and/or facilitating networks at the local and (inter)regional scale. Ceramic networks allow us to trace connections between the islands and their neighbours, underscoring the centrality of the island of Lipari, which is further supported by the spatial analysis of the settlement data, in particular concerning the growing web of intervisibility between contemporary settlements on the Aeolian Islands, Sicily and Calabria. We also highlight significant environmental factors, such as arid phases and volcanic events, and assess their impact in light of the islanders' responses, underscoring their long-term adaptability to the challenges of insularity. The study is supported by a new and up-to-date database of 50 prehistoric sites, incorporating unpublished results of ongoing archaeological investigations by the authors.

Keywords: Aeolian Islands, connectivity, insularity, islandscape, island effect, Lipari, network

https://doi.org/10.1558/jma.43201

Introduction: Aims and Objectives

Named after Aeolus, divine keeper of the winds and king of the floating island of Aeolia (*Odyssey* 10.3.22), the Aeolian Islands are a small volcanic archipelago located in the southern Tyrrhenian Sea, some 20 km off the northeastern coast of Sicily and about 50 km off the southwestern coast of Calabria (Figure 1). Despite their small size (ranging from 3.4 to 37.6 sq km), the seven islands played a prominent role in the prehistory of the central Mediterranean, owing to the presence of obsidian and their strategic position in relation to maritime routes. Since their first settlement, dated to the Middle Neolithic (mid-sixth millennium BC), these island communities experienced phases of expansion and contraction that are well documented in the archaeological record, spanning over five millennia. Only Vulcano, the island closest to Sicily, was uninhabited until recent times, due to the cyclical occurrence of eruptive events at La Fossa crater; nonetheless, its mineral sources (sulphur and alum) were exploited as early as the Bronze Age.

The Aeolian Islands are among the best-studied archaeological areas in the central Mediterranean, with 50 prehistoric and protohistoric sites so far identified. Archaeological investigation goes back to the late nineteenth century (Libertini 1921; Orsi 1929), but it was the work carried out by Luigi Bernabò Brea and Madeleine Cavalier during the second half of the twentieth century that led to the discovery of most sites and provided a firm point of reference in Mediterranean prehistory, producing a clear stratigraphic and ceramic sequence currently supported by 69 radiocarbon dates (published in full in Martinelli 2020: 170-77) (Figure 2). This research has been followed up in recent years by two of the current authors (Martinelli and Levi) as well as others, with excavations at Portella on Salina (Martinelli 2005; 2010), Filo Braccio on Filicudi (Martinelli *et al.* 2010), Punta Milazzese on Panarea and Rinicedda on Salina (Martinelli 2016), San Vincenzo on Stromboli (Levi *et al.* 2011; 2017; 2018; Bettelli *et al.* 2016; Vidale *et al.* 2018) and a field survey at Castellaro on Lipari (Nomi and Speciale 2017). Furthermore, planned walkovers by the authors between 2016 and 2017 added three previously unknown sites (Martinelli and Lo Cascio 2018).

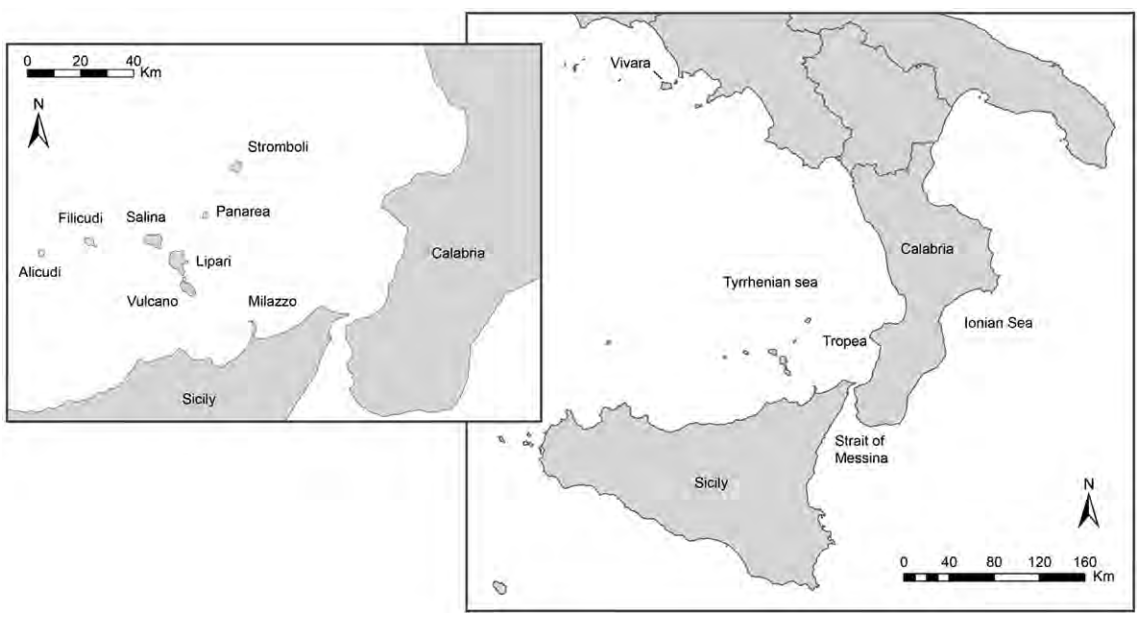

Figure 1. Map of the Aeolian Islands in the southern Tyrrhenian Sea (adapted from Levi *et al.* 2020b: 3, fig. 1).

General Chronology	Absolute Chronology BC	Aeolian Islands facies	LIPARI	SALINA	FILICUDI	PANAREA	STROMBOLI	ALICUDI	VULCANO
Final Bronze Age	1150 - 900	*Ausonian II*	■						
Recent Bronze Age	1300 - 1150	*Ausonian I*	■						
Middle Bronze Age 3	1500 - 1300	*Milazzese*	■	■	■	■			
Middle Bronze Age 1-2	1700 - 1500	*Capo Graziano II*	■	■	■	■	■	■	
Early Bronze Age	2200 - 1700	*Capo Graziano I*	■	■	■	■	■		
Late Chalcolithic	(?) 2800 - 2200	*Piano Quartara*	■	■		■	■		
Early and Middle Chalcolithic	3800 - 2800 (?)	*Pianoconte*	■	■			■		
	4100 - 3800	*Diana Spatarella*	■	■			■		
Late Neolithic	4500 - 4100	*Diana*	■	■	■	■			
Middle Neolithic	5000 - 4500	*Serra d'Alto*	■			■			
	5500 - 5000	*Tricromica*	■						
		Stentinello	■	■					

Figure 2. Chronology and timelines for the Aeolian Islands (by M.C. Martinelli).

There is a long tradition of employing field survey in Mediterranean island archaeology, but more so in the Aegean than in the central and western Mediterranean. For practical reasons, it is rare that an island can be surveyed in its entirety or that a whole archipelago is subject to the same degree of archaeological exploration. By way of reference, the Melos island survey covered *ca.* 20% of the overall surface of the island (151 sq km) (Cherry 1982); the Kea survey, 18 sq km of the total island surface (130 sq km) (Cherry *et al.* 1991); and the Kythera survey, 100 sq km or around a third of the overall 280 sq km surface (Kythera Island Project n.d.). Individually, the Aeolian Islands are smaller than these Aegean examples and, while they have not been subjected to systematic and intensive surveys in the same way, they have been studied in considerable detail over the years. In size, they are comparable to the island of Antikythera: at just under 20 sq km, this island has been surveyed almost in its entirety (95% coverage) (Bevan and Conolly 2013). More recently, the Keros-Naxos Seaways Project (2015–2018) (Department of Archaeology, University of Cambridge n.d.) and the Small Cycladic Islands Project (2019–2020) (Knodell *et al.* 2020) have widened the net to capture interisland dynamics. There is clearly great potential for this kind of investigation, both to find new sites and refine our understanding of known sites, especially on the smaller and less intensely inhabited of the Aeolian Islands.

The present study synthesises the results of over 70 years of fieldwork (mostly comprising excavations) and explores the potential of an interdisciplinary approach (combining archaeology, archaeometry, palaeoecology and natural history) to evaluate the Aeolian Islands as a case study for understanding broader issues of cultural connectivity, following key trends in island archaeology (Cherry and Leppard 2014; Dawson 2014; 2019b; Broodbank 2018; DiNapoli and Leppard 2018; Fitzpatrick 2018). In doing so, we address several questions, from two interlocking perspectives. The first issue concerns interaction between the Aeolian archipelago and the wider region: what degree of self-reliance or dependence, of openness or closeness, has characterised the islanders over the long term with respect to their closest neighbours, in Sicily and southern Italy? Second, concerning the relation-

ship between the island communities and their local environment: how interconnected were the island settlements at different times, and how is this reflected in the archipelago's material record and cultural identity? Moreover, how do connectivity and interaction at the local and (inter)regional scale relate to each other? How did local dynamics affect wider dynamics beyond the archipelago (Broodbank 2018: 194)?

In order to explore both perspectives and their interplay, we focus on recent work on Bronze Age ceramic production and circulation, as well as environmental and spatial analysis of the settlements in relation to the Aeolian 'islandscape', comprising the archipelago and its interaction sphere as defined via the islanders' contacts with neighbouring and distant communities (Broodbank 2000: 21-25). We understand the islandscape as a dynamic framework, expanding and contracting in response to phases of relative interaction and isolation, and we approach it through the study of environmental, cultural and social factors (Lape 2004: 228-29). This approach allows us to reconstruct connectivity in the Bronze Age in greater detail than for the Neolithic, for which obsidian still remains the main source of evidence, and for which comparable ceramic and environmental datasets are lacking. This review is set against a comprehensive and critical synthesis of all the available archaeological data, and is supported by a detailed absolute chronology and a database of prehistoric sites for the whole archipelago (see Supplementary Online Material) (Figure 3). The main typological cultural phases or *facies* are defined in accordance with the chronological framework for prehistoric Italy, which stems from the prevailing culture-historical tradition in Italian archaeology (Guidi 2010); it is followed here for clarity but is integrated with relevant new data and observations. We conclude the study with our considerations on the changing character of insularity as it emerges from this integrated approach.

Picturing the Islandscape: Environmental Setting

The volcanic character of the Aeolian Islands has had a profound effect on their history, endowing

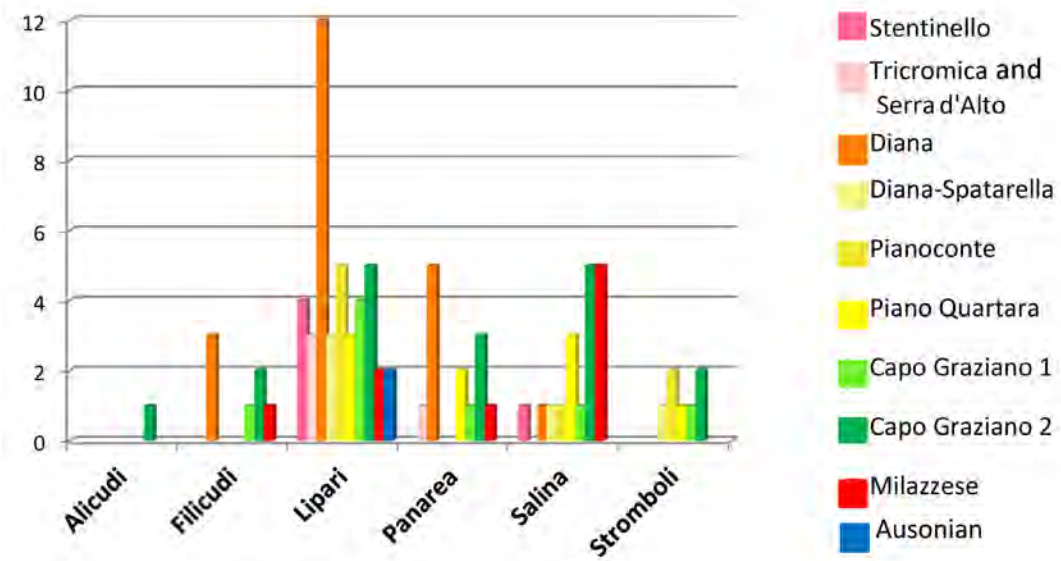

Figure 3. Numbers of prehistoric sites on each island according to the different cultural *facies*: Neolithic (Stentinello, Tricromica, Serra d'Alto); Chalcolithic (Diana-Spatarella, Pianoconte, Piano Quartara); Bronze Age (Capo Graziano I–II; Milazzese, Ausonian I– II) (by M.C. Martinelli).

them with obsidian and other useful resources but also exposing them to eruptions and tsunamis. The eruption that produced the obsidian sources exploited during the Neolithic on Lipari has been dated to *ca.* 6250 Cal BC (Forni *et al.* 2013) and resulted in the Vallone Fiume Bianco-Pomiciazzo-Gabellotto formation. In the timeframe we consider in the present work, volcanic activity occurred on Lipari, Vulcano and Stromboli, affecting all the islands and their maritime routes. Later eruptions in the medieval period (*ca*. AD 700 to the thirteenth century) produced the Monte Pilato formation and the lava flows of Rocche Rosse (so-named after its distinctive red colour) and Forgia Vecchia. These later flows have completely altered the morphology of the northeastern corner of the island of Lipari.

