Cultural landscapes, social networks and historical trajectories: A data-rich synthesis of Early Bronze Age networks (c. 2200-1700 BC) in Abruzzo and Lazio (Central Italy)

Rossenberg, E.A. van

Chapter 7
Changing places: Early Bronze Age settlement patterns and mobility

> "scarsi sono i dati relativi alle modalità insediative e pressoché inesistenti quelli inerenti ai regimi economici" (Cocchi Genick 1998, 355)[164]

In general, open-air sites predominate EBA archaeological records in Central Italy (§3.1), but this does not mean that, accordingly, settlement patterns are more clear-cut than patterns related to other constituent elements of cultural landscapes (Chapters 4-6). For a start, there is considerable variation in the numbers of EBA open-air sites, commonly regarded as settlements, that are presently known from each Central Italian region. With respect to other regions (Table 3.1), open-air sites in Lazio are overrepresented in Cocchi Genick's synthesis (1998), to which more recent (sub)regional overviews have added further sites (Appendix 4). The main overviews of EBA sites in Lazio published after Cocchi Genick's synthesis concern an overview of the EBA-MBA in southern Lazio (Angle & Guidi 2007) and a catalogue of Bronze Age and Early Iron Age sites in the provinces of Viterbo, Roma and Frosinone (Belardelli et al. 2007). Despite Ialongo's recent synthesis of the FUCINO BASIN (2007) a discrepancy remains in numbers of open-air sites between Abruzzo and Lazio. Following the bias in field surveys to prefer hinterlands of Etruscan and early Roman (proto)urban communities as research areas (§1.2), the main focus will lie on EBA settlement patterns in Lazio in this chapter. In this respect, the discrepancy in numbers of open-air sites between 'coastal' Abruzzo, the intermontane region and 'coastal' Lazio is more of a hindrance for interregional comparison than was the case of the other constituent elements of EBA cultural landscapes, i.e. metalwork deposition (Chapter 4), burial (Chapter 5) and cave use (Chapter 6), discussed so far. Nonetheless, a number of broader patterns related to open-air sites and settlement patterns can be discussed in this chapter from a regionally comparative perspective.

Starting with an overview of open-air sites currently known from Abruzzo and Lazio (§7.1; Appendix 4), the first question to be addressed is to what extent the general sense of discontinuity in trajectories of open-air sites between EBA1 and EBA2 in Cocchi Genick's synthesis (§3.2; Table 3.5) still stands. This overview will underscore that the quantitative predominance of open-air sites in Abruzzo and Lazio with respect to other constituent elements of EBA cultural landscapes is mainly due to ongoing field survey projects, as well as redating of previous finds. In a qualitative sense, however, excavations of open-air sites are still rare, albeit on the increase. As a consequence, it is difficult to make assessments whether those open-air sites selected for excavation are representative and actually settlements. A research bias seems to exist towards excavating those sites identified by chance (as part of rescue excavations) or selected because of the particular surface assemblages that make them stand out from other sites. So far, the evidence for structural elements and EBA houses in Abruzzo and Lazio is so circumstantial that any understanding of settlement patterns has to rely on the spatial distribution of open-air sites (§7.1) and their interrelationships with other places in cultural landscapes (Chapter 8). The overview of the spatial distributions and trajectories of open-air sites is a first step in the analysis of open-air sites in cultural landscapes and social networks and will spill over in a visualisation and discussion of 'typo-networks' based on EBA ceramics (§3.2.1) on the regional scale of Abruzzo and Lazio (§7.2). These proxies for regional connectivity will incorporate new and redated open-air and cave assemblages, thereby enhancing the 'typo-networks' based on Cocchi Genick's (1998) synthesis alone (Figures 3.1, 3.2, 3.3 & 3.4).

Subsequently, the specifics of open-air assemblages will be explored in order to reveal more detailed patterns that can be related to cultural landscapes and social networks. Although at present it is difficult to determine and distinguish between the functions of open-air sites on the basis of surface assemblages alone, an attempt will be made at polythetic classification of the respective assemblages (§7.3). The tendency in (supra)regional site overviews in search of settlement patterns is to presume that all EBA open-air sites are invariably the remains of settlements. In a comparison with cave assemblages (§6.2.1), the polythetic classification of open-air assemblages can substantiate Cocchi Genick's conclusion (1998) that a select group of open-air sites shows a similarly ritual character and

[164] "Evidence related to settlement patterns is scarce and that related to subsistence virtually non-existent" (Cocchi Genick 1998, 355; my translation).

should be regarded as cult places (rather than settlements). This is not only based on vessel types and 'ceramic connections' identified as ritual in character by Cocchi Genick's classification, but also their combination with (or dissociation from) other classes of objects and substances (§7.3). At the same time, I will argue that an EBA tradition of isolated acts of ceramics deposition includes particular, limited open-air assemblages, as an extension of the predominant polythetic group of limited cave assemblages (§6.2.1). Another element of comparison between open-air sites and cave assemblages concerns faunal samples and to a lesser extent botanical samples (§7.4). This analysis was postponed to this chapter to address the issue of the potential role of caves in the context of EBA settlement patterns. This appreciates that reconstructions of subsistence strategies that require mobility, such as pastoralism and hunting, benefit from a 'multi-sited' approach. Finally, the basic patterns concerning settlement patterns and open-air sites will be highlighted (§7.5) and further, 'multi-sited' questions will be raised that have to be addressed in the synthesis (Chapter 8).

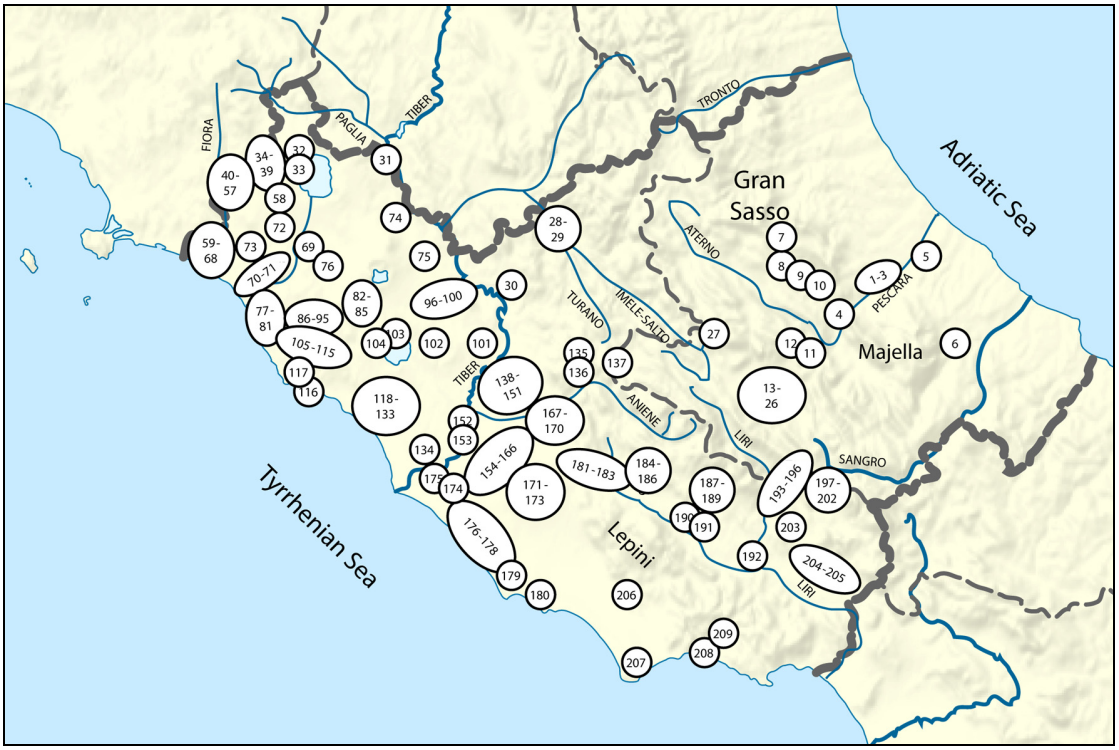

Figure 7.1. map (adapted from http://commons.wikimedia.org/wiki/File:Italy_map-blank.svg) showing the spatial distributions of EBA open-air sites in Abruzzo and Lazio [nos. refer to Appendix 4]. Larger icons refer to groups of sites, smaller icons to 'isolated' sites.

7.1 Mind the gaps: settlements and other open-air sites in cultural landscapes

Field surveys and to a lesser extent excavations have helped to increase the number of EBA open-air sites known in Abruzzo and Lazio over the last decades. However, a lot of ground still has to be covered, given the limited extent of the respective areas of research. The gaps in EBA archaeological records due to this research bias have to be taken into account, as well as low archaeological visibility deriving from (post)depositional processes. Nonetheless, an attempt will be made to assess to what extent the 'absence of evidence' in the spatial distributions of open-air sites can still be phrased in terms of 'evidence of absence'. To this end, a comparison will be made between the distributions of open-air sites and other constituent elements of cultural landscapes, i.e. metalwork deposition (Chapter 4), burial (Chapter 5) and cave use (Chapter 6). If the respective distributions are uneven and include patterns of dissociation as a cultural bias, such a 'thick description' has the potential of shedding light on the issue of 'gaps' in archaeological records on (sub)regional scales. For instance, it can be argued that the absence of open-air sites in a well-researched area refers to a past reality, provided that post-depositional processes such as erosion or sedimentation have not erased or hidden significant parts of settlement patterns.

7.1.1 Coastal Abruzzo

The number of EBA open-air sites presently known from the coastal provinces of Abruzzo is incredibly low (Table 7.1). On the one hand, the overall pattern of underrepresentation can be attributed to the absence of a strong research tradition of systematic regional field surveys, such as in Lazio. This results in a rather distorted view of EBA settlement dynamics in 'coastal' Abruzzo (cf. D'Ercole 2000, 147). The majority of those open-air sites that are known, are connected to major river valleys. If these represent a preferential site location (or settlement pattern) in association with river valleys, another explanation for the overall scarcity of EBA evidence is depositional or post-depositional in character. It could indicate that very low archaeological visibility is due to geologically dynamic fluvial and mountainous contexts, in particular changes in river courses and continuous sedimentation in river valleys and coastal areas.[165] This scenario seems to be corroborated by the fact that some sites have been found by chance at considerable depth from the present surface during construction work.[166] On the other hand, the potential that is 'concealed' by a lack of systematic field surveys, both inside and outside river valleys, should not be underestimated.[167]

In the province of Teramo (TE) evidence for EBA metalwork deposition (§4.2.1), cave use (§6.1.1) and perhaps other places of burial (§5.1.1) is not complemented by open-air sites based on the presence of EBA ceramics. The discovery of so-called houses ("fondi di capanna") in 'antiquarian' explorations by Rosa in the VIBRATA valley (cf. Colini 1906) cannot be corroborated. The structures interpreted as the remains of houses to which the majority of the antiquarian finds have been ascribed, are semi-subterranean, with dimensions ranging between 2m and 4m. The assemblages reportedly consist of charcoal, ashes, bone fragments, quernstones, ceramic fragments and worked flint, dated generically to the Neolithic, Copper Age and Bronze Age. However, explicitly EBA ceramics have not been published (yet) and neither does an EBA parallel exist for the reported association of 'early bronze' axes with some of these structures (§4.2.1). On the other hand, human remains have sometimes been reported explicitly, which could suggest that some of these structures had been used as funerary contexts,[168] or as depositional contexts incorporating a wider range of objects and substances, including metalwork. The circumstantial nature of the evidence prevents from drawing particular conclusions.

	Copper Age	EBA1	generically EBA	EBA2
Vibrata valley (TE)	?	?	?	?
upper Pescara valley (PE)	[#4] San Callisto [#1] Vicenne	[#4] San Callisto	[#1] Vicenne [#2] Torre dei Passeri [#3] Madonna degli Angeli	-
lower Pescara valley (PE)	-	-	[#5] Chieti-"teatro romano"?	-
lower Sangro valley (CH)	-Lanciano?	?	-Lanciano?	?
middle Sangro valley (CH)	[#6] Colle Longo-Roccascalegna	[#6] Colle Longo-Roccascalegna?	-	-

Table 7.1: overview of (late) Copper Age-EBA open-air sites in 'coastal' Abruzzo [nos. refer to Appendix 4 & Figure 7.1].

The majority of EBA open-air sites presently known from 'coastal' Abruzzo are situated in the PESCARA valley [#1-5], in particular its upper part (Table 7.1; Figure 7.1).[169] Their spatial distribution merges with the concentration of EBA metalwork in the UPPER PESCARA micro-region (§4.2.1; Table

[165] For instance, see Di Celma et al. 2000; D'Alessandro et al. 2008 for the dynamic situation in the LOWER SANGRO valley (CH). In the TRONTO river valley (TE) a Copper Age radiocarbon date [Beta-Analytic 162253: 4360±60 BP] has been reported for fluvial sediments at a depth of *c.* 4m below the present surface (Coltorti & Farabollini 2008, 50 [fig. 8]). Similarly, a Copper Age radiocarbon date [SSAMS ANU-6010: 4125±35 BP] has been reported for marine sediments at a depth of c. 6m below the present surface, *c.* 600m landward from the present shoreline in the LOWER PESCARA valley (Parlagreco et al. 2011).

[166] Cf. Ardesia (2006, 14-15) who reports that the open-air site of VICENNE [#1] was found buried under 7m of fluvial deposits in the PESCARA valley.

[167] The potential is underscored by the distribution of numerous sites found in the Lower Sangro Valley Survey project, which has not been published in detail yet. The map in a preliminary publication (Di Celma et al. 2000, 24 [fig. 1]) follows a broad classification of Palaeolithic, Mesolithic, Neolithic, Copper Age, Bronze Age, Iron Age, Roman, medieval and later sites.

[168] One of the structures (COLLE DELLA BADIA) was discussed as a funerary context (§5.1.1). The contextual information provided by Rosa is not consistent enough to suggest a tradition of burial in collective, semi-subterranean tombs in this particular micro-region, or reuse of prior settlements as a funerary context.

[169] The EBA date of CHIETI-"TEATRO ROMANO" [#5] is circumstantial and is in itself no reason to expect additional evidence for EBA open-air sites in the LOWER PESCARA valley.

4.12). More in particular, the cluster of three limited EBA assemblages (VICENNE [#1]; TORRE DEI PASSERI [#2]; MADONNA DEGLI ANGELI [#3]) along a short stretch of the major river are circumscribed by a zone of metalwork deposition (ALANNO) to the northeast, the isolated piece of metalwork (CASTIGLIONE A CASAURIA) to the southwest (§4.2.1) and a cave that has been interpreted as a persistent cult place (GROTTA DEI PICCIONI) in the ORTA valley to the southeast (§6.1.1).[170] If this situation is taken at face value, the cluster of limited and imprecisely dated open-air sites can be considered as an EBA settled community [#1-3]. Then its location in the major river valley contrasts with sites of ritual practice (i.e. metalwork deposition and cave use) in connection with its tributaries. However, the current bias against settlements in the EBA archaeological record due to the current state of research and geological, (post)depositional circumstances, should be recalled.