As is the case for many volcanic areas, the Aeolian Islands are also subject to local tectonic movements, clearly visible along the coasts of Lipari, where an uplift of the western side seems to be balanced by a rapid subsidence detected on the eastern side (Anzidei *et al.* 2016; 2017). Sea level changes and subsidence (which have resulted in some land loss along the coast) have affected more or less the whole archipelago. Most of the coasts older than 100,000 years are marked by palaeocoastlines dating to the Tyrrhenian period (Forni *et al.* 2013), and the related marine terraces often have a conformation suitable for human settlement, as can be seen at the Bronze Age villages of Punta Milazzese (Panarea) and Filo Braccio (Filicudi). It is difficult to provide an estimation of the speed of erosion along the cliffs and the rocky shores of the islands, because it may be starkly different due to their exposure, soil composition, etc. However, the western slopes of the islands are generally more exposed to erosive processes, due also to the significant dominance of strong winds from the northwest and west in the climatic framework of the archipelago.

The islands have a steep topography, with Salina reaching the highest elevation (968 m asl), and most of their coastlines comprise steep cliffs. They are clearly visible from the Sicilian and Tyrrhenian coast of mainland Italy, from where they can be reached via relatively short crossings (*ca*. 30-50 km). Lipari, the largest island, has its best coastal access points mostly around the southern side and also in the northeast, but for this area a reliable reconstruction is difficult because it has undergone strong volcanic activity in more recent times. Filicudi has potential harbours both along the northern and the southern sides, while Stromboli has a large sandy beach in its northeastern corner, which could shelter several boats; Salina and Panarea, however, both lack good access points. The islets off the eastern and northeastern coast of Panarea were surely larger in surface area in the past, and most likely Lisca Bianca, Lisca Nera and Dattilo formed a single, larger islet, as is strongly suggested by the correspondence between the isopleth of the whole area and sea level during the Neolithic (–15 m asl according to Lambeck *et al.* 2004). Lisca Nera, which was still covered by pottery fragments at the time when Bernabò Brea visited it in 1947, has been completely destroyed by sea erosion in recent decades.

Most of the available archaeobotanical data concern the Bronze Age settlements and are based on the analysis of carpological (seed) remains (Martinelli 2005; Martinelli *et al*. 2010; Speciale *et al*. 2016; Stellati and Fiorentino 2016) and anthracological (charcoal) samples (Fiorentino 2005; Fiorentino *et al.* 2010; Martinelli *et al*. 2010; Speciale 2016; Speciale *et al*. 2016), as well as pollen (Rattighieri *et al.* 2012; Mercuri *et al.* 2020) and stable isotope analysis (Caracuta *et al.* 2012; Speciale *et al.* 2016; Stellati and Fiorentino 2016). A palaeoclimatic reconstruction of local significance—including insular average rainfall—has been carried out on the basis of the study of $\delta^{13}C$ in ancient plant remains (Caracuta *et al.* 2012), involving 33 samples of seeds and charcoal from Portella (Salina), Filo Braccio (Filicudi) and Punta Milazzese (Panarea), covering a period of approximately 1000 years (late third to late

second millennium BC). The results indicate more or less wet/dry periods and point to a general synchronicity at both a central Mediterranean scale and a local micro-insular scale in the Aeolian Islands (Caracuta *et al.* 2012; Recchia and Fiorentino 2015; Speciale *et al.* 2016). The timespan covered features at least three phases of reduced $\delta^{13}C$ values (below –25.8 ‰), interpretable as an index of moister conditions: the first at ~2100–1950 BC, the second at ~1700–1500 BC and the last at ~1250–1100 BC. Between these phases, there are periods of high $\delta^{13}C$ values (more than –25.8 ‰), corresponding to increased aridity: one at ~1950–1700 BC and the other at ~1500–1250 BC.

Islandscapes in Time: Cycles of Colonisation, Interaction and Abandonment

*Neolithic (*ca. *5500–4100 BC)*

The Aeolian Islands were first settled during the Neolithic, following the general trend of island colonisation in the central Mediterranean (Dawson 2014; Zeder 2008). Occupation is attested during the so-called 'Stentinello II' phase (*ca*. 5500–5000 BC), characterised by coarse impressed Stentinello and finer painted pottery with red bands. Two radiocarbon dates are available for this period, averaging *ca.* 5350–5200 Cal BC (95.4%) (Martinelli 2020: 171). Although Stentinello pottery is distributed both in Sicily and central-southern Calabria, it is likely that these early colonisers came from Sicily, to which the islands are closer. Exploitation of the Canneto-Lami obsidian quarry (Cavalier 1979; Martinelli *et al.* 2020a) is dated to this period, when only three settlements are known: Castellaro and Diana on Lipari (Bernabò Brea and Cavalier 1960), and Rinicedda on Salina (Martinelli 2016). These early settlement sites were placed in plains or uplands suitable for early forms of agriculture and were closely linked to the exploitation of Lipari's obsidian, which was exchanged down-the-line over long distances, mostly northward along the Tyrrhenian coast as far as southern France, and across the Adriatic reaching the Dalmatian islands and coast (Freund *et al.* 2015; 2017; Freund 2018; Tykot 2019).

The subsequent cultural phases ('Trichromic Pottery' and 'Serra d'Alto') (5000–4500 BC) are spread over a wider regional area that includes the Italian peninsula. The cultural record in the islands is richer than in Sicily, likely linked to the procurement of obsidian. Lipari played a central role within the archipelago, with settlement mainly on the Acropolis (also named Rocca del Castello) (Bernabò Brea and Cavalier 1980), a naturally fortified site, and at the nearby Contrada Diana area (Bernabò Brea and Cavalier 1960: 32-35). The few fragments of Serra d'Alto pottery found on Panarea indicate a possible sporadic frequentation of this island.

The Final Neolithic Diana culture (4500–4100 BC) is widespread in Italy and corresponds to the phase of greatest diffusion of Lipari's obsidian (Freund 2018; Tykot 2019). This coincided with a considerable demographic growth, especially on Lipari (see Figure 3, above), including the small islets off Panarea (Basiluzzo, Lisca Bianca, Dattilo and Lisca Nera) but leaving out the most peripheral islands (Stromboli and Alicudi). The most important settlement on Lipari, located in the low-lying area known as Contrada Diana (after which the *facies* is named), has been interpreted as the main obsidian workshop (Bernabò Brea and Cavalier 1960), while the other, more inland sites appear to have a mostly rural character.

The main data on Neolithic pottery production derive from the investigations carried out on Lipari and Salina. At Lipari, local production is typified by a fabric that remains characteristic throughout the entire local pre- and protohistoric sequence (an effusive daci-rhyolitic composition, labelled ED101—see Supplementary Online Material) (Figure 4). A specific local, finer volcanic fabric was used to manufacture the fine and elegant Late Neolithic (LN) red monochrome Diana ware. Production on the

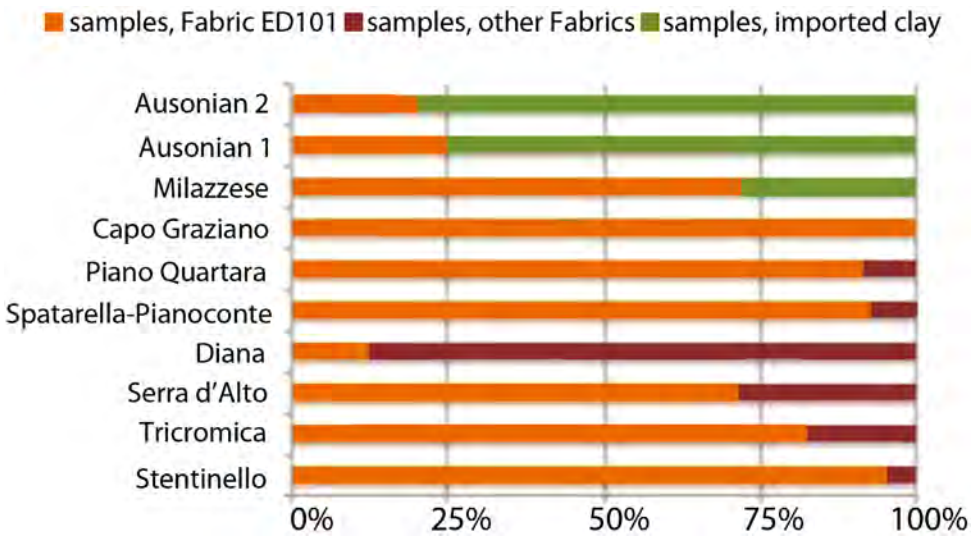

Figure 4. Diachronic distributions of local ceramic samples at Lipari (by S.T. Levi).

other islands is characterised by effusive basaltic and andesitic compositions. One third of the Neolithic samples belong to imported items, specifically painted Neolithic (Trichromic and Serra d'Alto) pots from the Italian peninsula (Levi *et al.* 2019b).

The archipelago's environmental setting during the Neolithic is very uncertain. On the basis of palaeobotanical data from the late Pleistocene to early Holocene, we can assume that—with the exception of the areas still affected by volcanic activity—the islands were generally densely covered by forest formations, primarily belonging to the alliance *Erico arboreae-Quercion ilicis*, which spread after the Würm glaciation. This is supported by the large occurrence of *Quercus ilex* and other related species (e.g. *Hedera helix*) in the flat top of the island of Vulcano between 15,000 and 6000 years ago (Lo Cascio *et al.* 2002; Lo Cascio 2015). Their structure and composition, however, may have been influenced by local features (such as exposure, elevation, etc.), which played a conservative role in some contexts. For instance, the western slope of Lipari (close to the site of Castellaro) could have been occupied by long-standing plant communities very similar to those occurring around a palaeolake existing there about 100,000 years ago, with *Chamaerops humilis*, the endemic *Cytisus aeolicus* and, perhaps, *Laurus nobilis* (Lo Cascio *et al.* 2002); some inner and deep valleys of Lipari and Salina may have retained residues of woodland related to colder and dryer climates, such as a *Pinus nigra*, which generally migrated to mountainous habitats after the Last Glacial Maximum peak (Lo Cascio 2015).

*Chalcolithic (*ca. *4100–2200 BC)*

After the Diana phase, the islands experienced a demographic recession, which was broadly linked to a reduced interest in obsidian (Bernabò Brea 1988). Recently, Manni *et al.* (2019) identified a possible correlation between volcanic events and three demographic crises occurring during the prehistoric and historic periods, which may have been influenced both directly and indirectly by tsunami events on the coastal plains and by difficulties in navigation. In particular, the reduction of the coastal settlement at Contrada Diana, the subsequent settling of the Acropolis / Rocca del Castello and the development of settlements in areas sheltered from volcanic activity all support the hypothesis that Contrada Diana was exposed to

Figure 5. View of the Aeolian Islands from the Vulcano crater (courtesy of C. Mustica, Associazione Nesos).

the combined effect of tsunami waves created by the Sciara del Fuoco collapse, documented on Stromboli and indirectly related to the eruptions of the Gran Cratere of Vulcano (*ca*. 4000–3500 BC) that also likely hindered maritime travel between the mainland and Lipari (Figure 5). No archaeobotanical data are available for this period, but we assume that deforestation as a result of agricultural activities continued.

Throughout the Chalcolithic period, traditionally divided into three phases, still of uncertain absolute chronology—(1) Diana-Spatarella, (2) Pianoconte and (3) Piano Quartara—Lipari had the largest number of settlements, and Stromboli was settled for the first time, probably with a direct connection to the Tyrrhenian coast of mainland Italy. Some fragments of Diana-Spatarella pottery indicate short-lived earlier occupation at the site of San Vincenzo on Stromboli (Cavalier 1981). Serra Fareddu (Cavalier 1979) and Ginostra (Bernabò Brea and Cavalier 1968), both on Stromboli, were occupied during the subsequent Pianoconte phase. The extent of volcanic activity on Stromboli until about 5000 years ago probably rendered the island uninhabitable during the Neolithic. The known settlements are located on lava flows that have been dated to 7.4–6.2 kya for Ginostra on Timpone del Fuoco lavas and 7.9–7.7 kya for Serra Fareddu on Nel Cannestrà lavas (Manni *et al.* 2019). Therefore, both sites developed after the fourth millennium BC (Manni *et al.* 2019). During the Piano Quartara (late Chalcolithic) phase, which has close similarities to the Sicilian *facies* of Malpasso-Chiusazza, the settlements are again widespread across the archipelago, with sites on Lipari, Salina, Panarea and Stromboli.

*Bronze Age (*ca. *2200–900 BC)*

The diffusion of bronze technology marked a fundamental juncture for the whole Mediterranean by the end of the third millennium BC

and brought considerable change to the Aeolian Islands. Up to this point, the island communities had had close contacts with Sicily and southern Italy but were largely self-reliant, thanks to their agricultural base and the exploitation of obsidian. The traditional explanation links this change in the islands' trajectory to the arrival of external communities of eastern Mediterranean origin, which is supported by close parallels between the Capo Graziano and Olympia-Altis ceramic production traditions, as well as by considerable changes in the layout of the villages, now organised with a system of dry-stone-walled households alternating with open spaces, reminiscent of Aegean types (Cavalier 1960; Bernabò Brea 1985a). A more recent study puts forward a western Balkan cultural influence, as seen from the widespread distribution of Cetina pottery in the Greek Peloponnese, southern Italy, Malta and the Aeolian Islands (Cazzella *et al.* 2020; Gori 2020; see also Broodbank 2013: 348-55).

The earliest known village belonging to the *facies* of Capo Graziano (after the eponymous promontory) rises on the coastal plain of Filo Braccio (Filicudi) and was occupied from 2200 to 1700 BC (Early Bronze Age [EBA] and Middle Bronze Age [MBA] I–II). In the following phase (1700–1500 BC), the village moved from the coast to the top of the headland of Capo Graziano. This *facies* likely had a transitional phase starting *ca.* 1900 BC, as documented at Lipari (Diana) and Stromboli (San Vincenzo) (Bettelli *et al.* 2016; Levi *et al.* 2017; 2018; Martinelli and Giordano 2017). San Vincenzo on Stromboli was also occupied during Capo Graziano I and retained some connections with the Italian peninsular coast. From 1700 BC, low-lying coastal settlements typically ceased to exist, with four sites all placed on headlands: Acropolis (Lipari), Capo Graziano (Filicudi), Serro dei Cianfi (Salina) and San Vincenzo (Stromboli).

During Capo Graziano II, frequent contacts are attested between the Aeolian Islands and the Mycenaean world, as the archipelago attained an important role in the control of the sea routes related to the trade of metals. Obsidian exploitation began to decline and was completely abandoned during MBA III. Both the absolute and relative chronologies indicate an increasing presence of Mycenaean material culture in the archipelago (Martinelli *et al.* 2020b); this phenomenon suggests an important diversification in the use of the islands, with defended sites on headlands and coastal plains on the one hand, and inner upland plains with a clear agricultural function on the other. There are also ritual sites, La Calcara on Panarea and San Calogero on Lipari, located close to secondary volcanic phenomena such as fumaroles and thermal springs (areas not suitable for regular settlement). The presence of a tholos structure at San Calogero (Bernabò Brea and Cavalier 1990) further attests to the islanders' contacts with the Aegean, although it would be simplistic to interpret the structure as evidence of one-sided acculturation (Russell 2017: 62-64), in light of the local re-elaboration of its function to cover a thermal spring rather than a burial.

During the EBA and MBA, pottery was produced on all the islands (Brunelli *et al.* 2013). The decorated products of Lipari were exported to the other Aeolian Islands and to other southern Tyrrhenian locations in mainland Italy (Levi *et al.* 2019b). Export of Lipari products is also testified by the Pignataro di Fuori shipwreck, located just off the island's eastern coast (Bernabò Brea 1985b). It is worth noting that during this phase, Lipari's obsidian was still imported to the other islands of the archipelago as raw material and locally transformed into tools (Levi *et al.* 2019a). Pithoi and cooking pots produced at Filicudi, Salina and Stromboli were exported to various locations in the southern Tyrrhenian area but not to Lipari itself. The imported Aegean pottery, mainly from the Peloponnese, is abundant at Lipari and Filicudi and is present on the other islands, while a noticeable amount of pottery found at Stromboli was imported from the Italian peninsula.

Archaeobotanical data show an economy based primarily on cereal cultivation, but also involving the exploitation of pulses and tree fruit plants (in particular grapevines). During the EBA (Capo Graziano I), the settlement of Filo Braccio on Filicudi was situated in a lowland plain where agriculture may have been practised despite the generally limited availability of arable land. Some 3600 remains of cereals, legumes, grape pips, figs, olive, plums and apple-like seed (Speciale *et al.* 2016) were analysed, as well as 1300 charcoal samples from a large number of cultivated and native species (Martinelli *et al.* 2010; Speciale *et al.* 2016). The archaeobotanical remains from 'Space L' (an open-air area) consist of traces of cereal processing with a prevalence of barley, and their location within the settlement suggests a collective use of resources. Wheat, both hulled and naked species, are attested throughout the site, as are legumes and grapes (Speciale *et al.* 2016). The occurrence of *Vitis vinifera* is noteworthy, since its presence documents its early circulation in the western Mediterranean and the probable role of the Aeolian Islands in its diffusion in the Tyrrhenian area (Fiorentino *et al.* 2010; Recchia and Fiorentino 2015). Remains of barley were also found in some samples from Capo Graziano II at the Lipari Acropolis (Speciale 2016). A small amount of cereal caryopses and chaff remains, pips and figs have been examined (Stellati and Fiorentino 2016; Speciale 2016); anthracological analyses were also carried out on samples collected in a non-systematic manner during archaeological excavations of different layers in the 1950s and 1960s (the Capo Graziano II, Milazzese [see below] and Ausonian I–II) (Speciale 2016; Speciale *et al.* 2016).

Evidence for different activities at San Vincenzo on Stromboli includes cereals as well as ruderal/nitrophilous plants and other wild synanthropic plants (i.e. found in association with humans and domestic animals and refuse). Pollen from barley was found only in one hut, and the *Hordeum* group record was significant, suggesting that some straw had accumulated on the floor of the hut. Some pastoral activity is suggested by the significant presence of coprophilous fungi. There is evidence of terracing at San Vincenzo (Stromboli) and likely at Contrada Diana (Lipari). Considering that most of the islands are characterised by steep slopes and that Bronze Age villages were built with dry stone walls, it is likely that this technique was used more widely in the 'domestication' of the available land, in order to obtain small flat areas for agriculture. Unfortunately, the massive human impact during recent centuries makes it very difficult to identify the remnants of prehistoric terracing (Lo Cascio 2017). The economy of the islands must have also been enriched and probably sustained by their role in maritime activities, especially fishing and the collecting of edible marine fauna. We can only speculate on this important aspect since, with few exceptions (e.g. Vidale *et al.* 2018), the acidic soils of the islands have destroyed most of the fragile archaeological evidence that would have been preserved in shell middens and the refuse of human occupation.

From 1500 to 1300 BC (MBA III), the islands display close links to the Sicilian Thapsos *facies*, with the Aeolian aspect known as 'Milazzese' (Bernabò Brea and Cavalier 1968; Alberti 2008). There are increased contacts with the Mycenaean world, and the villages are perched high on readily defensible peninsulas and headlands. Some sites that already existed during the Capo Graziano phase continued to be inhabited, while others were abandoned (e.g. on Stromboli and Alicudi), and new settlements were built for specific purposes: at Portella (Salina), a system comprising channels carved into the volcanic substrate and huge vases (*pithoi*) was devoted to rainwater collection (Martinelli 2010: 200-201; Caracuta *et al.* 2012). Other sites were placed on different landforms, such as steep inclines (Serro dei Cianfi) or moderate slopes (Val di Chiesa), as well as upland plains (Serro dell'Acqua and Serro Brigadiere), each with access to a range of resources. Two sherds from a Cypriot *pithos* have

been found at Portella (Salina) and Apennine pottery was imported from the Italian peninsula to Lipari, Salina and Panarea. At Portella, work entailed the carpological analysis of a few remains of pips (Martinelli 2005) and the anthracological analysis of 960 charcoal samples belonging to roof structures of huts and internal hearths (Fiorentino 2005; Fiorentino *et al*. 2010). The presence of *Vitis vinifera* (both wild and cultivated forms) is significant, as it is recorded all over the archipelago (Portella for the Milazzese phase; Lipari Acropolis for the Ausonian phase). The occurrence of *Olea europaea*, *Genista* sp., *Myrtus communis* and other taxa such as *Rosaceae/Maloideae* and notably *Prunus* sp., with prevalence of *Erica* sp. and various Leguminosae, is attested on Salina at the village of Portella (Fiorentino *et al.* 2010). Some mesophilous taxa (thriving under moderate environmental conditions) were found at the Acropolis on Lipari, with a considerable presence of *Pinus* sp. These differences are probably related to the particular environmental conditions in the different islands and to the selection of wood for carpentry (Speciale 2016).

The Late Bronze Age (LBA, Recent [(1300–1150 BC] and Final [1150–900 BC]) is characterised by a dramatic decline. All the settlements were abandoned except for the Lipari Acropolis, which continued to be inhabited during the so-called Ausonian period. Its necropolis at Piazza Monfalcone has a mixed character with cremations in *situlae* (urns) and inhumations in *pithoi*. Towards the last part of this period (the Ausonian II of the Final Bronze Age), the pottery products are characterised by clay imported from northeast Sicily and local volcanic tempers for the specialised production of South Italian Protogeometric and Piumata wares and also for *impasto* (coarse) tableware. Numerous imported pots originated from the central and eastern Mediterranean: Mycenaean pottery from the Aegean (mainly Peloponnese), South Italian Protogeometric from the Italian peninsula and Nuragic pottery from Sardinia (Levi *et al*. 2019b). Remains of wheat and barley were found at the Acropolis village on Lipari (Speciale 2016). Around 900 BC, this village was destroyed by fire, as documented by a compact layer of charcoal. A long period of crisis began for the archipelago: Diodorus Siculus (*Library of History* 5.9.4) writes that Lipari hosted a few hundred natives, descendants of Aeolus, who, according to the tradition, welcomed the Cnidian founders of the Greek colony of Lipara in 580 BC.

Mapping the Islandscape: From Space to Place

In order to understand local dynamics and their significance in wider patterns of connectivity, we began an exploration of the Aeolian islandscape, as seen from the interplay between settlement, landscape, resources and connectivity. With this aim, we digitised all known settlement locations from our database to carry out a spatial analysis in GIS (*ArcMap* 10.4). Our database contains 50 sites, of which 21 are settlements that have been excavated and that form the primary focus of this analysis. There are also 16 sites known from surface finds, some of which are likely to reflect actual occupation while others may indicate short-lived frequentation. The number of settlements during each phase is too low to carry out any meaningful statistical analysis; nonetheless, it is still possible to highlight general trends of continuity and change by comparing their main features (Table 1). We used a digital terrain model (1/10,000 2 m-resolution—DTM from Lidar data) to determine the settlements' general morphology (altitude, slope and aspect), access to resources, distance to their nearest neighbour, distance to the coast and intervisibility. Given the extensive change in landscape from eruptions that followed the prehistoric period, in particular on Lipari and Stromboli, these are not straightforward tasks. For this reason, we opted for a simple approach to enable comparison between the islands, creating a 1 km buffer area around each settlement that allowed us to make some useful

Table 1. Topographic features of the settlements and linear distances to nearest coast and springs (numbers relate to the Figures).
Slope: Level = 0-10°; Moderate = 11-15°; Strong = 16-35°; Steep = 36-45°; Extreme = >45°.
Geology: HPD = hard pyroclastic deposits; L = lava; SPD: soft pyroclastic deposits.