The only well-dated EBA open-air site in the UPPER PESCARA micro-region (SAN CALLISTO [#4]) is situated further upstream, near the source area at POPOLI, on the opposite side of the passage of the river from the mountains into the coastal plain. The limited EBA1 assemblage is predominated by decorated ceramics and includes a fragment with an anthropomorphic decoration that has a parallel in a funerary context in the Southern Italian region of Puglia (cf. Cocchi Genick 1998, 240-241, 266, 330). The characteristic of a limited assemblage of decorated ceramics seems to contradict the interpretation of the site as a settlement and could in itself corroborate an interpretation in terms of one or several acts of ceramics deposition. The site is associated with an earlier, Neolithic-Copper Age assemblage, which conveys it with a sense of prior place as a context for ceramics deposition, arguably ritual in character (§7.3). This recalls the interpretation of the isolated halberd (POPOLI), generically from the PESCARA source area, as deriving from an act of metalwork deposition rather than a burial (§4.2.1). The overall coincidence of concentrations in the spatial distributions of EBA open-air sites and metalwork in the UPPER PESCARA micro-region will be explored in the diachronic overview of settlement patterns and ceramic connectivity as a proxy for social networks on a regional scale (§7.2). In this respect, the Southern Italian connection of the EBA1 ceramics in the SAN CALLISTO assemblage (see above) is in line with the reconstruction of metallurgical spheres overlapping in southern Abruzzo (§4.4).

Similarly, the assemblage of the single EBA open-air site presently known from the province of Chieti (COLLE LONGO-ROCCASCALEGNA [#6]), situated in the MIDDLE SANGRO valley (Table 7.1; Figure 7.1), shows connectivity to the the southern Adriatic sphere, i.e. the region of Puglia, at the Copper Age-EBA1 transition (Di Fraia 2003, 2006).[171] This also seems to corroborate the scenario of EBA cultural and metallurgical spheres bordering and/or overlapping in the PESCARA valley. In this context, the MAJELLA MOUNTAINS do not seem to have been a physical barrier so much as a connecting element or a focus for the communities in its surroundings. The focal role of these mountains was also argued on the basis of the spatial pattern of ritual cave use along the edges of the MAJELLA established at least since the Neolithic (§6.1.1; Table 6.1), including a shared tradition of rock art (§6.2.2).[172] On the other hand, the extension of metalwork deposition from the UPPER PESCARA micro-region to include the opposite side of the mountains, seems to have constituted an EBA2 phenomenon (§4.2.1; §4.2.4). The reported presence of burnt wattle-and-daub and floor fragments suggests the existence of at least one structure or house at COLLE LONGO-ROCCASCALEGNA [#6], which could be Copper Age rather than EBA1 in date.

Overall, however, EBA settlement patterns remain as elusive as in other parts of the region. In particular, open-air sites dated to EBA2 are currently unknown from 'coastal' Abruzzo as a whole (Table 7.1), seemingly reversing the pattern of underrepresentation of EBA1 with respect to EBA2 assemblages in Central Italy (§3.1; §3.2). Given the current state of research as well as low archaeological visibility due to geological circumstances in river valleys,[173] the preliminary state of publication of the systematic field survey in the area of LANCIANO (Di Celma et al. 2000) to the northwest of the SANGRO river mouth (Table 7.1), one of the very few in the region, is tantalising.

[170] Cf. the map in the most recent synthesis (Ardesia 2006, 14 [fig. 2a]), but notice it collapses the EBA1, generically EBA and EBA2 finds into a single representation. Moreover, one of the isolated EBA metalwork findspots on this map (the axe from MANOPPELLO [no. MA007], cf. Ardesia 2006, 15) has been redated to MBA1.

[171] For a discussion of the composition of the assemblage from the small-scale excavation at COLLE LONGO-ROCCASCALEGNA, see the polythetic classification (§7.2) and the analysis of faunal samples (§7.3).

[172] This seems to be corroborated by the recent discovery of rock art site in the SANGRO valley at LE PASTINE (Di Fraia 2008), completing the distribution of late prehistoric rock art along other sides of the MAJELLA MOUNTAINS (Grifoni Cremonesi 1968/1969; Burri 1977; De Pompeis & De Pompeis 1984; De Pompeis & De Pompeis 1997).

[173] In addition to the instances discussed above, the first finds of the COLLE LONGO-ROCCASCALEGNA [#6] assemblage came to light during the planting of olive trees, from a depth of 80-90 cm below the present surface (Di Fraia 2003, 267).

7.1.2 The intermontane region

Extensive field surveys have taken place in the intermontane region, in particular the FUCINO BASIN in Abruzzo and the RIETI BASIN in Lazio. Originally these intermontane basins had been considered to be fairly similar, i.e. incorporating a large lake with fluctuating water levels in closed basins. Recently, a considerably more dynamic environment has been reconstructed for the RIETI BASIN (Calderini et al. 1998). The distincton in environmental settings of these basins probably constitutes the main reason for a distinction in archaeological visibility of EBA open-air sites between the RIETI BASIN and the FUCINO BASIN (Table 7.2), but differences in current land use and survey strategies should also be taken into consideration (see below). In the intermontane valleys, on the other hand, the archaeological visibility of open-air sites is probably affected by erosion and sedimentation in mountainous and riverine contexts. Contrary to traditional scenarios that have focused on (seasonal) cave use and suggested that consistent exploitation of mountainous areas would have been largely a later, Middle Bronze Age phenomenon (e.g. Barker 1981 for Central Italy, and Barker 1995b for Molise, immediately to the south of Abruzzo), the evidence for EBA open-air sites is generally substantial enough to study settlement patterns in the intermontane region (Table 7.2; Figure 7.1).

	Copper Age	EBA1	generically EBA	EBA2
Sabine foothills (RI)	-	-	-	[#30] Progetto Galantina-sito 68
Rieti basin (RI)	-	-	[#28] Montisola [#29] Casa Fonte Giovannone	-
upper Imele-Salto valley (RI-AQ)	-Scurcola Marsicana-Vallone di Ritorta-Monte San Nicola -Antrosano	-	[#27] S. Maria di Borgorose? -"Borgorose"?	-
upper Aterno-Tirino watershed (AQ)	-	[#9] Navelli	[#8] Caporciano [#9?] Navelli-Madonna del Campo	[#7] Santo Stefano di Sessanio [#9] Navelli [#10] San Salvatore
middle Aterno valley (AQ)	[#11] Le Castagne [#12] Macrano	-	[#11] Le Castagne [#12] Macrano?	-
Fucino basin (AQ)	[#14] Venere-Restina -Le Coste [#15] Ortucchio-La Madonella 1 [#16] Ortucchio-strada 28 -Ortucchio-Colle S. Stefano 2 -Luco-Villino sor Paolo -Avezzano-Le Mole 1 -S. Pelino-Masciarelli -Paludi di Celano	[#14] Venere-Restina [#15] Ortucchio-La Madonella 1 [#16] Ortucchio-strada 28 [#17] Ortucchio-Balzone 1 [#22] Luco-strada 45 [#23] Avezzano-le Mole 3 [#24] Avezzano-strada 6 [#25] Avezzano-strada 7	-	[#13] Colle Felicetta [#16] Ortucchio-strada 28 [#17] Ortucchio-Balzone 1 [#18] Trasacco-S. Rufino 1 [#19] Trasacco 1 [#20] Trasacco 2 [#21] Trasacco-il Mulino [#22] Luco-strada 45 [#24] Avezzano-strada 6 [#26] Avezzano-strada 8?

Table 7.2: overview of (late) Copper Age-EBA open-air sites in the intermontane region [nos. refer to Appendix 4 & Figure 7.1].

The majority of EBA open-air sites in the L'Aquila (AQ) province, i.e. intermontane Abruzzo, are situated in two micro-regions that have been subjected to many years of (unsystematic) surveying by two local archaeologists. This concerns the work by Mattiocco in the context of the intermontane PESCARA tributaries (i.e. the ATERNO valley, the TIRINO valley and the SULMONA BASIN), on the one hand (e.g. Mattiocco 1986), and the work by Irti in (and to a lesser extent around) the FUCINO BASIN, on the other hand.[174] Following redating of ceramics (cf. Di Fraia 1996a; Cocchi Genick 1998; Ialongo 2003, 2007), a considerable number of these surface assemblages have been attributed to EBA1 and EBA2 (Table 7.2). This effort has also established EBA dates for two excavated, but poorly published lake-side assemblages (ORTUCCHIO-STRADA 28 [#16]; TRASACCO 1 [#19]) in the FUCINO BASIN. Although it is unclear whether structural remains from these excavations should partly be redated accordingly, the FUCINO micro-region is one of the few for which enough evidence is available at present to presume the existence of a settled community in EBA1 and EBA2 (Table 7.2). This provides the opportunity to study micro-regional EBA settlement dynamics in more detail (see below).

[174] Irti himself had never attributed EBA dates to any of his finds, but only to the Copper Age and MBA1 (cf. Irti 1991, 2001a, 2003), apart from the bronze axe found at ORTUCCHIO-STRADA 28 (Irti 1981), subsequently redated to MBA1.

The ATERNO-TIRINO cluster

The spatial distribution of the EBA open-air sites [#7-12] situated in connection with the intermontane PESCARA tributaries, in particular the ATERNO and TIRINO valleys (Figure 7.1; Table 7.2), highlights regional connectivity with those in the UPPER PESCARA micro-region to the east in 'coastal' Abruzzo (§7.1.1; Table 7.1) and in the FUCINO BASIN to the southwest (Table 7.2). Despite the limited scope of the assemblages [#7-12], such a sense of connectivity is underscored by 'ceramic connections' (see below). Given the current state of research, a diachronic trend in settlement patterns can be discerned in the apparent abandonment of open-air sites in the MIDDLE ATERNO valley [#11-12] before EBA2,[175] and the emergence of a larger group of open-air sites in the area between the UPPER ATERNO valley and the TIRINO valley [#7-10] in EBA2. This trend could indicate that a network change in cross-APENNINE connectivity occurred in EBA1 (§7.2). In particular, the new place (NAVELLI [#9]) that was established in the intermontane plain in subphase BA1B shows ceramic connectivity with the EBA1 open-air site (SAN CALLISTO [#4]) in the UPPER PESCARA micro-region (§7.1.1), as well as several assemblages in the FUCINO BASIN.[176] It recalls the cross-APENNINE sense of directionality in the spatial distribution of 'horizon II' metalwork, connecting the FUCINO BASIN, the TIRINO valley (i.e. the CAPESTRANO hoard) and the UPPER PESCARA micro-region (§4.4.2; Figure 4.8). This coincidence would situate the establishment of the open-air site at NAVELLI in exchange networks involving metalwork.

NAVELLI [#9] persisted and was part of a series of EBA2 sites (SANTO STEFANO DI SESSANIO [#7]; CAPORCIANO [#8]; SAN SALVATORE [#10]), in connection with the intermontane plain that runs parallel to the MIDDLE ATERNO valley and the TIRINO valley. SANTO STEFANO DI SESSANIO [#7] is situated at a higher elevation, at a small lake closer to the peaks of the GRAN SASSO MOUNTAINS. This particular assemblage includes a peculiar vessel type, only shared with a cave in southern Tuscany.[177] This could indicate that the small lake at SANTO STEFANO DI SESSANIO was a depositional zone. The status of these series of sites as a group is based on their spatial proximity, as well as a vessel type exclusive to the group.[178] Furthermore, connectivity between NAVELLI [#9] and sites in the FUCINO BASIN persisted between EBA1 and EBA2 (§7.2).[179] At present, 'ceramic connections with 'coastal' Abruzzo are absent, given the overall lack of EBA2 assemblages (§7.1.1). It remains unclear whether the ATERNO-TIRINO cluster of open-air sites should be regarded as the remains of a permanent, settled community, or as a series of seasonal (or periodic) sites and meeting-places.[180] Di Fraia (1996a, 488) has suggested that EBA 'ceramic' and 'metallurgical' connections between southern Abruzzo and Southern Italy should be seen in the light of seasonal mobility of pastoralists over long distances, between the region of Puglia and southern Abruzzo, implicating the intermontane open-air sites in the ATERNO-TIRINO cluster.[181] At present, this scenario cannot be substantiated because of a lack of well-dated faunal samples from EBA assemblages (§7.4). Without denying the possibility of periodic, occasional occurrence of mobility over (very) long distances, I would argue that the range of habitual, seasonal patterns of EBA mobility should not be overestimated.

The minimalist interpretation is to link the emergence of the ATERNO-TIRINO group of open-air sites [#7-10] as a network change in EBA1 [subphase BA1B] and EBA2 (§7.2). The impression of a network change is strengthened by the abandonment of a major Copper Age cult place (GROTTA A

[175] The two open-air sites reported from the MIDDLE ATERNO valley (LE CASTAGNE [#11]; MACRANO [#12]) seem to have predominantly constituted Copper Age places, although the small semi-subterranean structure at LE CASTAGNE may include some later elements, generically EBA in date (Appendix 4 [#11]).

[176] VENERE-RESTINA [#14], AVEZZANO-LE MOLE 3 [#23], AVEZZANO-STRADA 6 [#24] (Ialongo 2007, 150 [tipo 1]) and ORTUCCHIO-STRADA 28 [#16] (Ialongo 2007, 151-153 [tipo 10 (undecorated)] = Cocchi Genick 1998, 103-105 [tipo 20, i.e. a decorated type of small bowl]).

[177] GROTTA DELLO SCOGLIETTO (Cocchi Genick 1998, 169 [tipo 103]).

[178] SANTO STEFANO DI SESSANIO [#7], SAN SALVATORE [#10] (Cocchi Genick 1998, 217 [tipo 175B, i.e. handle]).

[179] COLLE FELICETTA [#13] & ORTUCCHIO-STRADA 28 [#16] (Ialongo 2007, 167 [tipo 54A, i.e. handle] = Cocchi Genick 1998 [tipo 177, PUNTA DEGLI STRETTI; GROTTA DEL BEATO BENINCASA, VALLONE].

[180] Cf. Di Fraia's remarks on this particular group of open-air sites: "sarebbe anche azzardato ... innalzare tout court ciascun ritrovamento al rango di vero e proprio insediamento" (1996a, 488 = "it's risky to interpret every open-air site as a 'true' settlement", my translation). In this case, the contribution of polythetic classification (§7.3) is limited, because the same sites persist in MBA1. Other classes of objects and substances than ceramics, such as spindle-whorls (NAVELLI [#9]; SAN SALVATORE [#10]), arrowheads (SAN SALVATORE [#10]) and faunal remains (SANTO STEFANO DI SESSANIO [#7]), can therefore not be dated more precisely than EBA2-MBA1 (§7.3).

[181] At the same time, another scenario stresses, on the contrary, the impermeability of the majority of Copper Age communities in Abruzzo and connects the introduction of EBA cultural elements to principal routes of cultural exchange (Di Fraia 1996a, 488). The latter scenario does not take into account that the connectivity that is inherent in physical landscapes such as mountainous environments, more or less dictates that 'Copper Age' patterns of residential mobility would have followed (stretches of) the same routes as so-called "principle routes of cultural exchange" (Di Fraia 1996a, 488, my translation).

MALE; §6.1.2) and a Copper Age cemetery (ASSERGI; §5.1.2) in the UPPER ATERNO tributary from the GRAN SASSO MOUNTAINS. Unfortunately, the unsystematic nature of the field surveys carried out in the ATERNO valley cannot help to substantiate this scenario. Either as seasonal sites or as the remains of a settled community, the ATERNO-TIRINO cluster would have constituted a significant node in EBA networks, connecting the UPPER PESCARA micro-region and the FUCINO BASIN (§7.2).