No.	Site	Altitude (m asl)	Topography	Slope	Aspect	Geology	Nearest coastal access point (CAP)	Distance to nearest CAP (m)	Nearest spring	Distance to nearest spring (m)
3	Filo Braccio e Casa Lopez	2-25	Coastal plain	Level	South	SPD	Porto	90	Vallone Fontana (Filicudi)	>1km
4	Montagnola di Capo Graziano	100-150	Headland	Strong slope	Northwest	SPD	Porto	100	Vallone Fontana (Filicudi)	>1km
7	Acropolis	40	Headland	Strong slope	Northwest	SPD/L	Marina Corta	70	Fuardo	>1km
10	Civita	20	Headland	Strong slope	Northwest	HPD/L	Marina Corta	30	Fuardo	>1km
11	Contrada Diana	15	Coastal plain	Level	Flat/East	SPD	Marina Corta	450	Fuardo	835
15	Pianoconte	230-245	Upland plain	Level	Northeast	SPD	Valle Muria	1200	San Calogero	495
24	Piazza Monfalcone (Lipari town)	10	Coastal plain	Level	Flat/East	SPD	Marina Corta	240	Fuardo	1km
26	Quattropani, Castellaro	380-410	Upland plain	Level	North-west	SPD	Cugno Lungo	1200	Madoro	665
27	Spatarella	240	Upland plain	Strong slope	South-west	SPD	Valle Muria	500	Fuardo	855
30	Piano Quartara	25	Moderate slope	Moderate slope	East	HPD	San Pietro	200	-	-
32	Punta Milazzese	20	Headland	Strong slope	Southwest	SPD/L	Cala Junco	0	-	-
40	Portella	0-300	Ridge	Steep slope	Southeast	HPD	Santa Marina	200	Santa Marina	>1km
42	Punta Megna	25-50	Coastal plain	Moderate slope	Southeast	SPD/ HPD	Rinella	100	Vallone della Fontana (Salina)	>1km
43	Rinicedda	90	Upland plain	Moderate slope	Southwest	SPD	Rinella	200	Vallone della Fontana (Salina)	>1km
44	Serro Brigadiere	100	Upland plain	Strong slope	Southeast	SPD	Santa Marina	310	Santa Marina	450
45	Serro dei Cianfi	150	Upland plain	Steep slope	East	HPD	Santa Marina	95	Santa Marina	975
46	Serro dell'Acqua	55	Upland plain	Steep slope	North-east	HPD	Santa Marina	180	Santa Marina	595
48	Ginostra Timpone del Fuoco	140	Upland plain	Strong slope	North	SPD	Ginostra	350	Schicciole	>1km
49	San Vincenzo	65-70	Upland plain	Moderate slope	East	SPD	Fico Grande	430	Pizzillo	450
50	Serra Fareddu	230	Ridge	Strong slope	North	SPD	Piscità	360	Pizzillo	>1km

observations with regard to the settlements' agricultural potential, access to resources and proximity to springs, watersheds and the sea (Figures 6–11, below). In general, flat areas and proximity to a spring were the main criteria for locating settlements during the Neolithic, while access to the coast and naturally defended locations became important throughout the Bronze Age.

Most settlements, regardless of their chronology, are located on soft pyroclastic deposits (Tripodo *et al.* 2012), forming light soils that would have been suitable for prehistoric small-scale farming. Only Portella on Salina (see below, Figure 7, site no. 40) and a few other high-lying sites, mostly occupied at times of demographic crisis, are located on hard pyroclastic deposits.

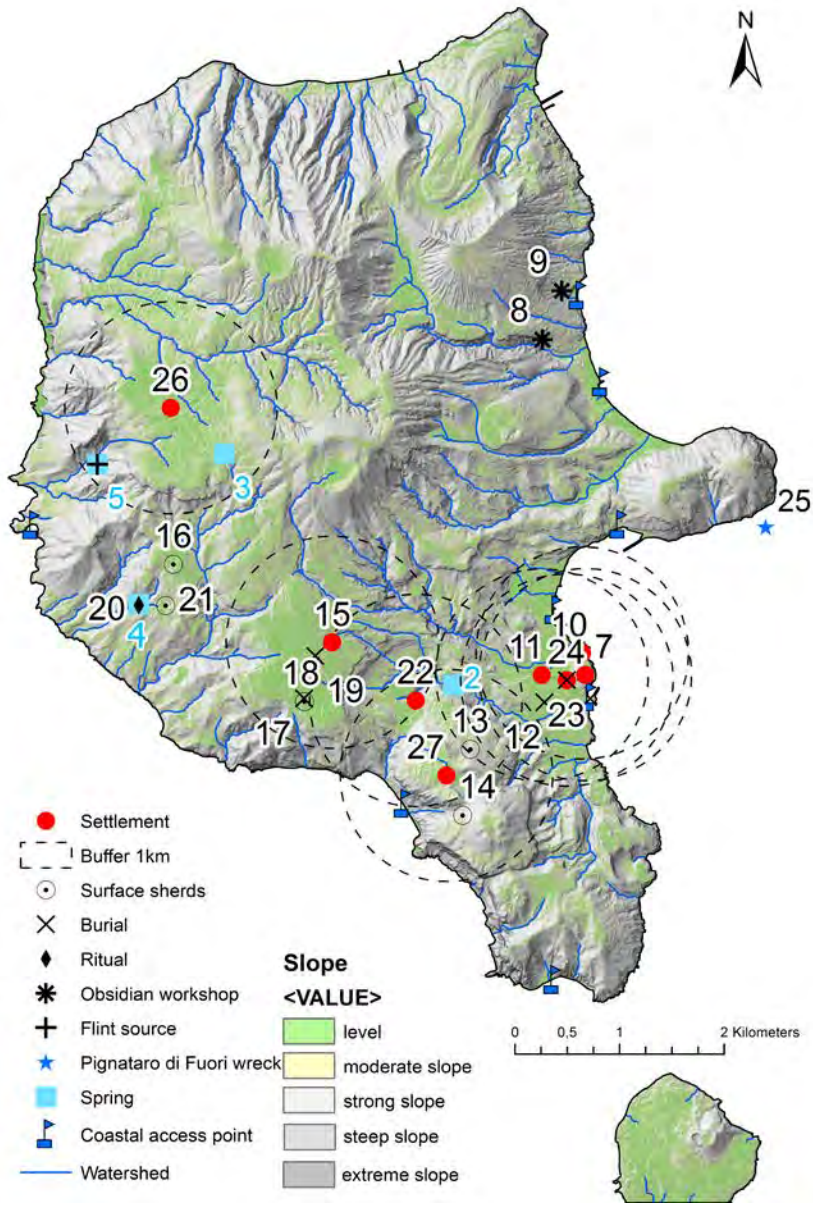

Figure 6. Prehistoric settlements and other site types (all periods) on Lipari (by H. Dawson).

With the exception of Rinicedda on Salina's southern coast (site no. 43), the earliest settlements were located at high altitudes in the islands' interiors; subsequently, there is a general reduction in altitude, with settlement locations closest to the coast during the EBA. The obsidian outcrops at Lami and Papesca on Lipari (Figure 6, nos. 8 and 9) were exploited only during the Neolithic. There are no settlements located in proximity to these outcrops, although the northeastern sector of Lipari has been heavily modified during the last 3000 years. Springs are located on all the islands except Alicudi and Panarea (Table 2). We recognise that there are limitations to this approach: other springs may have been present in the past that have left no

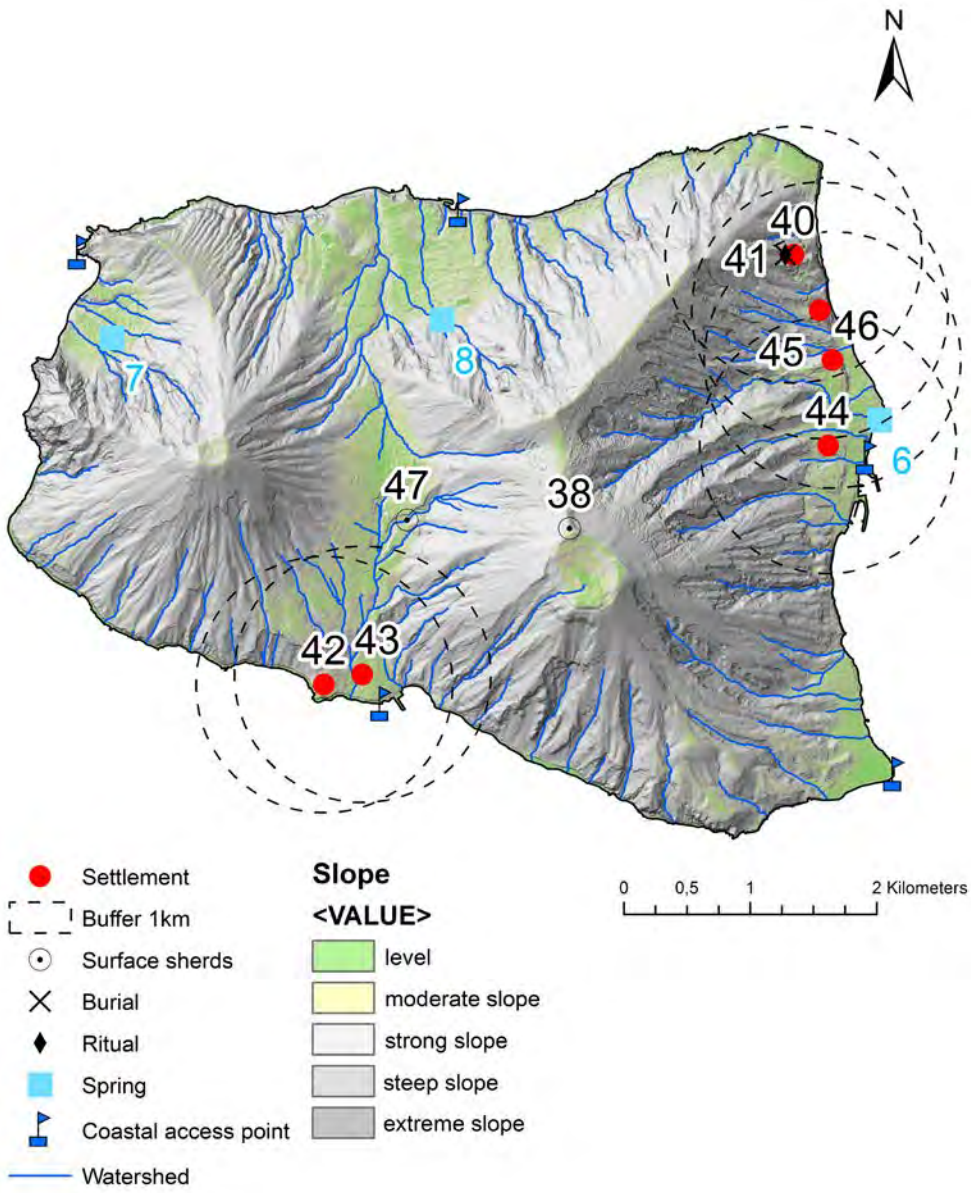

Figure 7. Prehistoric settlements and other site types (all periods) on Salina (by H. Dawson).

Table 2. List of springs (numbers relate to the Figures)

No.	Spring	Type	Island
1	Vallone Fontana	Fresh	Filicudi
2	Fuardo	Fresh	Lipari
3	Madoro	Fresh	Lipari
4	San Calogero	Thermal	Lipari
5	Bagno Secco	Fresh? Fumaroles	Lipari
6	S. Marina	Fresh (now extinct)	Salina
7	Pollara	Fresh?	Salina
8	Vallone della Fontana	Fresh	Salina
9	Dattilo	Thermal (now extinct)	Dattilo
10	Schicciole	Fresh	Stromboli
11	Pizzillo	Fresh	Stromboli
12	La Petrazza	Fresh	Stromboli

trace; water flow and spring location may have been affected by environmental changes. With the exception of Filicudi (see Figure 8, below), Neolithic and Bronze Age settlements on the islands tend to be located close to springs (<1 km distance), as seen on Lipari (Figure 6, nos. 22, 26), Salina (Figure 7, nos. 44, 45, 46), and Stromboli (Figure 11, no. 49).