The FUCINO BASIN

The FUCINO BASIN is one of the best-researched micro-regions in Abruzzo and Lazio as a whole. Apart from metalwork deposition (§4.2.2) and cave use (§6.1.2), the number of EBA open-air sites and settlement patterns in this micro-region is relatively high (Table 7.2). The open-air sites are generally regarded as lake-side settlements, as the closed intermontane basin harboured a large lake until recent history. However, it should be taken into account that lake-levels fluctuated considerably in the closed basin, following shorter periodicities (e.g. seasonal, generational) than those reflected in the longer term of periods and phases in cultural classifications (Irti 2003, 260). These circumstances will be considered in more detail in the following diachronic, phase-by-phase overview of micro-regional settlement patterns (Figures 7.2, 7.3 & 7.4). This relatively fine-grained reconstruction of EBA settlement dynamics is based on the typological classification of ceramics from open-air and cave assemblages in the FUCINO BASIN published recently (Ialongo 2007). This recent synthesis is more detailed than the preliminary summary (Ialongo 2003), which had conveyed a false sense of continuity in trajectories of open-air sites by collapsing several phases into one generic EBA.

Copper Age-EBA1

Comparison of the spatial distributions of open-air sites in the FUCINO BASIN shows a high degree of discontinuity in preferential site locations between the Copper Age and EBA1 (Figure 7.2; Table 7.2).[182] Two basic scenarios have been proposed to explain this pattern, one in terms of lake-level fluctuations and the other in terms of differentiation in subsistence strategies. The first scenario is that a shift in settlement location from terraces to the lake-side took place at the end of the Copper Age, when lake-levels in the intermontane region had already lowered considerably due to the general climatic trend (§3.4; Table 3.8).[183] This scenario entails a considerable degree of circular reasoning, since geologists have based their reconstructions of lake-level fluctuations to a large extent on archaeological distribution maps, without taking the impact of postdepositional activity on archaeological visibility into consideration (e.g. Giraudi 1989).[184] In this respect, even the alternative scenario of a considerable lake-level rise after the Copper Age has been proposed (Ialongo 2007, 319-320, 322 [fig. 229]).[185]

The second basic scenario is that distinctions in site location between terraces and lake-side in the FUCINO BASIN reflect differentiation in subsistence strategies (and perhaps residential mobility), irrespective of lake-level fluctuations.[186] In this scenario the shift in preferential site locations towards the lake-side (Figure 7.2) implies an emergent pattern of permanent, year-round settlements in a

[182] The pattern also includes the abandonment of two Copper Age open-air sites immediately to the northwest of the basin in the UPPER IMELE-SALTO valley (Table 7.2), i.e. ANTRESANO and SCURCOLA MARSICANA-VALLONE DI RITORTA-MONTE SAN NICOLA (Irti 2001a, 88-91; Irti 2003, 260-261), closest to the Copper Age burial of CAMERATA DI TAGLIACOZZO (§5.1.2).

[183] Radi 2003, 248-249 [fig. 4]. The argument is mainly based on two excavated Copper Age open-air sites, the earlier one (LE COSTE) situated on a terrace overlooking the lake (Radi & Ventura 1994; Radi 1995; Radi et al. 2001; Radi 2003) with a final Copper Age-EBA gap in its trajectory and the later one situated at the lake side (Radmilli 1977, 348-374) with a trajectory that started in the final Copper Age (ORTUCCHIO-STRADA 28 [#16]).

[184] Ialongo (2007, 319) offers mild criticism of this approach that considers archaeological sites as a marker of lake-levels, and suggests that in the putative case of pile-dwelling structures in the FUCINO BASIN these would have been situated within the confines of (not at) the lake-side. Nonetheless, he adheres to the same approach by treating sites at lower elevations (i.e. deeper within the confines of the reconstructed lake) as anomalies (Ialongo 2007, 320) and consequently takes the archaeological distribution maps similarly at face value. He does not engage with the possibility that this site location is underrepresented due to postdepositional processes, whereas site locations used as lake-side markers are overrepresented in the archaeological record.

[185] His argument is based on the lower elevation (656-658m a.s.l.) of the Copper Age-EBA site of ORTUCCHIO-STRADA 28 [#16], reportedly a dryland site, and the higher elevation (661-662m a.s.l.) of one of its assemblages (ORTUCCHIO-LAGHETTO [#16]), reportedly a pile-dwelling site. His argument does not take into account the microtopographical situation of the large area in question (perhaps including the influence of continuous seismic activity along several faults that geologically define the Fucino basin), lake-level fluctuations with shorter periodicities, nor the possibility that the ORTUCCHIO-LAGHETTO assemblage did not follow a continuous trajectory, contrary to the general assumption that underlies Ialongo's synthesis (2007).

[186] Ialongo (2003, 641) does not engage with the possibility of diachronic differentiation in terms of several Copper Age phases, like the first scenario (but cf. Ialongo 2007, 320). Rather, it uses a synchronic approach to highlight a change in the choice of settlement locations, with the complete abandonment of those Copper Age sites situated at terraces in favour of EBA lake-side locations.

territorial sense (cf. Ialongo 2003, 641).[187] However, it seems premature to link a change in settlement patterns to a break away from Copper Age subsistence patterns. At present, there is a lack of well-published excavations of EBA contexts with structural remains in the FUCINO BASIN, as well as a general lack of direct evidence for EBA subsistence strategies (cf. Castiglioni & Rottoli 2003; De Grossi Mazzorin & Minniti 2003) that can be used to substantiate this scenario (§7.4).[188] Nonetheless, Copper Age sites generally tend to be regarded as year-round settlements with a subsistence strategy based on mixed farming, fishing and hunting.[189]

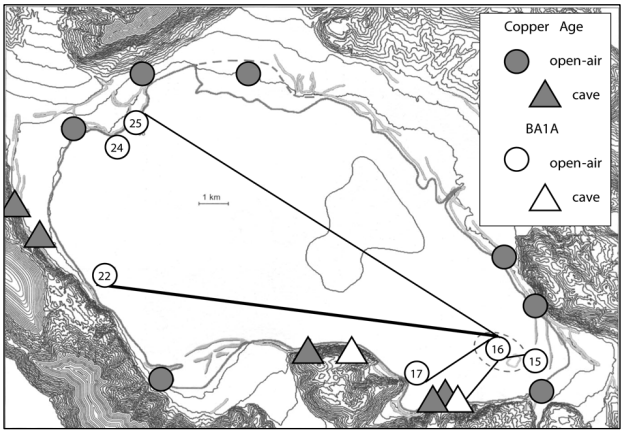

Figure 7.2: map (adapted from Ialongo 2007) showing the distributions of open-air and cave sites dated to the Copper Age and EBA1 [subphase BA1A] in the FUCINO BASIN, with ceramic connections [nos. refer to Appendix 4].

Patterns of Copper Age-EBA1 discontinuity can be specified by taking a closer look at settlement dynamics in the FUCINO BASIN (Figure 7.2). In the overall context of a pattern of site discontinuity in the FUCINO BASIN, precisely those Copper Age open-air sites situated closest to the lake-side are persistent places (ORTUCCHIO-STRADA 28 [#16]; ORTUCCHIO-LA MADONELLA 1 [#15]). In particular, reclassification of ceramics from the largest, excavated assemblage in the micro-region (ORTUCCHIO-STRADA 28 [#16]) has highlighted that its trajectory extended into EBA1, i.e. subphase BA1A (Ialongo 2007).[190] The wider significance of this type site of the so-called 'Ortucchio facies', which extended into southern Lazio (§7.1.4), is not solely based on the relatively large size of its assemblage, the latter probably one of the main reasons to select it for excavation. Shared vessel types connect ORTUCCHIO-STRADA 28 to assemblages of limited size (ORTUCCHIO-LA MADONELLA 1 [#15]; ORTUCCHIO-BALZONE 1 [#17]; LUCO-STRADA 45 [#22]; AVEZZANO-STRADA 7 [#25]) in subphase BA1A and the same assemblages are not connected to other open-air sites than the type site itself (Figure 7.2). This corroborates that ORTUCCHIO-STRADA 28 [#16] was the main open-air site in the micro-region[191] and suggests that there is no reason to postulate more than one settled community in the FUCINO BASIN, with the limited assemblages as sites of special-purpose activity connected to the main site.[192]

In terms of connectivity in subphase BA1B (Figure 7.3), ORTUCCHIO-STRADA 28 [#16] occupied a less 'central' position than before (Figure 7.2). This is consistent with the limited number of vessel types attributed to this particular phase from its extensive surface assemblage, whereas the trajectory of the excavated assemblage that includes structural remains (putatively houses; §7.3) did not extend beyond subphase BA1A. Although ORTUCCHIO-STRADA 28 [#16] is one of the few persistent places in subphase BA1B, it lacks the one vessel type that connects the three other open-air sites

[187] In the final publication of his synthesis Ialongo (2007, 320) stresses that the Copper Age sites are invariably of short duration and that their location should therefore be interpreted in terms of a high degree of residential mobility.
[188] However, the extension of the date range of the excavated Copper Age assemblage of ORTUCCHIO-STRADA 28 [#16] into EBA1 (Ialongo 2007) suggests that the faunal sample should be interpreted accordingly (§7.4).
[189] Cf. D'Ercole 2000, 121, although concern has been expressed about the absence of direct evidence for agricultural produce in the form of cereal remains at both the excavated Copper Age sites (ORTUCCHIO-STRADA 28 [#16]; LE COSTE) in the FUCINO BASIN (Radi 2003, 247).
[190] This reclassification helps to overcome the lack of chronological resolution of the 'Ortucchio facies', due to a lack of radiocarbon dates (Skeates 1996). Ialongo's classification (2007) of ceramics in the assemblage as partly EBA1 in date [subphase BA1A] resolves the highly problematic nature of the single radiocarbon date [4070±180 BP] from ORTUCCHIO-STRADA 28, i.e. a wide measurement error and its ambiguous status as a bulk sample of charcoal collected in different areas of the site (§3.3).
[191] Recently, a small number of ceramic fragments with 'Bell Beaker' type decorations have come to light in a new part of the excavations at the Copper Age open-air site of LE COSTE, on a terrace overlooking the plain of ORTUCCHIO. These have been interpreted as an extension of the late Copper Age trajectory of LE COSTE, i.e. persistent use resulting in a partial overlap with the trajectory of ORTUCCHIO-STRADA 28 in the final Copper Age and/or EBA1 [subphase BA1A] (Radi 2003, 244 [fig. 3b], 245-246, 249-250). However, Ialongo (2007, 133-135) seems to have rejected an EBA1 date for the decorated ceramics.
[192] In this respect, the 'double' link between ORTUCCHIO-STRADA 28 [#16] and LUCO-STRADA 45 [#22] (Figure 7.2) also concerns the latter's full assemblage consisting of a single fragment, a vessel type-handle combination (Ialongo 2007, 158 [tipo 27A], 167 [tipo 48, i.e. handle]).

(Figure 7.3: VENERE-RESTINA [#14]; AVEZZANO-LE MOLE 3 [#23]; AVEZZANO-STRADA 6 [#24]).[193] Overall, the spatial distribution of EBA1 open-air sites is fairly similar in both phases, with concentrations to the northwest and southeast of the lake (Figure 7.3) and less dispersed than Copper Age sites (Figure 7.2). Taken together, the Copper Age and EBA1 open-air sites [#23-25] in the area of AVEZZANO, to the northwest of the FUCINO LAKE, indicate a shifting but persistent presence, perhaps a second settled EBA1 community, parallel to one on the opposite side of the lake in the area of ORTUCCHIO [#14-17]. In that case, ceramic connectivity (Figures 7.2 & 7.3) would not refer so much to special-purpose activity starting from a single settlement (see above), as to social interaction between two separate communities. However, this scenario is inconsistent with the underrepresentation of BA1B vessel types at ORTUCCHIO-STRADA 28 [#16].

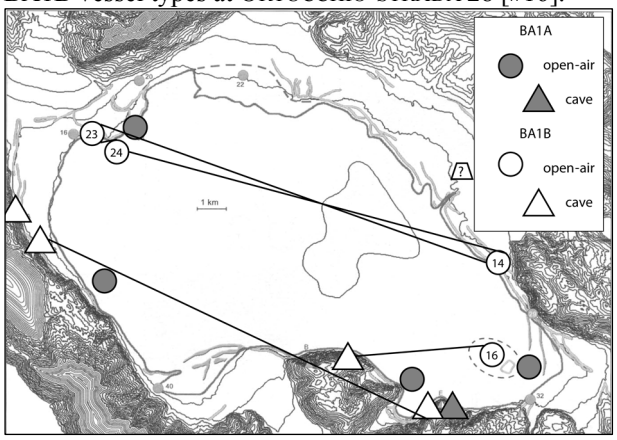

Figure 7.3: map (adapted from Ialongo 2007) showing the distributions of open-air and cave sites dated to subphases BA1A and BA1B in the FUCINO BASIN, with ceramic connections [nos. refer to Appendix 4].

One way to test the scenario of the presence of one or two EBA1 communities in the FUCINO BASIN is a comparison with contemporary ritual practices, i.e. cave use and metalwork deposition. The generic provenance of the 'horizon II' axe (§4.2.2) places it in the area (PESCINA) through which the intermontane GIOVENCO stream flowed into the closed lake basin, immediately to the north of VENERE-RESTINA [#14] (Figure 7.3). The wholesale absence of Copper Age and EBA1 sites to the northeast of the FUCINO LAKE (Figures 7.2 & 7.3) highlights the absence of an immediate prior context for this axe deposition and arguably corroborates its potential connection with a natural place (§4.2.4), perhaps the stream itself or marshes. It can be argued that it was placed between postulated EBA1 communities to the northwest and to the southeast of the lake (see above), at the same time, a likely point of entry for an axe originating from the UPPER PESCARA micro-region, similar to the dagger (FUCINO) without provenance details (§4.4.2; Figure 4.8).

To the west and south of the FUCINO LAKE, caves with traces of EBA1 use show a complementary distribution with the two clusters of EBA1 open-air sites (Figures 7.2 & 7.3). This distribution would be in line with the scenario of two separate communities at the lake, each using its own caves. Upon closer inspection, the trajectories of most of these caves show a gap that was left undiscussed earlier (§6.1.2; Table 6.2). Caves with BA1A ceramics are underrepresented with respect to noth those with Copper Age ceramics (Figure 7.2) and BA1B ceramics (Figure 7.3). This pattern underscores the scenario that these caves were not used consistently in EBA1, but only occasionally (§6.1.2). The scenario that EBA cave use constituted a separate, arguably ritualised sphere (§6.2) is corroborated by a vessel type that is exclusive to caves and connects the EBA1 burial in GROTTA DI MONTE SALVIANO (§5.1.2), to the west of the lake, to renewed use of GROTTA MARITZA, to the southeast.[194] In addition, only one open-air site (ORTUCCHIO-STRADA 28 [#16]) shows ceramic connectivity to caves, i.e. GROTTA DI ORTUCCHIO (Figure 7.2) and GROTTA LA CAVA (Figure 7.3). Because of the occasional character of cave use and the overall lack of connectivity between caves and open-air sites, this comparison cannot shed light on the issue of the scale of EBA1 groups involved in cave use.

To sum up, the question of the presence of one or several EBA1 communities in the FUCINO BASIN remains unresolved. The distinctive, yet complementary patterns of the distribution of EBA1 open-air assemblages and their connectivity in subphases BA1A and BA1B (Figures 7.2 & 7.3) could indicate that making a diachronic distinction between these two subphases is invalid. The issue of diachronic resolution of subphases will be explored in the light of regional patterns of connectivity

[193] The absence of this particular vessel type (Ialongo 2007, 150 [tipo 1]) from the largest, excavated assemblage (ORTUCCHIO-STRADA 28 [#16]) is striking, as it concerns the only type of an EBA larger vessel in Ialongo's typochronology.
[194] Perhaps it is significant that the cave with the articulated burial (GROTTA DI MONTE SALVIANO) mimicks the location of the contemporary axe deposition (PESCINA) on the opposite lake-side of the lake (Figure 7.3), with respect to the clusters of open-air sites at AVEZZANO and ORTUCCHIO, respectively.

(§7.2). It is significant, for instance, that ceramic connectivity links all four of the open-air sites in the FUCINO BASIN in subphase BA1B (Figure 7.3) to the new place (NAVELLI [#9]) in the emergent ATERNO-TIRINO cluster (see above), a potential 'stopping point' in the journey of the PESCINA axe from the UPPER PESCARA micro-region (§7.2).

EBA2

Site distributions in the FUCINO BASIN show a significant network change in EBA2 (Figure 7.4). In particular, a cluster of open-air sites emerged to the south of the lake in the area of TRASACCO [#18-21], as well as an isolated open-air site to the north (COLLE FELICETTA [#13]). The TRASACCO cluster lies at the heart of EBA2 connectivity in the FUCINO BASIN (Figure 7.4) despite the persistence of one open-air site in each of the two EBA1 clusters (Figure 7.3). Whereas the persistent place of AVEZZANO-STRADA 6 [#24] shows EBA2 connectivity with the TRASACCO sites, the latter are linked only indirectly to ORTUCCHIO-STRADA 28 [#16], through 'shared' cave use at GROTTA DI CICCIO FELICE and GROTTA MARITZA. The connection of ORTUCCHIO-STRADA 28 with caves is even stronger than before (see above), connecting to all caves with EBA2 evidence (Figure 7.4). It highlights the possibility that ceramics deposition at this persistent open-air site (or ancestral settlement), after the 'gap' in its trajectory in subphase BA1B, was part of the same, ritual sphere as 'persistent' cave use (§6.2), not necessarily related to a single settled community. The 'cave-like' character of the EBA2 assemblage of ORTUCCHIO-STRADA 28 is underscored by the selection of vessel types. By far the majority of vessel types in the assemblage had prior to Ialongo's classification (2007) been exclusive to caves and the lake-side cult place at LAGO DI MEZZANO (§7.1.3), interpreted as ritual in Cocchi Genick's classification (1998).[195]

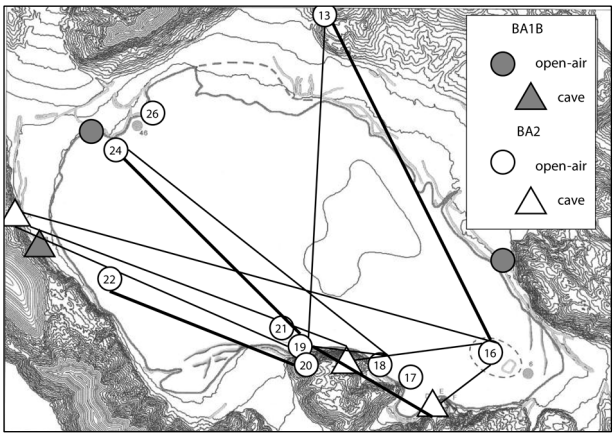

Figure 7.4: map (adapted from Ialongo 2007) showing the distributions of open-air and cave sites dated to subphases BA1B and BA2 in the FUCINO BASIN, with ceramic connections [nos. refer to Appendix 4].

The relatively good state of preservation of the vessels at ORTUCCHIO-STRADA 28 [#16] is another indication of its ritual character (§7.3). Moreover, the series of vessel types includes a relatively complete, decorated miniature of vessel types otherwise only represented at TRASACCO 2 [#20] and LUCO-STRADA 45 [#22] to the southwest of the FUCINO LAKE.[196] A further indirect link between the TRASACCO cluster and ORTUCCHIO-STRADA 28 implicates the new place with a limited surface assemblage (COLLE FELICETTA [#13]) on a hill to the north of the FUCINO LAKE (Figure 7.4). Whereas its connectivity with ORTUCCHIO-STRADA 28 concerns one of the 'ritual' vessel types, with a handle in common with NAVELLI [#9] in the ATERNO-TIRINO cluster (see above),[197] the link between COLLE FELICETTA and TRASACCO 1 [#19] is a vessel type that is exclusive to these places (Ialongo 2007, 154 [tipo 16]). As such, the limited assemblage of COLLE FELICETTA [#13] could represent an act of place-making starting from the TRASACCO cluster and the ATERNO-TIRINO cluster (§7.2), and does not

[195] Ialongo [I] 2007, 151 [tipo 5 = larger part of vessel] = Cocchi Genick [CG] 1998 [tipo 69, VALLE FELICI, ROMITA DI ASCIANO]; I 2007, 151 [tipo 9] = CG 1998 [tipo 23A & 23B, GROTTA DEL BEATO BENINCASA, BELVERDE-"GROTTE"]; I 2007, 153 [tipo 11, i.e. larger part of vessel] = CG 1998 [tipo 29, CANDALLA-RIPARO DELLE FELCI, LAGO DI MEZZANO] & I 2007, 167 [tipo 50, i.e. handle] = CG 1998 [tipo 168A, LAGO DI MEZZANO]; I 2007, 154 [tipo 17A] & 171 [tipo 60, i.e. decoration], without parallels (i.e. unicum); I 2007 [tipo 27B, i.e. large fragment] = CG 1998 [tipo 46, TANACCIA DI BRISIGHELLA, CAMPO DEL SORGO, ROMITA DI ASCIANO] & I 2007, 160 [tipo 29A, GROTTA LA CAVA (complete miniature), GROTTA DI CICCIO FELICE] & I 2007, 167 [tipo 54A, i.e. handle] = CG 1998 [tipo 177, PUNTA DEGLI STRETTI; GROTTA DEL BEATO BENINCASA, VALLONE, NAVELLI]; I 2007, 165 [tipo 42B], i.e. larger part of (decorated) 'miniature' version of [tipo 42A, i.e. TRASACCO 2; LUCO-STRADA 45] = CG 1998 [unicum 1 'dopo tipo 128', LAGO DI MEZZANO]; I 2007, 169 [tipo 56, i.e. handle] = CG 1998 [tipo 172B, LAGO DI MEZZANO, GROTTA SANT'ANGELO].

[196] Following subtypes in Ialongo's classification (2007), this connection has not been incorporated in Figure 7.4.

[197] Ialongo [I] 2007 [tipo 27B] = Cocchi Genick [CG] 1998 [tipo 46, TANACCIA DI BRISIGHELLA, CAMPO DEL SORGO, ROMITA DI ASCIANO] & I 2007, 167 [tipo 54A, i.e. handle] = CG 1998 [tipo 177, PUNTA DEGLI STRETTI; GROTTA DEL BEATO BENINCASA, VALLONE, NAVELLI].

necessarily refer to a settlement (*contra* Ialongo 2007, 145). Another indication for the interpretation of COLLE FELICETTA as an act of deposition is its atypical site location in the micro-region (Figure 7.4), in coincidence with the outlet of the peculiar natural feature of the CELANO gorge, originating in the mountains that delimit the FUCINO BASIN to the north.

Overall, the emergence of a new cluster of open-air sites (TRASACCO-S. RUFINO 1 [#18]; TRASACCO 1 [#19]; TRASACCO 2 [#20]; TRASACCO-IL MULINO [#21]), well-connected to all of the other open-air sites as well as two of the caves (Figure 7.4), singles the area of TRASACCO out as the most likely, new location of an EBA2 settled community in the FUCINO BASIN. Ialongo's classification (2007), including unpublished and redated ceramics from the excavation, has made TRASACCO 1 [#19] the largest EBA2 assemblage in the micro-region and thereby adds a cultural context to the previously 'anomalous' EBA radiocarbon date (§3.3) on a wooden post from one of the pits.[198] The consistency of the EBA2 assemblage suggests that other excavated, but undated structural remains (i.e. pits and posts) could add up to an EBA2 settlement.[199] The absence of consistent links between sites in the TRASACCO cluster itself (Figure 7.4) could highlight differentiation in site function, with TRASACCO 1 [#19] as the settlement proper. In this respect, the limited assemblage of TRASACCO-IL MULINO [#21] seems to have been a special-purpose site (i.e. a fishing spot) because of the presence of so-called "fishing-net weights" and its location (Figure 7.4), closest to (or within) the reconstructed lake-levels (cf. Ialongo 2007, 184, 320).

A closer look at the ceramics in the TRASACCO 1 [#19] assemblage shows that it includes both 'local' vessel types that are most frequent in, or exclusive to the FUCINO BASIN, and types that elsewhere in Central Italy are exclusive to cave and lake-side assemblages.[200] This constrasts with the predominance of supra-regional, 'non-local' vessel types that lends ORTUCCHIO-STRADA 28 [#16] its ritual character (see above). The absence of connectivity between these two largest EBA2 assemblages (Figure 7.4) underscores the postulated differentiation in site function, with the persistent place of ORTUCCHIO-STRADA 28 used for its ancestral connotations as a zone of ceramics deposition, similar to cave use (Chapter 6), and TRASACCO 1 as the main, new settlement. This interpretation of TRASACCO 1 [#16] is corroborated by the presence of structural remains (§7.3), as well as the local character of the complete larger (or storage) vessel.[201] Nonetheless, the relatively complete state of EBA2 vessels deserves attention, not necessarily an indication of ritual practice, given the other characteristics of the assemblage (see above). An alternative interpretation for this peculiarity is that the assemblage constitutes an abandonment context of a single-phase, EBA2 settlement.

To sum up, in terms of trajectories of EBA community formation in the FUCINO BASIN, at present, there is only convincing evidence for the existence of a single settled community that shifted location from ORTUCCHIO to TRASACCO between EBA1 and EBA2 (Table 7.3). This reconstruction is mainly based on the impression of ceramic connectivity in the micro-region (see above), but a research bias towards these excavated open-air sites with the largest assemblages and structural remains cannot be excluded. In particular, the situation in the area of AVEZZANO, to the northwest of the lake, is not as well-researched as the environs of TRASACCO and ORTUCCHIO (Figures 7.2, 7.3 & 7.4). Nonetheless, the postulated trajectory does seem to find corroboration in its good fit with the trajectory of the ATERNO-TIRINO cluster. To reiterate, the starting-point of this cluster (NAVELLI [#9]) is connected to all contemporary open-air sites in the FUCINO BASIN (Table 7.3). The involvement of the FUCINO community in the emergence of the ATERNO-TIRINO cluster could partly explain the relatively low

[198] Cf. Ialongo 2007, 84 [published finds], 84-88 [unpublished finds], 92 [surface finds]. The date [3640±90 BP; 2277-1745 cal.BC] on wood (Table 3.7) has a calibrated range that covers the whole of EBA1 and EBA2 (Radi 1995; Skeates & Whitehouse 1995/1996), but in the absence of ceramics an EBA1 date seems unlikely.

[199] Unfortunately, the excavation has not been published in detail yet. In particular, the lack of a site plan and stratigraphical understanding is regrettable.

[200] Local: I 2007, 154 [tipo 15, TRASACCO 1 & GROTTA MARITZA]; I 2007, 154 [tipo 16, TRASACCO 1 & COLLE FELICETTA] & 171 [tipo 63 (decoration), TRASACCO 1 & GROTTA MARITZA] = CG 1998 [tipo 202 (subphases BA1B-BA2, GROTTA PRATO, CANDALLA-RIPARO DELL'AMBRA]; I 2007, 163 [tipo 40, TRASACCO 1 (complete large vessel), TRASACCO-S. RUFINO 1, AVEZZANO-STRADA 8]; Supra-regional: Ialongo [I] 2007, 153 [tipo 12, TRASACCO 1 & GROTTA DI CICCIO FELICE] = Cocchi Genick [CG] 1998 [tipo 40 (subphase BA1B), LATRUCCIA 1, CANDALLA-RIPARO DELL'AMBRA & RIPARO DELLE FELCI]; I 2007, 154 [tipo 14] = CG 1998 [unicum 'dopo tipo 58', GROTTA DEL BEATO BENINCASA]; I 2007, 166 [tipo 43, TRASACCO 1 (larger part of vessel), AVEZZANO-STRADA 6] = CG 1998 [tipo 138, GROTTA PRATO (TORRE CROGNOLA included; TANACCIA DI BRISIGHELLA excluded by Ialongo)]; I 2007 [tipo 45] = CG 1998 [tipo 139, GROTTA DEL FARNETO; GROTTA DEL BEATO BENINCASA, RAGNATORO & tipo 140, GROTTA DEL BEATO BENINCASA, LAGO DI MEZZANO].

[201] Ialongo 2007, 163 [tipo 40, TRASACCO 1 (complete large vessel), TRASACCO-S. RUFINO 1, AVEZZANO-STRADA 8]. On the other hand, we should recall the two larger (storage) vessels from pits at GROTTA SANT'ANGELO and GROTTA DEI PICCIONI that were interpreted as a ritual feature (§6.2.1).

archaeological visibility and limited scope of BA1B assemblages in the FUCINO BASIN, including the 'gap' at ORTUCCHIO-STRADA 28 (see above). The postulated trajectory would have distributed the respective community over a larger area, which would have afforded a wider network change related to metalwork exchange (§7.2).

	Fucino basin	Aterno-Tirino cluster
final Copper Age-EBA1 [subphase BA1A]	settled community focused on ORTUCCHIO (Figure 7.2)	[Grotta a Male (§6.1) and Assergi cemetery (§5.1) abandoned]
EBA1 [subphase BA1B]	abandonment of ORTUCCHIO-STRADA 28 (Figure 7.3)	place-making at NAVELLI, linked to all contemporary Fucino sites
EBA2	settled community focused on TRASACCO (Figure 7.4)	Aterno-Tirino cluster, linked to postulated cult places (ORTUCCHIO-STRADA 28, COLLE FELICETTA)

Table 7.3: postulated trajectories of community formation in intermontane Abruzzo.

Connectivity between these intermontane micro-regions in EBA2 (Table 7.3) took shape as acts of deposition at cult places in the FUCINO BASIN (see above), both at open-air sites with a ritual character (ORTUCCHIO-STRADA 28; COLLE FELICETTA) and at caves (GROTTA LA CAVA; GROTTA DI CICCIO FELICE). It suggests that the ATERNO-TIRINO cluster was implicated in ritualised practices with an intercommunal character taking place in the FUCINO BASIN itself, arguably social interaction with the settled community at TRASACCO. On a supra-regional scale, the isolated ceramic fragment ORTUCCHIO-BALZONE 1 [#17] attributed to the EBA2 "Palma di Campania" facies (§3.2.2; §3.4) highlights the central role of the FUCINO BASIN in cross-APENNINE connectivity (Ialongo 2007, 154 [tipo 18], 181), as do supra-regional ceramic connections, predominantly to caves, in Central Italy (see above). Given its well-connectedness, the absence of EBA2 metalwork from the basin itself is striking. In all likelihood, the 'horizon III-IV' axe deposition (ALBE-MAGLIANO DEI MARSI) in the UPPER IMELE-SALTO area (§4.2.2), immediately to the northwest of the basin, is an indication of connectivity of the FUCINO community with the intermontane region of Umbria, the postulated origin of the axe (§4.4.3).