On Lipari, four clusters of sites are distinguishable, in the northwestern and southern parts of the island (see Figure 6, above). The earliest Neolithic site on Lipari, Castellaro (no. 26), was located within 1 km of water sources and on flat fertile land on the Castellaro Plain. Although, as previously mentioned, Castellaro was not situated with any proximity to obsidian outcrops, the Vallone Fiume Bianco, a deep valley between Monte S. Elmo and Monte Chirica on the northeastern side of the island, offered the opportunity to collect obsidian pieces transported by rain and erosive flows (Cavalier 1979; Martinelli *et al.* 2020a: 395, fig. 2). The remaining sites cluster on flat areas on the southern side of the island, on the Acropolis mound and around Monte Giardina. On neighbouring Salina, Rinicedda (Figure 7, no. 43) lay straight across the water in a direct line of sight from Castellaro, and likely drew its obsidian from the same areas. Although the northwestern area of Salina and the northern part of Panarea (Figures 7 and 9) both stand out as attractive areas for settlement, with level areas (and springs in the case of Salina), they have no known sites. The dominance of strong winds from the northwest and west in the region could explain the absence of settlement in these areas. Elsewhere, orientation does not appear to affect settlement location.

By the LN, sites were situated mostly inland, but there was a progressive move towards the coast. During the Diana phase, obsidian was most likely exploited after a short transfer to Contrada Diana (Figure 6, no. 11) following a sea route (Martinelli *et al.* 2020a: 395, fig. 2). In the EBA and MBA I–II, all of the known settlements were located close to the sea, initially on low-lying coastal plains and then increasingly in more defended locations on coastal headlands, as can be seen very clearly on Lipari, Salina, Filicudi and Panarea (Figures 6–9), and perched on the cliff side as on Alicudi (Figure 10). San Vincenzo on Stromboli (Figure 11, no. 49) stands out from the rest, being located in an upland plain, overlooking the sea; it was eventually abandoned in the Milazzese phase (MBA III).

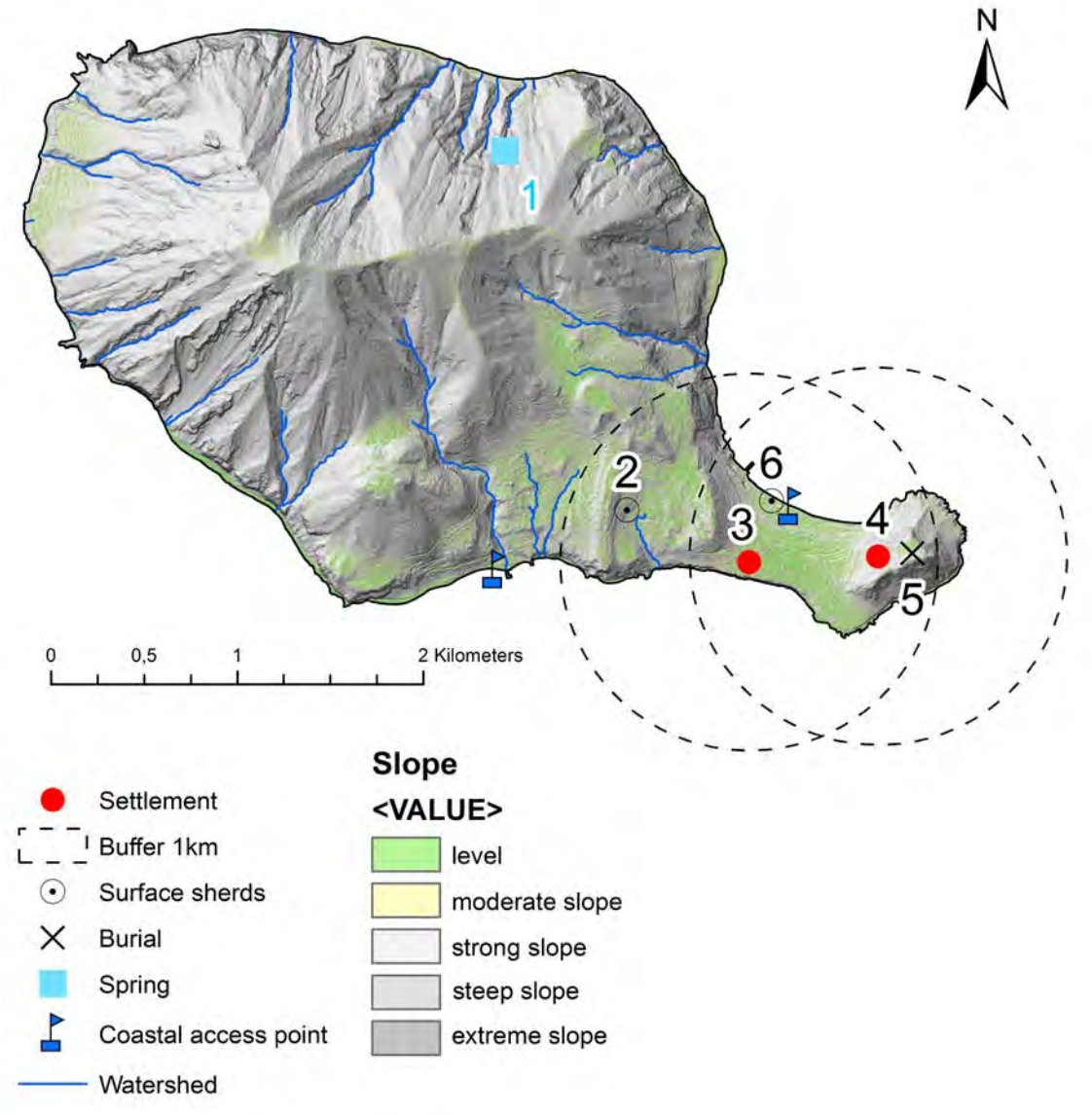

Figure 8. Prehistoric settlements and other site types (all periods) on Filicudi (by H. Dawson).

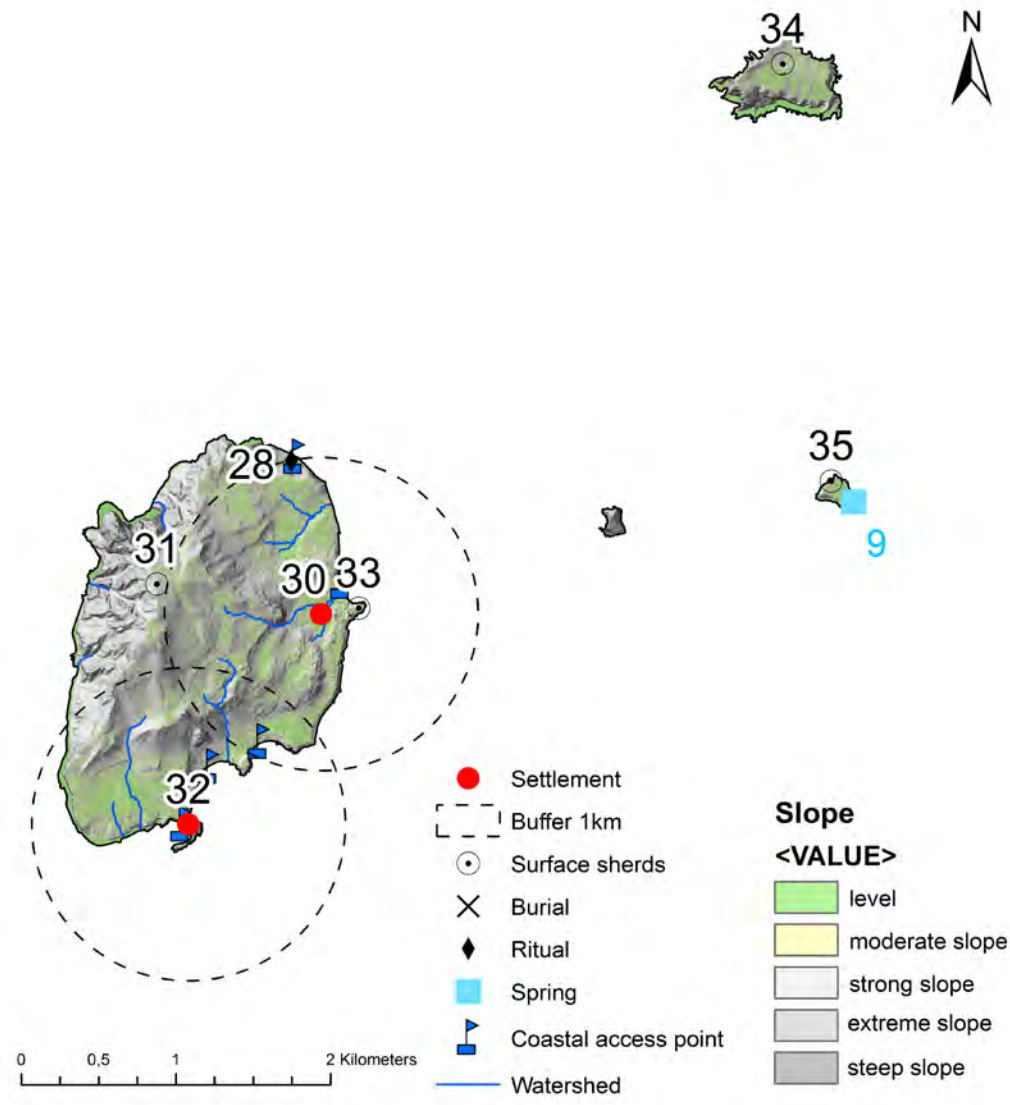

Figure 9. Prehistoric settlements and other site types (all periods) on Panarea and neighbouring islets (by H. Dawson).

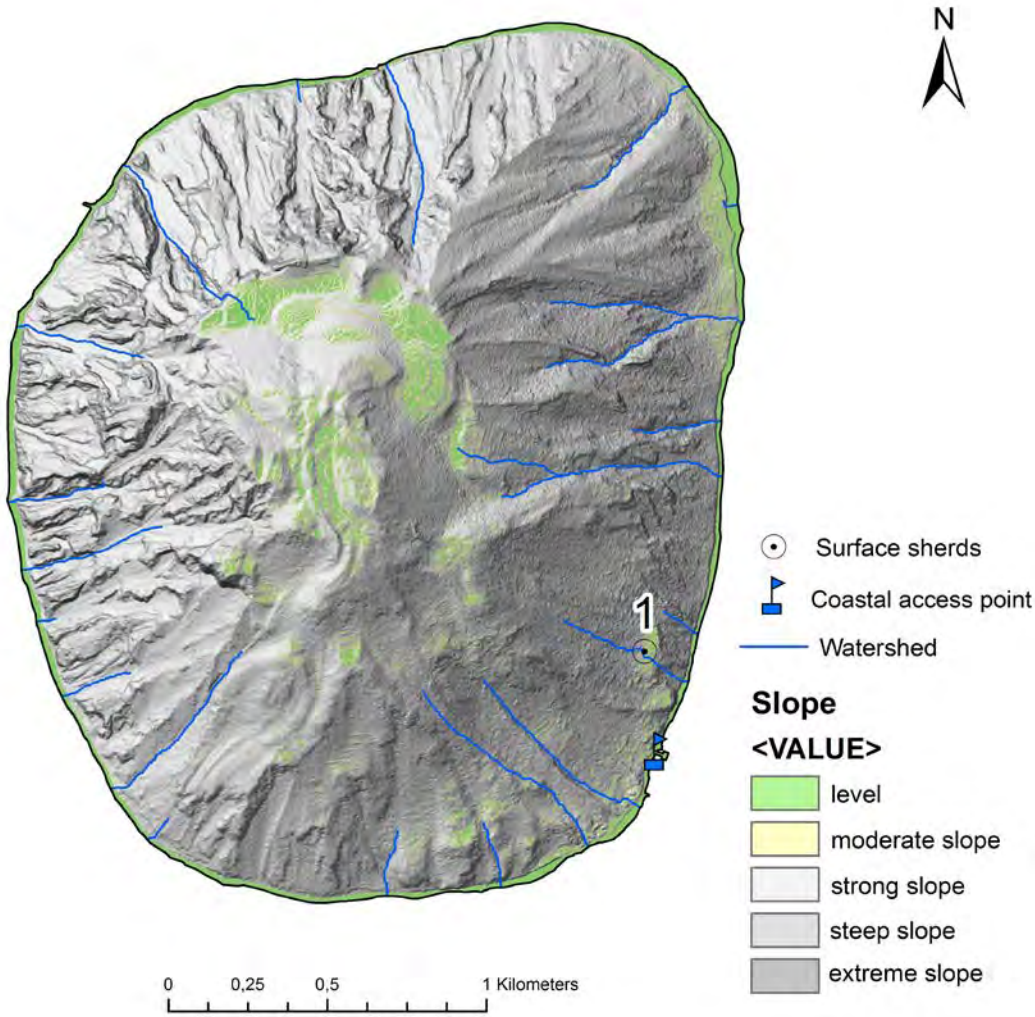

Figure 10. Prehistoric settlements and other site types (all periods) on Alicudi (by H. Dawson).