The province of Rieti

Different from intermontane Abruzzo, there is a considerable gap in our knowledge of the spatial distribution of EBA open-air sites in the Rieti (RI) province (Figure 7.1; Table 7.2). Closest to the FUCINO BASIN, circumstantial evidence for EBA open-air sites derives from rescue projects related to the construction of a highway in the UPPER SALTO valley. Following an earlier occasional find (S. MARIA DI BORGOROSE [#27]), several limited EBA-MBA assemblages have been reported from the BORGOROSE plain. Based on its strategic location in cross-APENNINE and intermontane connectivity, these limited assemblages have been interpreted as the remains of temporary (seasonal?) occupation, rather than settled communities (Alvino 2007, 92). If partially EBA2 in date, it would situate the axe deposition (ALBE-MAGLIANO DEI MARSI) between a temporary community in the BORGOROSE plain and the settled community in the FUCINO BASIN (see above). At present, EBA open-air sites have not been reported from the remainder of the intermontane SALTO valley, nor the VELINO valley, which represents a gap in archaeological records that stretches to the RIETI BASIN (Figure 7.1). Only a few assemblages (MONTISOLA [#28]; CASA FONTE GIOVANNONE [#29]) are known from the RIETI BASIN itself (Table 7.2), consisting of limited amounts of ceramics that have been dated to EBA only generically.

This contrasts with the presence of an EBA1 funerary context (CAMPORE) (§5.1.2) and the evidence for EBA metalwork deposition (RIETI; MONTECCHIO) (§4.2.2). Although an extensive field survey did take place in the catchment of the RIETI BASIN in the late 1980s, explicitly focused on protohistoric settlement patterns (Carancini et al. 1986, 1990), this has not contributed to an understanding of Copper Age-EBA settlement patterns in this micro-region. This could be explained by low archaeological visibility of open-air sites in a geologically dynamic environment (cf. Calderini et al. 1998). For instance, the assemblage of MONTISOLA [#28] was discovered in a geological test-pit, but both radiocarbon dates of the archaeological layer have a wide margin of error and refer to an EBA-MBA date range (§3.3). In addition, reconstructed lake-levels in the RIETI BASIN had been based on an outdated environmental reconstruction that envisioned larger lake bodies, rather than smaller stretches of lakes with fluctuating levels along dynamic river courses, in association with marshes. This is problematic because the survey strategy entailed a strong focus on particular elevations connected with

protohistoric lake-levels. On the other hand, Coccia & Mattingly (1992, 16-17) and Ialongo (2007, 330) have criticised such a selective focus in the survey strategy adopted.[202] Incidentally, the methodological flaw of the strategy to focus on reconstructed lake-sides could have been deduced from known chance finds (MONTECCHIO; CAMPORE) (§5.1), situated on higher grounds than the putative protohistoric lake-levels (cf. Segre 1990). Overall, there is a possibility that further EBA open-air sites lie buried under sediments in the RIETI BASIN or can be found at higher elevations than the putative lake-levels.

Finally, systematic field surveys have started to focus on the pre-APENNINE foothills and smaller valleys on the TIBER left bank, in an attempt to fill the gaps in archaeological records between the intermontane region and the well-researched region of northern Lazio (§7.1.3). Only one such project has so far yielded a single, limited EBA2 open-air assemblage (PROGETTO GALANTINA-SITO 68 [#30]) in one of these smaller tributaries of the TIBER, flowing from the SABINE MOUNTAINS. In this respect, one of the questions to be addressed in the diachronic overview of settlement patterns and regional connectivity in Abruzzo and Lazio as whole (§7.2), is whether several or many more EBA open-air sites should be expected in the province of Rieti.

7.1.3 Northern Lazio

Systematic and unsystematic field surveys in northern Lazio (also known as Southern Etruria) have yielded a considerable number of EBA open-air sites (Figure 7.1), as a corollary of the focus on this region in the study of later Bronze Age-Early Iron Age trajectories of early state formation (§1.2). Many of these assemblages have only been reported as generically EBA in date in site lists (Tables 7.4 & 7.5) and/or concern very limited amounts of (if not isolated) ceramic fragments (Appendix 4 [#31-134]). In general, EBA1 sites are scarce, but the number of EBA2 sites is also relatively low, given the higher archaeological visibility of EBA2 vessel types (§3.2.1). Unfortunately, excavation of EBA open-air sites does not seem to have had much priority, given the research bias towards later Bronze Age settlements. As a consequence, EBA settlement patterns and network changes tend to be addressed in general terms. Here I will use the spatial and chronological patterns established earlier for metalwork deposition (Chapter 4), burial (Chapter 5) and cave use (Chapter 6) as a frame of reference for more specific reconstructions of EBA settlement patterns in northern Lazio. These will be discussed in two parts, starting with northernmost Lazio (Figure 7.1 [#34-75]; Table 7.4) and then 'southern' northern Lazio (Figure 7.1 [#76-134]; Table 7.5).

Northernmost Lazio

The type sites of the large EBA cultural group coinciding with 'coastal' Lazio (GRUPPO DI TORRE CROGNOLA-LAGO DI MEZZANO) are both open-air sites and both situated in the far north of Lazio (§3.2.2). As the two largest assemblages, dated to EBA1 (TORRE CROGNOLA) and EBA2 (LAGO DI MEZZANO), respectively, these include the majority of vessel types found in the region as a whole. On the basis of their location near a cultural boundary and their position in 'typo-networks' (§3.2), it was suggested that the assemblages of TORRE CROGNOLA [#61] and LAGO DI MEZZANO [#34] should not necessarily be regarded as the remains of settlements, but foremost as cross-cultural meeting-places. Both these sites were discussed already in terms of boundary work in the context of metalwork exchange and deposition (§4.4). Here the atypical character of these type sites will be substantiated in a diachronic overview of the spatial distributions of open-air sites in the micro-regional context of northernmost Lazio and the regional context of northern Lazio.

Copper Age-EBA1

The number of Copper Age open-air sites known from northernmost Lazio is low (Table 7.4), especially in comparison with the high incidence of Copper Age cemeteries in the border zone between Tuscany and Lazio (§5.1.3; Table 5.3). This bias in archaeological records corroborates the scenario that the concentration of cemeteries should be seen in the light of (supra)regional interaction (§5.2), arguably providing an intercommunal context for metalwork exchange (§4.4.1). The overall lack of evidence for settled communities persisted in EBA1, given the equally low number of assemblages from open-air sites dated to BA1A and BA1B (Table 7.4). At present, the large surface assemblage from the type site (TORRE CROGNOLA) is unique and unrepresentative (see below). In particular, there is a significant lack of context in northernmost Lazio for TORRE CROGNOLA [#61] in subphase BA1A,

[202] Nonetheless, Ialongo (2007, 330, 332 [fig. 240]) takes the situation in the RIETI BASIN at face value, in his comparison with the FUCINO BASIN, and suggests a scenario of persistent places since EBA, without reference to the overall lack of knowledge.

except for two cult places, GROTTA DELLE SETTECANNELLE (§6.1.3) and FOSSO CONICCHIO (§5.1.3), both abandoned in subphase BA1B.

	Copper Age	EBA1	generically EBA	EBA2
middle Tiber valley (VT)	-	-	-	[#31] Monticello
Lago di Bolsena (VT)	-	-	-	[#32] Ragnatoro [#33] Monte Senano (sub)
upper Olpeta valley, west of Lago di Bolsena (VT)	-	-	[#35] Olpeta [#36] Scoponeto 1 & 2	[#34] Lago di Mezzano [#37] Vallone [#38] Poggi del Mulino [#39] Monte Saliette
middle Fiora valley-Selva di Lamone-lower Olpeta valley (VT)	[#56] La Comunella [#53] Rovine di Castro? [#51] Crostoletto di Lamone [#49] Pianizza [#50] Poggio Marmare? [#42] Roccoia [#43] Mandria Buona [#48] Prato Pianacquale	[#52] Pianetti [#42] Roccoia [#43] Mandria Buona	[#57] Valle del Bovo? [#53] Rovine di Castro? [#50] Poggio Marmare?	[#56] La Comunella [#55] Le Vignacce [#54] Campo della Battaglia [#51] Crostoletto di Lamone [#42] Roccoia [#43] Mandria Buona? [#44] Murcia Bianca [#45] Prato di Frabulino [#46] Campo della Villa [#47] Valderico [#48] Prato Pianacquale [#40] Buche Bietole? [#41] Palombara II
lower Fiora valley (VT)	[#63] Monte Rozzi [#61] Torre Crognola [#68] Pontecchio	[#61] Torre Crognola [#68] Pontecchio?	[#59] Riminino? [#60] Monte dell'Oro [#67] Sorgente del Tufo? [#64] Breccietello? [#65] Cancellone? [#66] La Piscina	[#63] Monte Rozzi [#61] Torre Crognola [#68] Pontecchio
between Olpeta and Marta valleys (VT)	[#62] Poggio Olivastro	[#62] Poggio Olivastro? [#72] Piano della Selva	[#70] Casale Saetto [#71] Omo Morto	[#58] Monte di Cellere [#72] Piano della Selva [#69] Casale Carcarello [#73] Castellina di Formiconcino
east of Lago di Vico (VT)	[#74] Casale Barzellotti	[#74] Casale Barzellotti?	[#75] Fosso delle Rote?	-

Table 7.4: overview of (late) Copper Age-EBA open-air sites in northernmost Lazio [nos. refer to Appendix 4 & Figure 7.1].

Unfortunately, TORRE CROGNOLA [#61] as the main EBA1 open-air site presently known in northern Lazio has not been subjected to excavation. Therefore, the interpretation that the EBA1 type site in 'coastal' Lazio was a settlement, is not straightforward, nor can it be used indiscriminately to fill the gap in our understanding of settlement patterns in the region. The assumption that it represents a large settlement, depends on the size and the composition of its assemblage.[203] I would argue that this assumption is contradicted by the character of the ceramics from the (surface) assemblage, in the sense that Cocchi Genick's classification highlights that ceramics from TORRE CROGNOLA are predominated by (smaller) vessel types related to food consumption, which throughout Central Italy have otherwise only been found in cave assemblages (Cocchi Genick 1998, 93-227). At the same time, the assemblage is characterised by a high incidence of decorated ceramics, which is again a characteristic of cave assemblages and uncharacteristic of open-air sites (Cocchi Genick 1998, 228-245). In particular, it includes a wide range of 'Bell Beaker' types of decoration (§3.2.1), only parallelled at the cult place of FOSSO CONICCHIO (§5.1.3).

There is no need to presume a traditional scenario, that 'Bell Beaker' people from elsewhere (i.e. Tuscany) established a settled community in northernmost Lazio, inhabiting prior places (TORRE CROGNOLA [#61]; POGGIO OLIVASTRO [#62]; CASALE BARZELOTTI [#74]) and using prior cemeteries (FONTANILE DI RAIM) (§5.1) of 'local' communities.[204] The alternative scenario engages with the distribution of items of 'Bell Beaker' material culture (i.e. beakers and bracers) in Central Italy. The position of two extensive 'Bell Beaker' assemblages (TORRE CROGNOLA; FOSSO CONICCHIO), situated on the margin of 'Bell Beaker' networks and in a well-established nodal area (§3.2; §4.4.1; §5.2),

[203] The composition of the assemblage (§7.3) and the limited faunal sample (§7.4) will be discussed in more detail below.
[204] *Contra* Fugazzola Delpino & Pellegrini 1998a, 157-160; Fugazzola Delpino & Pellegrini 1999, 147-150.

singles them out as intercommunal meeting-places.[205] The spatial proximity and connection of TORRE CROGNOLA to a cave with an internal and external lake (GROTTA DEL LAGO DI TORRE CROGNOLA), would have added a cosmological dimension to social interaction at this location.[206] The persistence of TORRE CROGNOLA, after the abandonment of the cult place of FOSSO CONICCHIO (§5.1), in subphase BA1B and EBA2 networks will be explored in the diachronic overview of regional connectivity (§7.2). To sum up, TORRE CROGNOLA is not an average EBA1 settlement, if one at all. Moreover, the other EBA1 assemblages, as well as those generically dated to EBA, in northernmost Lazio (Table 7.4) are too limited in scope to be interpreted as EBA1 settlements without further investigation. At present, the possibility that neither in the Copper Age nor in EBA1 a permanently settled community existed in northernmost Lazio cannot be excluded.

EBA2

A relatively high number of EBA2 open-air sites has been reported from northernmost Lazio, with a concentration between the MIDDLE FIORA valley and LAGO DI BOLSENA (Table 7.4). Following the general pattern of EBA1-EBA2 discontinuity (§3.1), the majority of these open-air sites constituted new places.[207] The establishment of a settled community in EBA2 has been charted in environmental reconstructions as a signature of human impact (i.e. land reclamation, deforestation and/or agriculture), dated generically to the EBA-MBA transition, at two crater lakes (LAGO DI MEZZANO; LAGACCIONE) in the UPPER OLPETA valley (§3.4; cf. Magri 1999; Sadori et al. 2004).[208] The problem in recognising EBA2 settlements is that the majority of the open-air sites are characterised by limited surface assemblages, with some more substantial exceptions (see below). Nonetheless, the overall increase in open-air sites does highlight a significant network change in EBA2, in coincidence with the extension of the distribution of hoards (ACQUAPENDENTE; CERVARA ALFINA) and ingots (CARTALANA) into northernmost Lazio (§4.2.3; §4.4.3). At the same time LAGO DI MEZZANO, the EBA2 type site of the reconstructed cultural group of 'coastal' Lazio (§3.2.2), was not only established as a depositional zone for metalwork, given its large ceramic assemblage that consists predominantly of complete vessels.

The assemblage of LAGO DI MEZZANO [#34] has been regarded as the remains of a lake-side settlement, similar to those in the circum-Alpine region including northern Italy (cf. Carancini 1986; Cardarelli 1992; Guidi & Bellintani 1996; Aspes 1997; Schlichtherle 1997; Marzatico 2004). Two further open-air sites (RAGNATORO [#32]; MONTE SENANO [#33]) at LAGO DI BOLSENA have also been interpreted as settlements. Several elements contradict this interpretation. Radiocarbon dates available for structural remains (i.e. wooden posts) at these locations rule out the presence of EBA structures.[209] Moreover, lake-side place-making should be seen in the light of the EBA2 climatic 'dry event' (§3.4). This would have lowered lake-levels in the closed basins of craters considerably, making lake-sides available for human activity. At LAGO DI BOLSENA it exposed previously submerged, geothermal outlets of gases and water in a remnant volcanic environment (cf. Fioravanti 2002). The location of the EBA2 lake-side assemblages coincided with such outlets, exposed in the northwestern part of the large crater. At MONTE SENANO [#33] a series of outlets was marked by a large, elliptical stone cairn (c. 50m x 30m).[210] As one of the few instances of monumentality on the surface in Central Italy, the cairn would probably have served as a focus for deposition and the associated assemblage should be interpreted accordingly. The cairn frames a peculiar subsurface element in the physical landscape and fits a wider cosmological concern with the subsurface (Chapter 8).