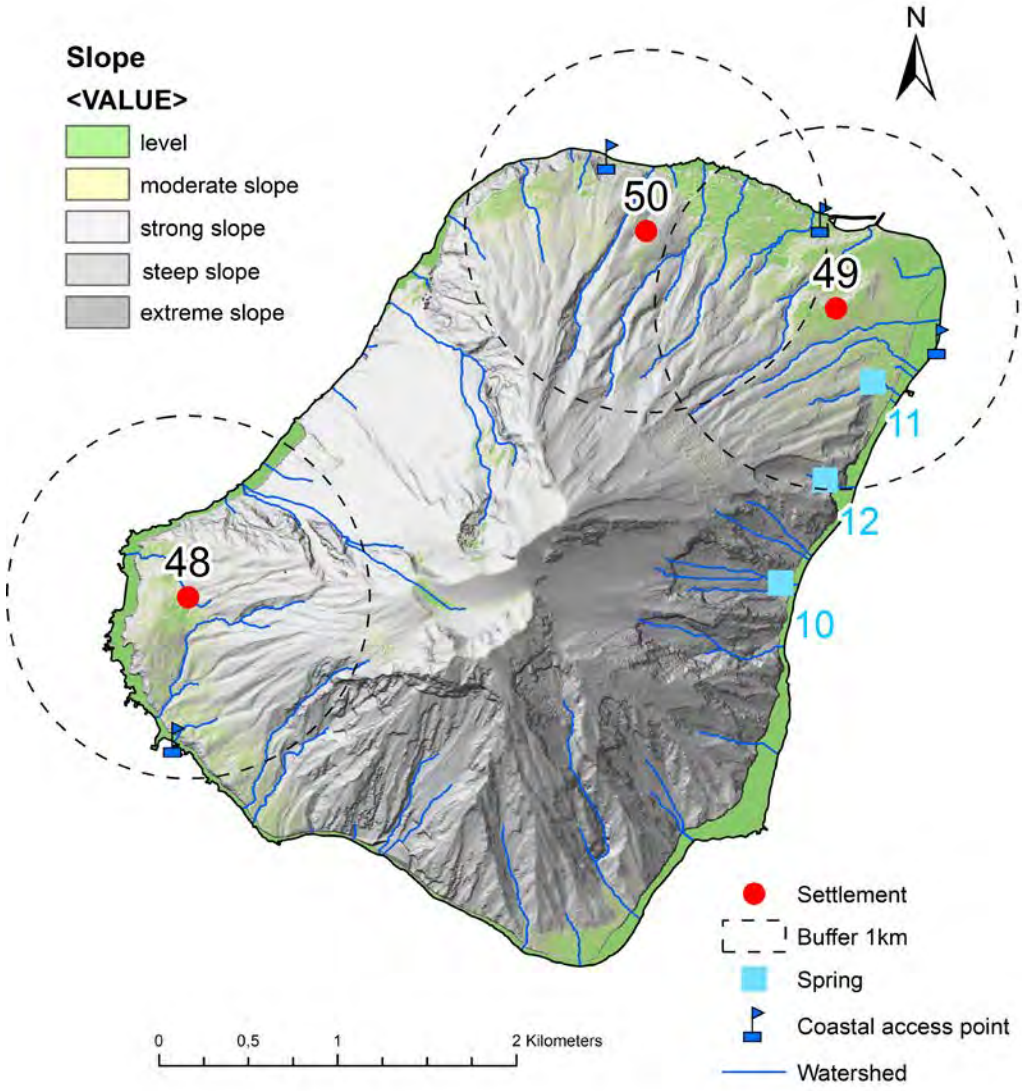

Figure 11. Prehistoric settlements and other site types (all periods) on Stromboli (by H. Dawson).

In MBA I–II (Capo Graziano *facies*), surface sherd scatters probably represent small farmsteads, which attest to the continued use of the interior of Lipari at a time of increasing contact and exchange with the outside world.

Intervisibility

Cumulative viewsheds provide two useful features: (1) views over the archipelago from each settlement and (2) intervisibility between settlements. We calculated such viewsheds for the four main phases of demographic expansion (Figure 12): the LN Diana phase and three Bronze Age (Capo Graziano I–II and the Milazzese) phases.

While the two earliest settlements from the Middle Neolithic (Castellaro and Rinicedda) were clearly intervisible, in the following LN (Figure 12.1) only Capo Graziano on Filicudi (no. 4) and Castellaro on Lipari (no. 26) were intervisible, despite the increase in the number of settlements and possible occupation sites during this phase. Within Lipari itself, the sites were not intervisible, lying mostly in the interior and reflecting their agricultural orientation rather than any strategic location within the archipelago. During Capo Graziano I (Figure 12.2), the settlements are neither intervisible nor do they command views towards the interior, but rather look across the archipelago and towards the contemporary settlements at Viale dei Cipressi in Milazzo (Sicily) (Tigano *et al.* 2009) and on the promontory of Tropea (Calabria) (Pacciarelli 2000). As the number of sites increased, inter-island intervisibility was highest during Capo Graziano II (Figure 12.3), with an intricate visual network connecting most of the settlements from Alicudi in the west to Stromboli in the northeast, as well as the contemporary settlements in Sicily and Calabria. Visual control over the main maritime routes now appears to be a key factor influencing settlement location at a time of considerable connectivity in the Mediterranean. Moreover, the Bronze Age settlements on Lipari, Filicudi and Stromboli all overlooked, and were within a short distance from, the principal landing points on the islands (see also Di Renzoni *et al.* 2016: 188). This increase in visual connectivity is reflected by patterns of ceramic circulation within the archipelago, which indicate closer contacts between the island settlements and changes in the islandscape *vis-à-vis* the increased interaction (Robb 2001; Dawson 2020). The decoration on a cup from Filicudi with a representation of boats and waves and an oversized anthropomorphic figure appears to capture this transformative moment (Martinelli 2018) (Figure 13).

During MBA III (the Milazzese phase), although intervisibility decreased slightly with the number of settlements (Figure 12.4, above), there was still visual contact between the settlements on the Aeolian islands, Sicily and Calabria. During this period, the islanders may have resorted to piratical incursions to maintain their control over maritime routes crossing the lower Tyrrhenian Sea (Bernabò Brea 1981). Settlements in Calabria have a distinct Aeolian/Sicilian character and ultimately tensions between these neighbouring communities may have caused the violent destruction of the Aeolian settlements in retaliation in the LBA, during the Recent Bronze Age (Bietti Sestieri 2005; Martinelli 2020).

The Changing Meaning of Insularity: Discussion and Conclusions

Conventional understanding of Aeolian prehistory is framed within a culture-historical or diffusionist perspective, with a strong focus on chronotypology, as seen through differences in ceramic styles and their relation to Sicily and the wider Mediterranean. In this framework, *facies* changes have been explained generally by external cultural influences, and phases of demographic expansion and contraction mostly by exogenous dynamics, with limited attention to local factors. Our aim here has been to compensate for this imbalance by focusing on the agency of these island communities and their relationship with their local

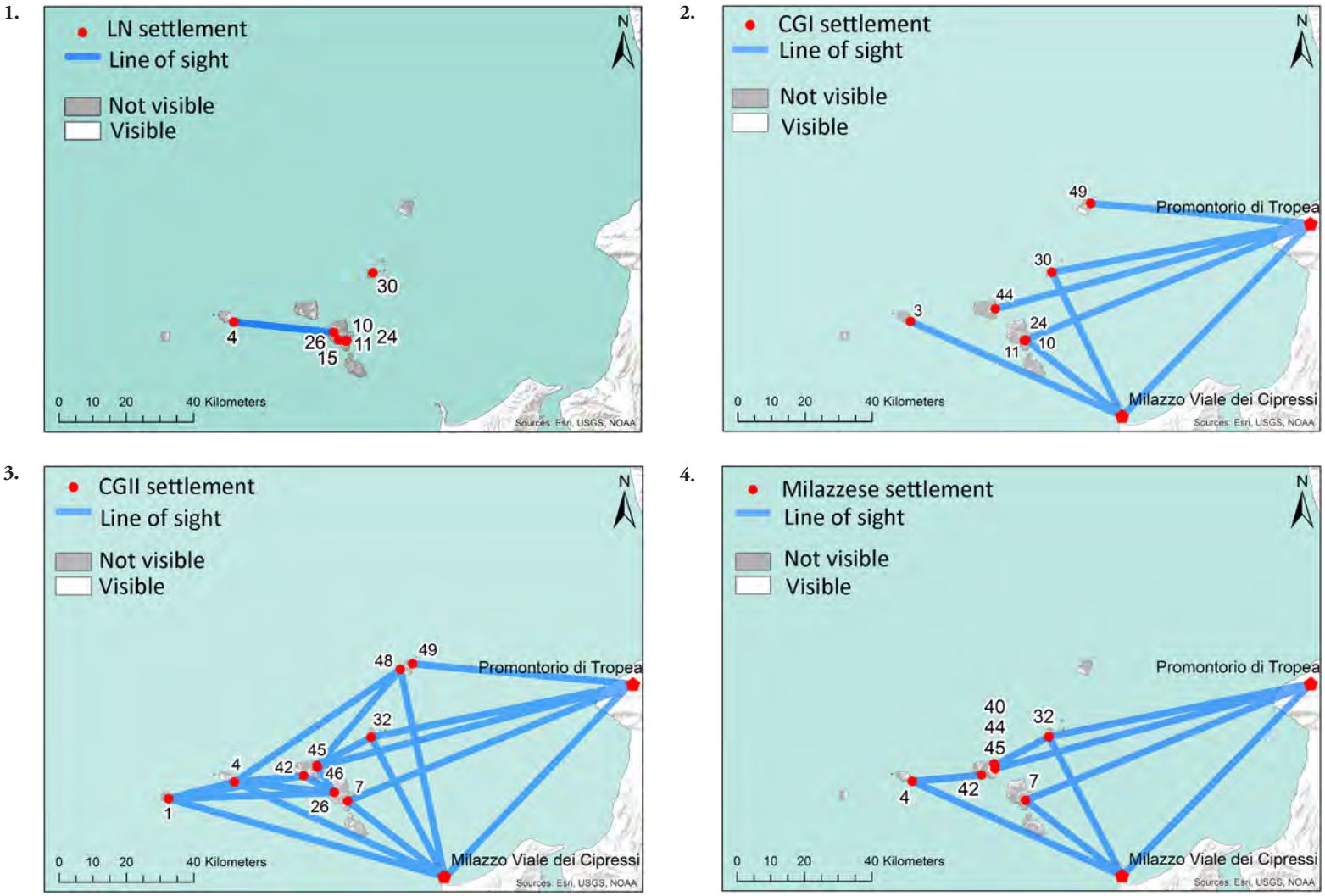

Figure 12. Cumulative viewshed and settlement intervisibility 1. Diana phase; 2. Capo Graziano I phase; 3. Capo Graziano II phase; 4. Milazzese phase (by H. Dawson).

Figure 13. The 'storytelling cup' from Filo Braccio (Filicudi) (Capo Graziano *facies*, 1900–1700 BC) (Martinelli 2018).

environment, exploring changes in their environmental and cultural strategies and drawing meaningful topologies within the islandscape (see Calvo *et al*. 2011). While the islandscape paradigm is not new, the application of network approaches to island studies has highlighted its heuristic potential once again as a means to bridge social and geographical aspects of space (Dawson 2020; Hofman *et al*. 2020). In this paper, we have approached islandscapes and networks interchangeably, to explore the recursivity of human–environmental interactions more broadly, beyond the individual islands.

The chronological review highlighted significant changes in connectivity between the islanders and their neighbouring communities. The study of ceramic production and distribution shows that the islanders employed a range of strategies to deal with limited resources, exploiting local rocks and importing clays from Sicily, but also exporting their products to the surrounding regions. The ceramic data reveal nested and interconnected networks operating at the interisland, regional and interregional scales (Martinelli 2016; Levi *et al.* 2020b), with ceramics produced on Lipari exported to the other islands, as well as to Sicily and the Italian Peninsula, where they are occasionally found in association with Aegean-type pottery. Interaction at the interisland scale can be considered a forerunner to later (inter)regional networks, finding parallels with other Mediterranean island groups, such as the Cyclades (Broodbank 2018: 196).

The addition of palaeoenvironmental data to the picture afforded by the archaeological record has brought considerable refinement to our understanding of these processes. Changes in local climatic conditions likely affected the archipelago's settlement dynamics, with communities diversifying their strategies to cope with dry periods, e.g. establishing rainwater collection during arid times at Portella during the Milazzese phase (~1500–1250 BC).

From a *longue durée* perspective, there is a noticeable shift in settlement patterns from the archipelago's initial occupation to its final abandonment from the interior towards the coast, which reflects an opening up to the outside world. Nonetheless, the archaeobotanical record and the persistence of inland sites show that the islanders did not rely entirely on external contacts and resources for their livelihood, and that agriculture retained a central role within the local economy from the Neolithic onwards. We further see a good degree of self-sufficiency becoming gradually established during the Bronze Age. Although the evidence is limited, it is likely that the islanders supplemented this economic base through fishing and marine resources.

The archaeological record of the Aeolian archipelago is essentially one of cyclical expansion and contraction of the islandscape (Copat *et al.* 2010; Dawson 2014; Guidi 2016; Martinelli 2020). Periods of increased exchange during the Neolithic and Bronze Age corresponded to settlement expansion within the archipelago while reduced interaction resulted in demographic decline, most notably linked to the demise of obsidian exchange at the end of the Neolithic; settlement shifts, from the interior to the coast and vice versa, can be explained by the islanders' involvement in maritime exchange networks as well as by environmental factors, such as volcanic events or dry periods. Throughout the entire timeframe under consideration, occupation on Lipari stands out for its longevity, underscoring this island's centrality both at the local and interregional scale. Such a long-term perspective casts a different light on insularity, defined both in geographic and cultural terms; this is a condition that is not fixed in time, since islands can be alternately open and closed to the outside world under different historical conditions (van Dommelen 1999; Dawson 2019a; Knapp 2020). At times, the islanders aligned themselves with neighbouring communities in Sicily and beyond; at others, they developed more individual cultural expressions, as seen for example in adaptations and innovations in their subsistence base, in the stylistic and technical choices in their ceramics and even in their rituals, inspired by the volcanic islandscape.

The sea played mostly a connecting rather than a separating role within the islandscape, as seen from the growing web of intervisibility between island and coastal settlements, acquiring a cosmological significance during the Capo Graziano phases, when maritime contacts increased and pottery decoration appears inspired by the maritime world (Levi *et al.* 2014; 2020a). Although the Aeolian Islands have been considered 'too small, and certainly too closely linked […] with their nearest neighbours ever to be able to build up an independent cultural identity' (Evans 1977: 21; cf. Bietti Sestieri 1982), a distinctive Aeolian identity did develop as a result of these contacts, which can be read in the solutions and adaptations to local and external conditions, with subtle differences also between the islands themselves (Martinelli 2020: 168). Thus, the islands are best characterised as 'cultural open zones' (Knapp 2007: 50; Knapp and van Dommelen 2010: 10) and as 'hyper-expressions' of cultural processes at times of heightened interaction (Broodbank 2018: 200). This 'island effect' is evident on other Mediterranean islands—especially the small ones, where the combined effects of geography and history have been compressed and amplified (Dawson 2020: 8)—and is strikingly illustrated by the 10 m deep stratigraphy on the Lipari Acropolis, which Bernabò Brea (1957: 49) likened to 'a real tell like those of the Near East'. Lipari is not unique in this respect, with other islands, most notably Malta during the Temple Period (Malone *et al.* 2020: 478-79), displaying an archaeological record richly disproportionate to their size and resources. Placing the islands at the centre rather than on the periphery of our studies, effectively turning the Mediterranean 'inside out' (Knappett and Nikolakopoulou 2014), sheds light on the issues raised in this paper and inevitably raises new questions, their answers still *blowin' in the wind*.

Supplementary Online Material

Please see the online version of this article to view the supplementary material.

Note

M.C. Martinelli and H. Dawson conceived the study; M.C. Martinelli wrote the section on cultural chronology; P. Lo Cascio wrote the sections on long-term environmental dynamics, and G. Fiorentino the sections on palaeoenvironment and ancient crop resources; S.T. Levi wrote the sections on Aeolian pottery and H. Dawson the sections on spatial analysis and intervisibil-

ity. M.C. Martinelli and H. Dawson wrote the introduction, final discussion and conclusion with input from all the authors. Finally, M.C. Martinelli, H. Dawson, P. Lo Cascio and S.T. Levi compiled the database of prehistoric sites.

Acknowledgments

The authors would like to thank Rosario Vilardo, Director of the Archaeological Park of the Aeolian Islands, for supporting their research and Madeleine Cavalier for closely following the development of the study. Sara Levi carried out the archaeometric investigations in collaboration with Valentina Cannavò and Daniele Brunelli (University of Modena e Reggio Emilia), Richard Jones (University of Glasgow) and Andrea Di Renzoni (CNR-ISPC, Rome). Helen Dawson acknowledges the generous financial support for her research from the Topoi Excellence Cluster (Freie Universität Berlin) and the Gerda Henkel Foundation. The digital terrain model used in this study was obtained courtesy of the Dipartimento Regionale dell'Urbanistica dell'Assessorato Territorio e Ambiente, Regione Sicilia (Protocollo d'Intesa 2013-B-74). Flavia Grita, Carmelo Mustica and Luis Mazza supported the authors throughout this project on Lipari. The authors are grateful to the editors of *JMA* and to the peer-reviewers for their detailed feedback and improvements to the text.

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Journal of Mediterranean Archaeology 34.1 (2021) S1-S5
ISSN (Print) 0952-7648
ISSN (Online) 1743-1700

Supplementary Online Material for *Blowin' in the Wind*: Settlement, Landscape and Network Dynamics in the Prehistory of the Aeolian Islands

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Archaeometric Data

The ongoing archaeometric project (Levi *et al*. 2019) is closely linked to John Williams's seminal work on Aeolian pre- and protohistoric pottery, which started in the 1960s (Williams 1980; 1991; 2018). This corpus comprises the petrographic analysis of 730 samples from 14 sites on five islands (Lipari, Salina, Panarea, Stromboli, Filicudi), which has led to the identification of 59 fabrics: 15 were produced with local raw materials, 11 had local components added to imported clay and 33 represent imports of finished products mainly from the central Mediterranean (Levi *et al.* 2019). Chemical investigations (ICP-MS) were performed on 124 pots from the Acropolis (Lipari) and from Portella (Salina) and San Vincenzo (Stromboli); the composition of the Mycenaean pots from Lipari indicates an Aegean provenance, mainly from the Peloponnese (Jones *et al.* 2014). Electron Microprobe and Laser Ablation Inductively Coupled Plasma Mass Spectrometry were performed on 250 samples of the Early Bronze Age I 'Capo Graziano' *facies* from various sites, and the microchemical investigation identified specific geochemical markers (the major and trace element composition of the most common mineral phases comprising clinopyroxenes, plagioclase and hornblende) in different islands (Brunelli *et al.* 2013). Finally, pXRF experimental analyses carried out on San Vincenzo (Stromboli) vessels of various date made it possible to distinguish between Aeolian and non-Aeolian products (Cannavò *et al.* 2017).

Table S1. Summary of the archaeometric analyses of Aeolian pottery for each site: samples, methods, suggested origin (imports in grey) and bibliography (by S.T. Levi).

Site	*Method*			*Suggested origin*					*Recent archaeometric publications (with references therein)*
	Petrography	*Chemical*	*Micro-chemical*	*Lipari*	*Other Aeolian islands*	*Clay from NE Sicily*	*Central Mediterranean*	*Eastern Mediterranean*	
Lipari—Castellaro	44			X			X	*	Jones *et al.* 2014; Levi *et al.* 2019; 2020
Lipari—Acropolis	318	17 (ICP)	35	X		X	X	X	Brunelli *et al.* 2013; Jones *et al.* 2014; Levi *et al.* 2019; 2020; Martinelli *et al.* 2020b.
Lipari—Contrada Diana	15		11	X			X	*	Brunelli *et al.* 2013; Jones *et al.* 2014; Levi *et al.* 2019; 2020
Lipari—Pianoconte	3			X			X		Levi *et al.* 2019; 2020
Lipari—Pignataro di Fuori wreck	4		4	X					Brunelli *et al.* 2013; Levi *et al.* 2019; 2020
Salina—Rinicedda	37			X	X		X		Jones *et al.* 2014; Levi *et al.* 2019
Salina—Serro dei Cianfi	1			X				*	Jones *et al.* 2014; Levi *et al.* 2019
Salina—Portella	42	26 (ICP)		X	X	X	X	X	Jones *et al.* 2014; Levi *et al.* 2019
Panarea—Punta Milazzese	11			X		X	X	*	Jones *et al.* 2014; Levi *et al.* 2019
Stromboli—Ginostra	4			X	X				Levi *et al.* 2019
Stromboli—Serra Fareddu	17			X	X		X		Levi *et al.* 2019
Stromboli—San Vincenzo	174	7 (ICP) 50 (pXRF)	58	X	X		X	*	Brunelli *et al.* 2013; Jones *et al.* 2014; Cannavò *et al.* 2017; Levi *et al.* 2019; Martinelli *et al.* 2020b
Filicudi—Filo Braccio	35		25		X		X		Brunelli *et al.* 2013; Levi *et al.* 2019
Filicudi—Montagnola di Capo Graziano	25		29	X	X		X	*	Brunelli *et al.* 2013; Jones *et al.* 2014; Levi *et al.* 2019
									*not analysed but likely imported

Database of Prehistoric Sites

We compiled a database of prehistoric sites of the Aeolian Islands from the literature and updated it through our walkovers and surveys. Combining legacy data with more recent studies (listed in Table S1) has been relatively straightforward, thanks to the excellent work of Bernabò Brea and Cavalier, who from the beginning conceived of the Aeolian Islands as a whole, with systematic work aimed at defining the archipelago's phases of occupation in relation to Sicily and southern Italy. In the database, the site name is that given in the literature or the toponym shown on the maps by Italy's *Istituto Geografico Militare*. The main archaeological categories used are settlement, burial, ritual, obsidian workshop, surface sherds and type of intervention (excavation, survey, test pit, casual find). The environmental categories are as follows: elevation (expressed in m above sea level), topography, geology and current land use. Two or more categories have been used in case of uncertainty or overlap. We indicated the phases of use for each site with a '1' and marked where the attribution is uncertain ('1?'). The dates for these phases, which are under continuous review, are currently supported by 69 radiocarbon dates (see Martinelli 2020: 170-77). We provide a full bibliography for each site.

The database is presented below, following the references.