---

[205] Cf. Cocchi Genick 1998, 331 [tab. 5] for EBA1 ceramic connectivity between Tuscany and northernmost Lazio (§3.2.1).

[206] The isolated finds of a disarticulated skull and a complete cup in the context of GROTTA DEL LAGO DI TORRE CROGNOLA have both been redated to the Neolithic (Cocchi Genick 1998, 18), consituting an ancestral context for the open-air site that 'continued' the trajectory of cave use from the Copper Age onwards.

[207] Both EBA1 and EBA2 ceramics have only been reported from ROCCOIA [#42]; MANDRIA BUONA [#43]; TORRE CROGNOLA [#61]; PIANO DELLA SELVA [#72] (Table 7.4; Appendix 4).

[208] It is unclear to what extent the deforestation signature found at LAGO DI MEZZANO was connected either to human impact or the EBA2 climatic 'dry event' (Sadori et al. 2004 use the term "aridity crisis"). Arguably, it would be wrong to attribute the signature of agriculture solely to the closed basin and putative EBA2 settlement of LAGO DI MEZZANO (Sadori et al. 2004), as the theatre-like shape of the small crater opens up to (and therefore served as a catchment area of pollen related to agricultural activity in) the UPPER OLPETA valley, given the similar signature at LAGACCIONE without archaeological evidence (Magri 1999).

[209] The series of radiocarbon dates obtained from wooden posts at LAGO DI MEZZANO starts in MBA1 (§3.3), those from RAGNATORO have yielded medieval dates (Tamburini 1995, 217 [fig. 3A]).

[210] Given its size, the construction of this cairn probably constituted a project in the longer term, arguably starting in coincidence with the EBA2 climatic 'dry event' that would have exposed the outlets. For similar cairns at other outlets at LAGO DI BOLSENA a slightly later date is more likely, given associations with MBA ceramics, although Copper Age remains have been reported from the cairn at GRAN CARRO (Tamburini 2006).

Another element that raises doubts about the interpretation of RAGNATORO, MONTE SENANO and LAGO DI MEZZANO as settlements, is that their assemblages are characterised by vessel types shared between cave and lake-side assemblages (Cocchi Genick 1998, 296 [fig. 77], 306 [tab. 3], 392). Among these, the new place at the smaller lake (LAGO DI MEZZANO), situated immediately to the west of the BOLSENA crater, stands out for the large number of vessel types that are exclusive to this particular assemblage, including vessel types in larger dimensions than usual and excluding simpler vessel types (Cocchi Genick 1998, 293 [fig. 76], 306 [tab. 3] & passim).[211] Out of forty-two vessel types in the assemblage, 50% are exclusive to LAGO DI MEZZANO in the context of Central Italy as a whole, whereas many of the remaining vessel types have not been found in Lazio, apart from caves and funerary contexts elsewhere in Central Italy (Cocchi Genick 1998, 289-292). Similarly uncharacteristic of settlements is the presence of metalwork (§4.2.3). Its interpretation as a series of acts of metalwork deposition can be transferred to the peculiar ceramic assemblage, predominated by complete vessels. In this respect, the rare silver ornament included in a ceramic vessel constitutes a 'cross-over' (§4.2.3; Appendix 1 [#27.5]). Both metalwork and ceramics deposition at LAGO DI MEZZANO was focused on the same zone ('area M1') in EBA2, the place where a small stream inside the basin flowed into the smaller lake.[212] Due to the lack of resolution between metalwork and ceramic typochronology (§3.1) it is difficult to clarify the trajectory of the depositional zone, but the two earliest pieces of metalwork, i.e. one axe and a dress-pin, both attributed to 'horizon II-III' (§4.2.3), could predate ceramics deposition and refer to acts of deposition at its establishment.[213]

All of these characteristics argue against the interpretation of RAGNATORO, MONTE SENANO and LAGO DI MEZZANO as settlements, in favour of the alternative that these places constituted depositional zones, or lake-side cult places (cf. Cocchi Genick 1998, 292-294).[214] The long-distance, supra-regional affinities of both metalwork (such as the dress-pins; §4.4.3) and ceramics in the LAGO DI MEZZANO assemblage indicate that its emergence was situated at the heart of a network change beyond northernmost Lazio itself. In other words, the major new cult place constituted a significant node in EBA2 connectivity between Tuscany and Lazio, which is corroborated by its geographical location and fits the deeper history of the micro-region as an area of social interaction in the Copper Age and EBA1 (§4.4.1; §4.4.2; §5.2). In this respect, the chronological complementarity of TORRE CROGNOLA, the site with the largest EBA1 assemblage (see above), and LAGO DI MEZZANO suggests that the former was abandoned in favour of the latter,[215] arguably as meeting-places in the context of metalwork exchange. This scenario is consistent with the core in the spatial distribution of EBA2 hoards in southern Tuscany and those in the vicinity of LAGO DI BOLSENA (§4.1; §4.4.3). Another site of ritual practice linked to LAGO DI MEZZANO is the one cave with EBA2 remains (GROTTA DI CARLI) in the MIDDLE FIORA valley (§6.1.3).[216]

All of these sites of ritual practice,[217] but especially LAGO DI MEZZANO, are implicated in the considerable increase of open-air sites in the micro-region (Table 7.4). Although none of the EBA2 open-air sites in northernmost Lazio has been excavated, it seems likely that at least some of these surface assemblages refer to settlements.[218] Their limited character suggests that they refer to single

[211] Apart from the high incidence of decorated ceramics, a series of vessels can be recognised with larger dimensions than vessels of similar types found at other sites (Cocchi Genick 1998, 54). At the other extreme, the only EBA miniature vessel from Lazio belongs to this assemblage (Cocchi Genick 1998, 197).

[212] Place-making at LAGO DI MEZZANO coincided with marked changes in the environment, in particular due to a change in hydrological regimes. In the case of LAGO DI MEZZANO as a closed basin, it entailed in wetter conditions spilling over as a tributary of the OLPETA stream, but the EBA2 'dry event' (§3.4) resulted in a smaller lake and a longer course of a small stream inside the basin, with the depositional zone ('area M1') situated at the point where it entered the lake (Sadori et al. 2004, 6 [fig. 2]).

[213] Cf. the EBA2-MBA1 dress-pin in a second, parallel area of ceramics deposition ('area M2'), established at the lake in MBA1 (§9.1.2).

[214] *Contra* the original interpretation of the ceramics (without structural remains) as a settlement and the metalwork as an area of production at LAGO DI MEZZANO, as illustrated by the title of its final publication: *Vulcano a Mezzano. Insediamento e produzioni artigianali nella media valle del Fiora nell'età del bronzo* (Baffetti et al. 1993; cf. Sadori et al. 2004), with a pun on volcano-Vulcan (i.e. Roman god associated with metalworking and volcanoes).

[215] Cf. Cocchi Genick 1998, 223, 323, who also highlights that TORRE CROGNOLA and LAGO DI MEZZANO do not share vessel types between them.

[216] Actual ceramic connectivity exists between the limited assemblage of GROTTA DI CARLI and the cult place of LAGO DI MEZZANO (§6.1.3; Appendix 3 [#20]).

[217] Perhaps the presence of EBA2-MBA1 rock-cut tombs (PRATO DI FRABULINO; NAVIGLIONE) (§5.1.3) should be added to the series of cult places in the micro-region.

[218] Excavated structural remains at PRATO PIANACQUALE [#48] (a ditch) and MONTE SALIETTE [#39] (post-holes) have been dated to MBA1.

farmsteads at most, in a shifting settlement pattern (cf. Damiani 2001). At the same time, the scenario that limited assemblages refer to a periodic, seasonal form of occupation for the purposes of exchange and intercommunal interaction, cannot be excluded entirely. For instance, the presence at VALLONE [#37] of a typically Northern Italian object (a so-called "tavoletta enigmatica") otherwise rare in Central Italy,[219] could highlight a meeting-place in the immediate vicinity of LAGO DI MEZZANO, rather than a settlement in a strict sense. Overall, the lake-side cult place of LAGO DI MEZZANO would have provided the main focus for EBA2 ceramics deposition in the micro-region (see above). This strengthens the scenario that the remaining open-air sites (Table 7.4) add up to the emergence of settled EBA2 community, rather than further instances of ceramics deposition, in northernmost Lazio. Both the extension of the spatial distribution of hoards of metalwork from southern Tuscany into the region and the strong affinities with Tuscany of ceramics from LAGO DI MEZZANO indicate that the most likely origin of larger part of the newly settled community can be found to the north. Unfortunately, a more detailed comparison with settlement patterns in southern Tuscany was beyond the scope of this thesis.

'Southern' northern Lazio

Despite the considerable number of systematic and unsystematic field surveys that have taken place in Southern Etruria, EBA settlement patterns are still ill-defined in the 'southern' part of northern Lazio. These projects have yielded a relatively high number of open-air sites dated generically to EBA, rather than more specifically to EBA1 and/or EBA2 (Table 7.5; Figure 7.1 [#76-134]). Their chronology is debated because of the extremely limited scope of the surface assemblages in question, as well as the enigma of a regionally specific decorative style of ceramics attributed to EBA. Proponents of the latter argue that the so-called "Luni Tre Erici-Norchia" style has two so-called 'aspects' with diachronic relevance. The earlier aspect ("Luni Tre Erici") entails a 'Bell Beaker' style decoration dated to the final Copper Age-EBA1, whereas the later aspect ("Norchia") has been attributed to EBA2 (Di Gennaro & Pacciarelli 1996; Pacciarelli 2000, 20 [fig. 5C], 21, 93). Cocchi Genick (1998) has rejected an EBA date for most of these assemblages, mainly because of their limited scope.[220] Alternatively, she (2002) has dated the majority to the initial subphase [BM1A] in the Middle Bronze Age sequence, in line with the greater consistency of MBA1 assemblages from the same open-air sites (§9.2.1).

If an EBA date for "Luni Tre Erici-Norchia" style can be rejected, EBA open-air sites are underrepresented in the 'southern' northern Lazio, if not northern Lazio at large (Tables 7.4 & 7.5). If an EBA date can be accpeted, not necessarily all open-air assemblages in question can be interpreted as the remains of settlements, given their extremely limited scope. An occasional find of (the larger part of) a decorated vessel at TORNALE [#85] suggests another scenario. Because of its isolated occurrence, its relatively complete state and its 'complex' decoration (Di Gennaro 2007b, 363 [fig. 195]), it can be argued that the TORNALE find refers to an act of ceramics deposition with a ritual character, rather than to a settlement in the original interpretation. It highlights the possibility that deposition of decorated ceramics occurred more frequently throughout the region, similar to metalwork deposition (§4.2.3). One way or another, the spatial distribution of ceramics attributed to the "Luni Tre Erici-Norchia" style is largely circumscribed to northern Lazio.[221] In this sense, it concerns a regionally specific style of 'specialised', decorated ceramics that cannot fill the gap in our understanding of EBA settlement patterns. This will be substantiated in the following overview of the distribution of open-air sites in the southern part of northern Lazio.

Copper Age-EBA1

Most Copper Age open-air assemblages in northern Lazio are as limited in scope as EBA assemblages. The only substantial evidence for a settled Copper Age community derives from the coastal plain (MACCARESE) to the north of the TIBER mouth. Excavation of the largest surface assemblage found in systematic field survey (MACCARESE [SITO J]-FIANELLO-LE CERQUETE) has yielded several houses

[219] Cf. Petitti 2000 who highlights the connection with the spatial distribution of 'Northern Italian' dress-pins, e.g. LAGO DI MEZZANO (§4.4.3). Recent finds of "tavolette enigmatiche" in Corsica extend their overall distribution and underscore their connotation of supra-regional connectivity (Graziani & Lorenzi 2010), perhaps intimately connected to specialist knowledge such as metalworking.

[220] In fact, many of the open-air sites concerned had been dated on the basis of the presence of isolated decorated ceramic fragments. The same argument applies to a smaller number of sites in northernmost Lazio (see above). The sites concerned have here been subsumed in the category "generically EBA" (with the addition of a question mark in Tables 7.4 & 7.5; cf. Appendix 4 for further details).

[221] Di Gennaro & Pacciarelli (1996, 574) list occurrences (ROMA-SANT'OMOBONO; FOSSO DI TORRE SPACCATA; QUADRATO DI TORRE SPACCATA; GROTTA POLESINI) immediately to the south of the TIBER (§7.1.4).

(Carboni & Salvadei 1993).[222] In addition, three (or four) unexcavated late Copper Age open-air sites in the vicinity complete the picture of a single settled community, living at one or two (perhaps three) locations at a time. The cluster of sites includes undated articulated burials of Copper Age type, as well as disarticulated human remains, both types of burial also at the excavated settlement (§5.1.3).[223] The absence of copper metalwork in this micro-region indicates that this settled community participated in funerary and non-funerary metalwork deposition further to the north and/or the south (§4.2.3; §4.4.1). The trajectory of settlement in the MACCARESE shows a gap in EBA, connected to changes in hydrological regimes.[224] These entailed higher water levels in EBA1, partly connected to rising sea levels, and lower water levels from the EBA2 onwards (cf. Carboni et al. 2002; Di Rita et al. 2010), probably related to the climatic 'dry event' (§3.4). At present, there is no evidence that Copper Age settlements along the coast of northern Lazio are lost to posterity, due to rising sea levels.[225]

The areas surrounding the MACCARESE plain have yielded assemblages with Copper Age-EBA1 continuity (VACCINA [#126]; PALIDORO [#127]), as well as a new EBA1 place (LE GROTTE [#128]). These sites are situated somewhat further to the north in the interior where streams run off the BRACCIANO crater, an area from which also a considerable number of sites have been reported as generically EBA in date (Table 7.5). The three EBA1 assemblages (PALIDORO; VACCINA; LE GROTTE) are represented by a single vessel type, each with its main parallels in Tuscany (Cocchi Genick 1998, 285-286), and should perhaps be regarded as occasional acts of deposition of 'non-local' objects rather than settlements. In this respect, the long-term trajectory of PALIDORO [#127] is uncharacteristic of settlements, which normally would have shifted over time. Similarly, the recent excavation of a Copper Age-EBA open-air site (MAGLIANELLA DI SOTTO [#134]), in the interior to the east of the coastal plain, closer to the TIBER valley (Figure 7.1), has yielded a peculiar assemblage. The presence of complete vessels, in direct association with a body of water (perhaps a small lake), could indicate as easily a depositional zone (instead of a settlement), the former arguably more consistent with its 'mixed' chronology.[226] Overall, an EBA1 successor to the MACCARESE settled community can, at present, not be discerned in the larger micro-region to the north of the TIBER mouth.