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Journal of Mediterranean Archaeology 34.1 (2021)
ISSN (Print) 0952-7648
ISSN (Online) 1743-1700

Database of Prehistoric Sites of the Aeolian Islands

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Supplemental to "*Blowin' in the Wind*: Settlement, Landscape and Network Dynamics in the Prehistory of the Aeolian Islands"

n	Island	Site	Site type	Type of intervention	Altitude (m a.s.l.)	Topography	Geology*	Current land use	Neolithic				Chalcolithic			Bronze Age					Radiocarbon dates**	Bibliography***
									Middle			Late	Early	Middle	Late	Early	Middle I–II	Middle III	Late	Final		
									Sentinello	Tricromica	Serra d'Alto	Diana	Diana Spatarella	Pianoconte	Piano Quartara	Capo Graziano I	Capo Graziano II	Milazzese	Ausonio I	Ausonio II		
									5500–4500 BC			4500–4100 BC	4100–3800 BC	3800–2800 BC	2800–2200 BC	2200–1700 BC	1700–1500 BC	1500–1300 BC	1300–1150 BC	1150–900 BC		
1	Alicudi	Fucile	Surface sherds/ settlement?	Survey	50	Upland plain	SPD	Pasture									1					Cavalier 1979: 133-35
2	Filicudi	Canale	Surface sherds	Survey	70	Moderate slope	SPD	Wilderness				1										Unpublished
3	Filicudi	Filo Braccio and Casa Lopez	Settlement	Excavation	2-25	Coastal plain	SPD	Wilderness								1					Martinelli *et al.* 2010	Bernabò Brea and Cavalier 1991; Martinelli *et al.* 2010; Martinelli 2015
4	Filicudi	Montagnola di Capo Graziano	Settlement	Excavation	100-150	Headland	SPD	Wilderness				1					1	1			Martinelli 2020	Bernabò Brea and Cavalier 1991 (192 Diana)
5	Filicudi	Montagnola di Capo Graziano	Burials	Excavation	20-170	Headland	L	Wilderness									1					Bernabò Brea and Cavalier 1991: 57-68
6	Filicudi	Porto	Surface sherds settlement?	Survey	2	Coastal plain	SPD	Built-up area				1										Bernabò Brea and Cavalier 1991: 193, 16
7	Lipari	Acropolis	Settlement	Excavation	40	Headland	SPD/L	Built-up area		1	1		1	1	1		1	1	1	1	Bernabò Brea and Cavalier 1980; Martinelli 2020	Bernabò Brea and Cavalier 1980
8	Lipari	Canneto Lami	Obsidian workshop	Test pit	150	Extreme slope	HPD/L	Road side	1			1									Martinelli *et al.* 2020a	Buchner 1949; Cavalier 1979: 124-26; Martinelli *et al.* 2020a
9	Lipari	Canneto Papesca	Obsidian workshop	Test pit	30	Extreme slope	HPD/L	Road side				1										Buchner 1949; Cavalier 1979: 122-23
10	Lipari	Civita	Settlement	Test pit	20	Headland	HPD/L	Built-up area				1		1		1						Bernabò Brea *et al.* 1998 part 2: 24
11	Lipari	Contrada Diana	Settlement	Excavation	15	Coastal plain	SPD	Built-up area	1	1	1	1		1	1	1					Martinelli and Giordano 2017	Bernabò Brea and Cavalier 1960: 3-85; Martinelli and Giordano 2017
12	Lipari	Contrada Diana	Burials	Excavation	15	Coastal plain	SPD	Built-up area									1					Bernabò Brea and Cavalier 1980: 723-31; Bernabò Brea and Cavalier 1994: 177-86
13	Lipari	Monte Giardina (Costa del Monte, Predio Megna and San Bartolo al Monte)	Surface sherds settlement?	Survey	150-250	Moderate slope	SPD/HPD	Wilderness					1									Cavalier 1979: 92-99

n	Island	Site	Site type	Type of intervention	Altitude (m a.s.l.)	Topography	Geology*	Current land use	Neolithic				Chalcolithic			Bronze Age					Radiocarbon dates**	Bibliography***
									Middle			Late	Early	Middle	Late	Early	Middle I–II	Middle III	Late	Final		
									Stentinello	Tricromica	Serra d'Alto	Diana	Diana Spatarella	Pianoconte	Piano Quartara	Capo Graziano I	Capo Graziano II	Milazzese	Ausonio I	Ausonio II		
									5500–4500 BC			4500–4100 BC	4100–3800 BC	3800–2800 BC	2800–2200 BC	2200–1700 BC	1700–1500 BC	1500–1300 BC	1300–1150 BC	1150–900 BC		
14	Lipari	Monte Guardia, Urnazzo	Surface sherds	Survey	270	Moderate slope	SPD/HPD	Wilderness										1				Cavalier 1979: 99
15	Lipari	Pianoconte	Settlement	Excavation	230-245	Upland plain	SPD	Ploughed field				1		1	1							Bernabò Brea and Cavalier 1957: 111-51
16	Lipari	Pianoconte, Cicirata	Surface sherds settlement?	Survey, test pit	278	Upland plain	SPD	Ploughed field														Cavalier 1979: 69-70
17	Lipari	Pianoconte, Contrada Mulino a Vento	Single burial	Excavation	245	Upland plain	SPD	Abandoned field				1										Bernabò Brea and Cavalier 1960: 83-85; Cavalier 1979: 78-81
18	Lipari	Pianoconte, Contrada Mulino a Vento	Surface sherds settlement?	Survey	245	Upland plain	SPD	Abandoned field			1	1										Cavalier 1979: 78-81
19	Lipari	Pianoconte Contrada Pianora	Single burial	Excavation	245	Upland plain	SPD	Abandoned field				1										Bernabò Brea and Cavalier 1957: 115-17
20	Lipari	Pianoconte, San Calogero Tholos	Ritual	Excavation	135	Valley	L	Built-up area									1					Bernabò Brea and Cavalier 1991
21	Lipari	Pianoconte, San Calogero	Surface sherds	Survey	200	Moderate slope	SPD	Ploughed field				1										Unpublished
22	Lipari	Piano Greca	Surface sherds	Survey	95	Upland plain	SPD	Ploughed field				1										Unpublished
23	Lipari	Piazza Monfalcone (Lipari town)	Burials	Excavation	10	Coastal plain	SPD	Built-up area											1			Bernabò Brea and Cavalier 1960: 106-25 (layer VII)
24	Lipari	Piazza Monfalcone (Lipari town)	Settlement	Excavation	10	Coastal plain	SPD	Built-up area				1		1		1						Bernabò Brea and Cavalier 1960: 126 (layer VIII)
25	Lipari	Pignataro di Fuori	Ship wreck	Excavation	-	-	-	Underwater site									1					Bernabò Brea 1985: 48-52; Ciabatti 1978: 7-35; Castagnino Berlinghieri 2003: 74-78; Mazza 2019
26	Lipari	Quattropani, Castellaro	Settlement	Survey, test pit, excavation	380-410	Upland plain	SPD	Ploughed field	1			1					1					Bernabò Brea and Cavalier 1957: 97-110; Cavalier 1979: 45-78; Bernabò Brea and Cavalier 1956: 19-21; Nomi and Speciale 2017: 87-90
27	Lipari	Spatarella	Settlement	Excavation	240	Upland plain	SPD	Abandoned field					1									Cavalier 1979: 81-92; Martinelli 2001: 89-112
28	Panarea	La Calcara	Ritual	Excavation	1	Coastal plain	SPD	Beach				1				1	1?					Bernabò Brea and Cavalier 1968: 7-35
29	Panarea	Drauto	Single burial?	Casual find	Unknown	Coastal plain	SPD	Built-up area							1							Bernabò Brea 1947: 226-27; Bernabò Brea and Cavalier 1968: 47
30	Panarea	Piano Quartara	Settlement	Excavation	25	Moderate slope	SPD	Built-up area				1			1	1						Bernabò Brea and Cavalier 1968: 38-44; Bernabò Brea 1947: 230-38
31	Panarea	Punta del Corvo	Surface sherds, obsidian, hunting post?	Survey	420	Extreme slope	HPD/L	Wilderness				1										Cavalier 1979: 107; Bernabò Brea and Cavalier 1968: 36-7
32	Panarea	Punta Milazzese	Settlement	Excavation	20	Headland	SPD/L	Wilderness			1						1	1			Caracuta *et al.* 2012	Bernabò Brea and Cavalier 1968: 50-132 (56-57, Serra d'Alto e Capo Graziano)

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									Middle			Late	Early	Middle	Late	Early	Middle I–II	Middle III	Late	Final		
									Stentinello	Tricromica	Serra d'Alto	Diana	Diana Spatarella	Pianoconte	Piano Quartara	Capo Graziano I	Capo Graziano II	Milazzese	Ausonio I	Ausonio II		
									5500–4500 BC			4500–4100 BC	4100–3800 BC	3800–2800 BC	2800–2200 BC	2200–1700 BC	1700–1500 BC	1500–1300 BC	1300–1150 BC	1150–900 BC		
33	Panarea	Punta Peppemaria	Surface sherds settlement?	Survey, test pit	10	Headland	HPD	Built-up area									1					Bernabò Brea and Cavalier 1968: 47
34	Panarea little islands	Basiluzzo	Surface sherds	Survey	100-160	Moderate slope	HPD/L	Abandoned field				1										Bernabò Brea 1947: 238-39
35	Panarea little islands	Lisca Bianca-Lisca Nera-Dattilo	Surface sherds	Survey	2-100	Moderate slope	SPD	Wilderness				1										Bernabò Brea 1947: 238-39
36	Salina	Barone	Surface sherd	Casual find	unknown	Unknown	unknown	unknown										1				Bernabò Brea and Cavalier 1995: 121
37	Salina	Malfa	Single burial	Casual find	unknown	Unknown	unknown	unknown							1							Bernabò Brea 1947: 220-22
38	Salina	Fossa delle Felci	Surface sherds settlement?	Survey, test pit	960	Upland plain	SPD/HPD	Wilderness				1										Bernabò Brea and Cavalier 1995: 17
39	Salina	Policastro	Surface sherd	Casual find	unknown	Unknown	unknown	unknown									1					Bernabò Brea and Cavalier 1995: 119-20
40	Salina	Portella	Settlement	Excavation	0-300	Steep slope	HPD	Abandoned terraces										1			Martinelli 2005; 2010	Bernabò Brea and Cavalier 1968: 144-80; Martinelli 2005; Martinelli 2010
41	Salina	Portella	Burial/ritual	Excavation	300	Steep slope	HPD	Abandoned terraces									1					Martinelli 2010: 285-98
42	Salina	Punta Megna	Settlement	Excavation	25-50	Coastal plain	SPD/HPD	Abandoned field									1					Bernabò Brea and Cavalier 1995: 77-87
43	Salina	Rinicedda	Settlement	Excavation	90	Moderate slope	SPD	Abandoned field	1												Martinelli 2016	Bernabò Brea and Cavalier 1995: 31-74, 165-86
44	Salina	Serro Brigadiere	Settlement	Excavation	100	Upland plain	SPD	Built-up area					1	1	1	1		1				Bernabò Brea and Cavalier 1995: 91-108
45	Salina	Serro dei Cianfi	Settlement	Excavation	150	Steep slope	HPD	Abandoned field									1	1				Bernabò Brea and Cavalier 1968: 138-43
46	Salina	Serro dell'Acqua	Settlement	Excavation	55	Upland plain	HPD	Built-up area							1		1					Bernabò Brea and Cavalier 1995: 111-16
47	Salina	Val di Chiesa, località Salvatore	Surface sherd	Casual find	290	Moderate slope	SPD	Ploughed field										1				Unpublished survey by Felice Lopes
48	Stromboli	Ginostra Timpone del Fuoco	Settlement	Test pit	140	Upland plain	SPD	Built-up area						1	1		1					Bernabò Brea and Cavalier 1968: 45-46, Buchner 1949; Martinelli *et al.* 2014: 158
49	Stromboli	San Vincenzo	Settlement	Excavation	65-70	Moderate slope	SPD	Abandoned field					1			1	1				Vidale 2018	Cavalier 1981; Levi et al 2011; 2017; 2018; Bettelli *et al.* 2016; Vidale *et al.* 2018
50	Stromboli	Serra Fareddu	Settlement	Excavation	230	Strong slope	SPD	Abandoned field						1								Cavalier 1979: 126-36

* SPD: Soft Pyroclastic Deposits; HPD: Hard Pyroclastic Deposits; L: Lava
** The radiocarbon dates are listed in Martinelli 2020: 170-77
*** See database bibliography