The bleak picture of EBA1 settlement patterns is valid for northern Lazio as a whole (Tables 7.4 & 7.5). Even if the extremely limited assemblages of decorated ceramics in "Luni Tre Erici-Norchia" style (see above) are included, archaeological visibility of substantial EBA1 open-air sites is low. In this context, the interpretation of the stratigraphical sequence at LUNI SUL MIGNONE-TRE ERICI [#92] as the remains of a persistent settlement in the MIGNONE valley is debatable. In terms of chronology, TRE ERICI-layers 8 & 7 ["capanna IV"] had originally been dated to the Copper Age, subsequently were put forward as type site for the earlier aspect of the "Luni Tre Erici-Norchia" style and then alternatively interpreted as EBA1[227] or MBA1 assemblages. Furthermore, the interpretation of the reported structural remains ["capanna IV"] as a house is debatable, given the limited extent of the excavation and the composition of the assemblage.[228] In particular, the predominance of decorated

[222] At least four houses were discovered, within a relatively short dating range of 180 uncalibrated radiocarbon years [4555-4375 BP] (Manfredini et al. 1995; Carboni et al. 2002; Manfredini 2005). The use-life of the houses has been estimated at 15-20 years and not all of them are regarded as contemporary (Manfredini 2005, 467).

[223] At the excavated Copper Age settlement (MACCARESE [SITO J]-FIANELLO-LE CERQUETE) the wide range of funerary practices (Appendix 2 [#19]) and a pit containing the structured deposition of (the larger part of) a horse and two puppies are in all likelihood a Copper Age phenomenon (Curci & Tagliacozzo 1994; Manfredini 1994; Manfredini 2005, 470; Manfredini 2005a, 24). Unfortunately, neither the human remains nor the funerary contexts have been radiocarbon dated in themselves. The minimalist option is that only the foetus burial (Appendix 2 [#19.1]) can be regarded as a feature of the Copper Age settlement, based on stratigraphical information. Cf. the group of burials found between excavated Copper Age and MBA open-air sites (Appendix 2 [#18]), for which a later, EBA or MBA date cannot entirely be excluded (§5.1.3).

[224] The other excavated site (MACCARESE-LE CERQUETE [SITO F]) started its trajectory in MBA1.

[225] The submerged Copper Age structures, including a copper ingot hoard, reportedly identified by underwater reconnaissance at PYRGI to the west of the TOLFA MOUNTAINS (Frau 1989; Frau 1989a) are debated (Enei 2008, 20 [fig. 23], 86 [nos. 35-36; fig. 156-157]). The reconstruction of two elliptical houses (Frau 1989a, 34 [tav. IV]) based on four remaining posts seems debatable. Geologists have referred to these finds as EBA in date, but with a Copper Age date range (Antonioli et al. 2009).

[226] The chronology of MAGLIANELLA DI SOTTO remains unclear in the preliminary report, leaving open late Copper Age, EBA1 and/or EBA2 dates (Appendix 4 [#134]).

[227] Recently, the debate has been widened by Ialongo (2007) who recognised a potential parallel between the larger part of a small vessel type at LUNI SUL MIGNONE-TRE ERICI (Di Gennaro & Pacciarelli 1996, 575 [fig. 6]) and two larger parts of vessels at ORTUCHIO-STRADA 28 [#16] in the FUCINO BASIN (Ialongo 2007, 158 [tipo 26A], 159 [fig. 116.1-2]), as well as a similar decoration (Ialongo 2007, 171 [tipo 65]), in addition to another parallel in decoration (Ialongo 2007, 173 [tipo 66D]). He regards an EBA1 [subphase BA1A] date for the LUNI SUL MIGNONE-TRE ERICI assemblage as corroborated (Ialongo 2007, 158, 173, 176).

[228] The TRE ERICI excavation concerns a test pit of limited extent but with a deep stratigraphy, in which several 'living floors' have been identified in the same circumscribed location. The putative house ("capanna IV") extends beyond the limits of the

ceramics at LUNI SUL MIGNONE-TRE ERICI recalls Copper Age-EBA1 assemblages (TORRE CROGNOLA; FOSSO CONICCHIO) in northernmost Lazio (see above), and may require a similar interpretation.[229]

	Copper Age	EBA1	generically EBA	EBA2
Agro Falisco-Agro Capenate (VT-RM)	[#96] Porciano [#98] Le Vignacce? [#101] Fosso S. Martino	[#98] Le Vignacce? [#100] Monte Ramiano? [#101] Fosso S. Martino?	[#96] Porciano? [#97] Grotta Arnaro [#99] Tre Querce? [#102] Fosso del Pavone	-
Lago di Bracciano (RM)	[#104] Riserva Campetto?	-	[#103] Vicarello? [#104] Riserva Campetto	-
west of Lago di Vico, between Marta & Mignone valleys (VT)	[#76] Norchia-Piano del Casalone [#78] Cavone [#79] Poggio Gallinaro	-	[#76] Norchia-Piano del Casalone? [#77] Castellina della Civita di Tarquinia? [#78] Cavone? [#79] Poggio Gallinaro? [#80] Montarana? [#81] Uliveto di Cencelle?	-
eastern Mignone valley and catchment (VT)	[#89] Pontone delle Pallotte? [#92] Luni sul Mignone? [#94] La Selcia?	[#92] Luni sul Mignone?	[#83] Cupellaro? [#84] Valle Nobile? [#85] Tornale [#86] San Giovenale? [#87] Cavarella Picchiata [#88] Pianarola [#89] Pontone delle Pallotte? [#90] Pontone Sirignano [#91] Vignolo? [#93] Bruchione? [#94] La Selcia? [#95] Cavarella di Valle Mora-La Stora?	[#82] Barbarano Romano
western Mignone valley-Tolfa Mountains (RM)	[#115] Codata delle Macine? [#110] Bufalareccia-q. 77 [#107] Monte Piantangeli? [#105] Felcetello [#106] Tufarelle sul Rifiume [#116] Pyrgi?	[#110] Bufalareccia-q. 77? [#117] Caolino del Fosso Eri?	[#109] Bufalareccia? [#111] San Pietrino [#107] Monte Piantangeli [#114] Poggio Casalavio? [#113] Castellina di Cerasolo? [#112] Riserva Capannone? [#105] Felcetello? [#106] Tufarelle sul Rifiume [#116] Pyrgi	[#115] Codata delle Macine? [#110] Bufalareccia-q. 77? [#108] Grottini di Rota?
between Lago di Bracciano and Tiber mouth (RM)	[#118] Monte Abbadone [#126] Vaccina [#127] Palidoro [#130] Casale Campanella	[#126] Vaccina [#127] Palidoro [#128] Le Grotte	[#118] Monte Abbadone [#119] Monte Abbadoncino [#120] Caere-"pianoro"? [#121] Ceri-Pian Cerese? [#122] Fornaci di Ceri [#123] Macchia della Signora [#124] Polledrara? [#125] Valcanneto [#129] Le Colonnacce? [#130] Casale Campanella? [#131] Castel Campanile? [#132] Tenuta di Castel Campanile [#133] Statua	[#127] Palidoro [#128] Le Grotte
Fiumicino coastal plain (RM)	Maccarese [cluster]	-	-	-
west of Tiber valley (RM)	[#134] Maglianella di Sotto?	[#134] Maglianella di Sotto?	-	[#134] Maglianella di Sotto?

Table 7.5: overview of (late) Copper Age-EBA open-air sites in 'southern' northern Lazio [nos. refer to Appendix 4 & Figure 7.1].

trench, which in itself makes the interpretation debatable. At the same time, the superposition of several prepared 'floors' dated to the Neolithic and several phases of the Bronze Age in such a small trench may not be a coincidence, but could represent a series of acts making a connection with prior places. Because of the limited extent of the excavation this scenario cannot be assessed, either. See the polythetic classification of open-air assemblages for the composition of the assemblage (§7.3) as well as the analysis of faunal samples (§7.4). The zooarchaeological report mentions disarticulated human remains [n=3], unfortunately not specified as to which skeletal elements they represent (Gejvall 1967), nor their position in the stratigraphical sequence.

[229] The presence of a spring, with potable water, in the vicinity (Östenberg 1967, 33) represents a relevant contextual element.

Finally, a significant gap in the distribution of open-air sites can be recognised in the interior of 'southern' northern Lazio (Table 7.5 [#96-102]), between the TIBER valley and the craters that incorporate LAGO DI VICO and LAGO DI BRACCIANO. The occasional find of an open-air site (MONTE RAMIANO [#100]) near the TIBER valley, in a road-cutting buried under 7 to 10m deep deposits, has been a wake-up call that such a site location is difficult to identify (cf. Guidi 2004, 39). However, the precise date of the MONTE RAMIANO assemblage has remained unclear and dates suggested range from the Copper Age to MBA2. The fact that since the 1960s no other Copper Age or EBA site has been recorded in a similar location, however, suggests that its frequency should not be overestimated. In this respect, the overall scarcity of EBA open-air sites in the interior, extending from northernmost Lazio (Figure 7.1), despite systematic field surveys, should not be overlooked, either. The other side of the 'gap' in the distribution of open-air sites in the interior is that the few EBA1 open-air sites in 'southern' northern Lazio tend towards a 'coastal' distribution. It highlights that the main axis in all likelihood followed the coast of northern Lazio (and not the interior), connecting to the FIORA valley where the main EBA1 node of TORRE CROGNOLA was situated in northernmost Lazio (see above).

EBA2

Contrary to northernmost Lazio where the number of open-air sites increased in EBA2 (see above; Table 7.4), the overall lack of open-air sites in 'southern' northern Lazio persisted (Table 7.5). Only the numerous open-air sites that are generically EBA in date but of limited scope, could suggest otherwise. The small group of EBA2 open-air sites includes two persistent places (PALIDORO [#127]; LE GROTTE [#128]), dated by a single vessel type (Cocchi Genick 1998, 285-286), as before in EBA1 and arguably acts of deposition (see above). At present, the main EBA2 open-air site (BARBARANO ROMANO [#82]) is a new place in the interior, typochronologically linked to northernmost Lazio and Tuscany (cf. Cocchi Genick 1998, 112 [tipo 30], 120 [tipo 38B], 147 [tipo 73], 160 [tipo 92], 178 [tipo 116], 222 [tipo 184B], 242 [tipo 229]). Situated in the source area of the BIEDANO stream, a tributary of the MARTA river, on the watershed with the MIGNONE river, BARBARANO ROMANO highlights connectivity in the physical landscape of the region. The "Luni Tre Erici-Norchia" vessel from TORNALE [#85] (see above) was found in a similar location, on the opposite side of the same watershed, in the UPPER MIGNONE valley. This could highlight a concern with source areas of rivers in ceramics deposition, similar to some cases of metalwork deposition (§4.2.4). In the same micro-regional context, the start of the trajectory of the submerged lake-side assemblage (VICARELLO [#103]) at LAGO DI BRACCIANO has been dated to the EBA2-MBA1 transition (§9.2.1). Here a large cairn served as a focus for deposition, associated with a MBA1 assemblage, but its construction could have started in the previous phase, in coincidence with lower levels of the crater lake in the closed basin due to the 'dry event' (§3.4).

Based on its location and connectivity of its ceramic assemblage (§7.2), the new open-air site at BARBARANO ROMANO seems to have been a node in the introduction of 'monumental' cairns from LAGO DI BOLSENA in northernmost Lazio (see above) to LAGO DI BRACCIANO (§9.2.1). The overall lack of EBA2 open-air sites with substantial assemblages (Table 7.5) heightens the ritual connotation of place-making (in terms of sacred geography) focused on rivers in the region. In particular, it results in a lack of context for the many EBA2 axe depositions, such as in the MIGNONE valley (ROTA) and the TOLFA MOUNTAINS, as well as the isolated EBA2 axe (FICARECCIA) in the source area of a tributary running from the LAGO DI BRACCIANO crater to the TIBER river (§4.2.3), all of these as yet unrelated to contemporary settlements in the immediate vicinity.[230] Similarly, the new rock fissure cult place (PIAN SULTANO) in the TOLFA MOUNTAINS micro-region (§5.1.3; §6.1.3) remains, at present, disconnected from EBA2 settlement patterns. Overall, the distribution of EBA2 sites in 'southern' northern Lazio is skewed to the 'coastal' part, arguably highlighting the main route of connectivity, even more than in EBA1 (see above). This leaves the possibility open that the scarcity of open-air sites in this part of the region refers to a past reality and that the overrepresentation of sites of ritual practice is connected to the role of the area in intercommunal interaction, involving settled communities from northernmost Lazio (see above) and southern Lazio (§7.1.4). In this context, the series of EBA2 axe depositions (§4.2.3) and the establishment of a cult place (PIAN SULTANO) in the TOLFA MOUNTAINS micro-region (§6.1.3) could make more sense in terms of a longer trajectory of community formation, as acts of place-making prior to the emergence of a settled community at the EBA2-MBA1 transition (§9.2.1).

[230] Again, clarification of the chronology of MAGLIANELLA DI SOTTO [#134], situated between FICARECCIA and the TIBER valley, is awaited.

7.1.4 Southern Lazio

Systematic and unsystematic field surveys and, to a lesser extent, excavations in southern Lazio have yielded a relatively high number of EBA open-air sites (Figure 7.1). Most of these are reasonably well-dated, i.e. to a specific phase of EBA1 and/or EBA2 (Table 7.6; Appendix 4 [#135-207]). More in particular, a considerable degree of discontinuity can be discerned in trajectories of EBA open-air sites in this region. This highlights that settlement patterns can be linked to a network change between EBA1 and EBA2. These changes can only be addressed in general terms because of the limited scope of (surface) assemblages and the limited number of excavations. Still, excavations of EBA open-air sites are more numerous than elsewhere in Lazio and Abruzzo. The spatial distributions of open-air sites will be discussed in two parts, first 'northern' southern Lazio, i.e. the province of Roma (RM) to the south of the TIBER river, and subsequently the provinces of Latina (LT) and Frosinone (FR).

'Northern' southern Lazio

The most substantial body of evidence has been accumulated by systematic field survey projects and ensuing (rescue) excavations in the surroundings of the city of Rome (Anzidei & Bietti Sestieri 1980; Bietti Sestieri 1984; Bietti Sestieri et al. 1984; Bietti Sestieri & Sebastiani 1986; Gioia 2008). In addition, the area to the north of the LOWER ANIENE valley, a major TIBER tributary, has been subjected to a number of field surveys and increasingly (rescue) excavations (Sperandio & Mari 1983; Barbaro & Di Gennaro 2007). The following overview shows that in the former area Copper Age-EBA1 open-air sites are well-represented, whereas in the latter area there is more substantial evidence for EBA2 open-air sites (Table 7.6).

Copper Age-EBA1

The existence of a Copper Age settled community can be deduced from a cluster of open-air sites on the southeastern outskirts of the city of Rome (Table 7.6), in association with a considerable number of Copper Age cemeteries (§5.1.3; Table 5.4). Excavations of these Copper Age open-air sites have yielded the remains of houses, sometimes in direct association with funerary evidence (§5.1.3). A number of these settlements seem to have persisted in EBA (Table 7.6), given the presence of limited amounts of EBA1 ceramics (see below), although the range of associated radiocarbon dates does not extend beyond the end of the Copper Age in the case of settlements (§3.3). In terms of site location, the majority of Copper Age-EBA1 open-air sites have been found in smaller valleys, off the LOWER TIBER and LOWER ANIENE valleys (Bietti Sestieri & Sebastiani 1986, 52-54, 67; Gioia et al. 2008a). The reconstruction of a pattern of shifting cultivation suggests that this cluster one of periodically shifting Copper Age-EBA1 settlements (Bietti Sestieri & Gianni 1984, 147; Gianni 1991, 135; Anzidei & Carboni 1995, 222) and raises the question how many were occupied simultaneously.[231] The scale of settlements has been estimated, on the basis of the extent of surface scatters and more detailed information from a number of excavations.[232] Both the surface assemblages and the excavated sites highlight a range from small, perhaps one generation settlements and larger, longer-lived settlements.[233]

These reconstructions are mainly based on Copper Age evidence in the micro-region and it remains to be seen to what extent it applies to EBA1.[234] The overall lack of substantial EBA1 open-air assemblages could highlight that larger settlements had ceased to exist.[235] Currently, persistent Copper Age-EBA1 occupation or reuse has only been demonstrated at one, recently excavated site (TENUTA QUADRARO-VIA LUCREZIA ROMANA [#160]).[236] The lay-out and internal chronology of this open-air

[231] At present, the periodicity of shifting site locations can only be estimated on the basis of the duration of site trajectories, including reuse of prior locations, in the lack of series of absolute dates (especially for the EBA1 situation; §3.3).

[232] The series of excavated open-air sites with a Copper Age-EBA1 trajectory includes CASALE DEL CAVALIERE [#167]; QUADRATO DI TORRE SPACCATA [#156]; PISCINA DI TORRE SPACCATA [#157]; TORRE SPACCATA-FOSSO DEL PATRONE [#158]; TENUTA QUADRARO-VIA LUCREZIA ROMANA [#160].

[233] It has been suggested that the majority of open-air sites, with surface assemblages of limited extent (<0.5 ha), represented small villages (if not isolated farmsteads), following the model of the 'household cluster' (ca. 200 square metres) excavated at one of the larger open-air sites (PISCINA DI TORRE SPACCATA [#157], 0.5 ha) (Gianni 1991, 126-129). The subsequent estimate of 7-10 households for the latter site (Gianni 1991, 128) is in all likelihood an overestimate, not corroborated by excavation. It does not take the model of periodic residential mobility into account, that not all (reconstructed) household clusters would have been contemporary in the site's trajectory.

[234] The reportedly single-phase occupation at CASALE DEL CAVALIERE [#167] near the LOWER ANIENE was recently dated to the late Copper Age by a radiocarbon date (4160±70 BP [GrA-7112], cf. Boccuccia et al. 2000, 235).

[235] Angle & Guidi's recent synthesis (2007, 152) only lists two EBA1 open-air sites in this micro-region.

[236] At this site two general phases of occupation have been identified in four distinct areas (two areas dated to each phase of occupation), stretched out along a course of water (Iaia et al. 2005, 449 [fig. 1]).

site, as well as the absence of a stratigraphy, highlight that in the excavated area two 'household clusters' were contemporary at the most (perhaps only one).[237] The EBA1 assemblages from excavated Copper Age sites in the vicinity are more limited. This characteristic suggests that the micro-regional settled community was significantly smaller than before, following a pattern of periodically shifting settlements related to shifting cultivation.[238] An alternative interpretation of limited EBA1 assemblages is that they represent seasonal sites. At the same time, the possibility that they constitute acts of deposition at prior, Copper Age places, cannot be excluded, given the prominent presence of decorated EBA1 ceramics.

Outside the core of the distribution, Copper Age and EBA1 open-air sites are less numerous to the north of the LOWER ANIENE and in the coastal strip (Table 7.6). At present, there is no substantial evidence for a parallel, settled Copper Age-EBA1 community to the north of the ANIENE river. For instance, the preliminary publication of a recent survey in the micro-region only lists sites as generically EBA in date (Barbaro & Di Gennaro 2007). The sites have been dated to EBA2 in a recent synthesis (Angle & Guidi 2007, 150) and subsequent excavations have not yielded EBA1 ceramics (Barbaro 2008; Barbaro & Di Gennaro 2008). In this 'depleted' context, the 'isolated' EBA1 open-air site (L'ARDINO [#135]) in the UPPER ANIENE micro-region arguably highlights cross-APENNINE connectivity and seasonal mobility (rather than a settlement). Similarly, occasional EBA1 cave use (GROTTA POLESINI) in the LOWER ANIENE valley (§6.1.3) and the isolated find of a ' horizon II' axe ("tra Poli e Guadagnolo") between the LOWER ANIENE valley and the SACCO valley (§4.2.3) cannot be linked to a settled community. On the other hand, the scarcity of Copper Age-EBA1 evidence in the city of Rome itself (ROMA-CAMPIDOGLIO [#153]), in comparison with the relatively consistent body of early metalwork (§4.2.3), is probably due to low archaeological visibility, albeit not necessarily.

On the other side of the core of the distribution, Copper Age and EBA1 open-air sites are even more elusive in the coastal strip (Table 7.6). It remains to be seen whether a potential settled community along the coast is lost to posterity due to the formation of (new) dunes and lagoons at the Copper Age-EBA transition (cf. Alessandri 2007; Antonioli et al. 2009). If an extensive open-air assemblage near the coast (FOSSO DEL DIAVOLO [#178]) can be interpreted as a Copper Age-EBA1 settlement, its location would contradict the loss of a settled community beyond the present shoreline. However, in all likelihood it represents a seasonal site that was used repeatedly in the exploitation of coastal resources.[239] Moreover, the presence of structural remains in a recent excavation of an EBA1 open-air site (MALAFEDE-VALLE PORCINA [#175]) near the confluence of a smaller tributary running parallel to the coast with the TIBER, argues against a coastal location of settlements. Its single-phase character fits the EBA1 pattern of shifting small settlements reconstructed in the interior (see above). In this context, the EBA gap in the coastal plain (MACCARESE) to the north of TIBER mouth (§7.1.3) should be recalled as parallel evidence for periodically shifting settlement locations, perhaps related to the emergence of the EBA1 open-air site (MALAFEDE-VALLE PORCINA [#175]) to the south of TIBER valley.

EBA2

A high degree of discontinuity can be discerned in both the trajectories and the distribution of open-air sites between EBA1 and EBA2 in 'northern' southern Lazio (Table 7.6). The core in the distribution of open-air sites seems to have shifted to the area to the north of the LOWER ANIENE valley in EBA2 (see below). In the area to the south, on the outskirts of the city of Rome, two open-air sites (PONTE LINARI [#159]; FOSSO DI GREGNA [#162]) have recently been dated explicitly to 'early' EBA2 [subphase BA2A], arguably 'transitional' EBA1-EBA2 sites that extended the EBA1 settlement pattern (Angle & Guidi 2007, 151). Given the overall limited scope of EBA2 open-air assemblages in this micro-region, these should probably be interpreted in terms of a pattern of periodically shifting locations of small settlements, perhaps solely sites of occasional, seasonal activity, as in the previous phase (see above).[240]

[237] As one of the few EBA1 sites with structural remains in Abruzzo and Lazio (§7.3), the final publication of TENUTA QUADRARO-VIA LUCREZIA ROMANA [#160] (including radiocarbon dates) is awaited. Ialongo (2007, 176) dates the ceramics from 'area III' published in the preliminary publication (Iaia et al. 2005) to subphase BA1A, contemporary with ORTUCCHIO-STRADA 28-SCAVI CREMONESI [#16] in the FUCINO BASIN (§7.1.2). Both sites also show a striking similarity in the kind of the structural remains, in particular pebble pavements (§7.3).

[238] Following ceramics typochronology (Cocchi Genick 1998; Ialongo 2007), the trajectory is as follows. *BA1A*: TENUTA QUADRARO-VIA LUCREZIA ROMANA [#160]; *BA1B*: FOSSO DI TORRE SPACCATA [#154] & CASALE DI TORRE SPACCATA [#155] & QUADRATO DI TORRE SPACCATA [#156] (disregarding generically EBA1 ceramics [i.e. subphase BA1]).

[239] Cf. the polythetic classification of the FOSSO DEL DIAVOLO [#178] assemblage (§7.3).

[240] *Contra* the indiscriminate use of the label "settlement" for any open-air site (e.g. Angle & Guidi 2007).

	Copper Age	EBA1	generically EBA	EBA2
upper Aniene valley (RM)	-	[#135] L'Ardino	-	[#135] L'Ardino [#136] Roccagiovine [#137] Le Zitelle?
north of lower Aniene valley (RM)	[#138] Cerreto-Quirani [#140] Fosso del Cupo? [#141] Le Caprine [#142] Tavernucole?	[#141] Le Caprine?	[#138] Cerreto-Quirani? [#140] Fosso del Cupo [#142] Tavernucole? [#143] Casetta Massucci? [#144] Fosso di Tor San Giovanni [#147] Tenuta Radicicoli Del Bene-area 79 [#148] Tenuta Radicicoli Del Bene-area 85 [#149] Casale della Cecchina [#150] Via Italo Svevo [#151] Crustumerium?	[#139] Colle del Peschio [#141] Le Caprine? [#145] Tenuta Radicicoli Del Bene-Accorrabone [#146] Tenuta Radicicoli Maffei-area 106
city and suburbs of Rome (RM)	[#156] Quadrato di Torre Spaccata [#157] Piscina di Torre Spaccata [#158] Torre Spaccata-Fosso del Patrone [#160] Tenuta Quadraro-via Lucrezia Romana -Osteria del Curato-via Cinquefrondi [#161] Unità Anagnina-punto II [#163] Tor Pagnotta-Casale 14 [#164] Fosso della Mola [#165] Quarto delle Tortorelle? [#166] Osteria Malpasso?	[#153] Roma-Campodoglio? [#154] Fosso di Torre Spaccata [#155] Casale di Torre Spaccata [#156] Quadrato di Torre Spaccata [#157] Piscina di Torre Spaccata? [#158] Torre Spaccata-Fosso del Patrone [#160] Tenuta Quadraro-via Lucrezia Romana [#163] Tor Pagnotta-Casale 14? [#164] Fosso della Mola? [#165] Quarto delle Tortorelle?	[#161] Unità Anagnina-punto II? [#166] Osteria Malpasso?	[#152] Roma-S. Omobono [#158] Torre Spaccata-Fosso del Patrone [#159] Ponte Linari [#162] Fosso di Gregna [#163] Tor Pagnotta-Casale 14?
between lower Aniene valley and Alban Hills (RM)	[#167] Casale del Cavaliere [#169] Mole di Corcolle [#171] Colle Mattia	[#167] Casale del Cavaliere? [#169] Mole di Corcolle [#171] Colle Mattia	[#172] Via Mediana?	[#168] Colle Tasso [#170] Colle Palumba? [#173] Lago Albano-"villaggio delle macine"
Coastal strip (RM-LT)	[#174] Quarto della Zolforatella? [#178] Fosso del Diavolo [#206] Tratturo Canìo?	[#174] Quarto della Zolforatella? [#175] Malafede-Valle Porcina [#176] Pratica di Mare? [#178] Fosso del Diavolo?	[#177] Camposelva? [#179] San Giacomo? [#180] Nettuno-"stop 4" [#208] Lago di Fondi? [#209] Monte S. Biagio-Scalelle?	[#175] Malafede-Valle Porcina? [#206] Tratturo Canìo [#207] La Casarina
watershed Aniene-Sacco valleys (RM-FR)	-	-	[#181] Colle dell'Uomo Morto? [#182] Coste Vicoi-Fontana Bracchi?	[#183] Colle Montarozzo?
Sacco valley (FR)	[#184] Selciatella [#185] I Pantani [#190] Selva dei Muli	[#184] Selciatella? [#185] I Pantani? [#190] Selva dei Muli	[#186] Capo I Prati	[#187] Monte San Leonardo? [#188] Fontana del Lago-Convento di San Giuseppe [#189] Colle Prote [#190] Selva dei Muli [#191] Borgo Sant'Angelo? [#192] Contrada Cavone?
middle Liri valley & (south)east Frosinone province (FR)	[#196] Campovarigno [#202] "tra Casale Graziano e Fontana Maiali"? [#203] Isoletta	[#197] Val di Comino-San Andrea	[#194] Isola Liri? [#199] Macciocco [#200] "tra Colle Castagneto e Fontana Vitola" [#201] Via Le Fontanelle [#202] "tra Casale Graziano e Fontana Maiali"? [#204] Pedicata	[#193] Tremoletto? [#195] Carnello [#196] Campovarigno? [#197] Val di Comino-San Andrea [#198] Colle della Iugera [#203] Isoletta [#205] Fosso Gan Giovanni

Table 7.6: overview of (late) Copper Age-EBA open-air sites in southern Lazio [nos. refer to Appendix 4 & Figure 7.1].

The earliest evidence at the lake-side inside one of the craters in the ALBAN HILLS also seems to refer to occasional activity, linked to a lowering of lake levels due to the EBA2 climatic 'dry event' (§3.4). The EBA2 assemblage (LAGO ALBANO-VILLAGGIO DELLE MACINE [#173]) comprises a limited amount of ceramics, mainly a set of three vessels (including two EBA2 cups) piled up in a small natural depression with a wetland connotation. The predominant presence of complete vessels in a small EBA2 assemblage recalls the phenomenon of cult places at crater lakes in northernmost Lazio (§7.1.3). Arguably, it constituted an act of place-making (rather than a settlement) that engaged with changing climatic conditions and preceded the larger MBA1 assemblage at the same location.[241]

The core in the distribution of EBA2 sites was situated in the area to the north of the LOWER ANIENE valley (Table 7.6). It has been suggested that this did not only entail a shift in settlement patterns, but actually involved the abandonment of the area to the south, on the opposite side of the ANIENE river (Barbaro & Di Gennaro 2007, 920, 923). Recent excavations of two adjacent open-air sites (TENUTA RADICICOLI DEL BENE-ACCORRABONE [#145]; TENUTA RADICICOLI MAFFEI-AREA 106 [#146]) have substantiated the impression of a more substantial presence, as indicated by survey results, presumably the remains of a settled EBA2 community.[242] At the same time, the intermontane EBA1 site (L'ARDINO [#135]) persisted and another EBA2 open-air site (ROCCAGIOVINE [#136]) was situated downstream the same valley, arguably both seasonal sites linked to the settled community. Similarly, emergent use of a cave with geothermal properties in the area (GROTTA DELLO SVENTATOIO) would have been linked to such a settled community, as well as occasional but persistent cave use (GROTTA POLESINI) in the LOWER ANIENE valley (§6.1.3). The presence of a settled community can also be deduced from the focus that the LOWER ANIENE valley provided for connectivity to and from the southern Italian region of Campania. One limited, single phase assemblage (COLLE TASSO [#168]) consisting of "Palma di Campania" ceramics (Cocchi Genick 1998, 327) is situated on the opposite side from the postulated settled EBA2 community to the north of the ANIENE, where an excavated EBA2 assemblage (TENUTA RADICICOLI DEL BENE-ACCORRABONE [#145]) includes ceramics of similar type (Barbaro & Di Gennaro 2007, 923; Barbaro 2008).[243]

In order to explain the shift in settlement patterns, references have been made to the repercussions of changing hydrological regimes due to the EBA2 climatic 'dry event' (§3.4; cf. Angle et al. 2007, 173-174). The one excavated EBA2 assemblage (TORRE SPACCATA-FOSSO DEL PATRONE [#158]) to the south of the LOWER ANIENE valley, linked to a postulated multi-period settlement in the small valley, derives from a colluvial deposit resulting from a change to a torrential regime (Arnoldus-Huyzendveld 2008; Baroni et al. 2008). Given the long-term character of the colluvial deposit, making a connection with sustained changes in hydrological regime seems more likely than postulating an EBA 'eruptive' lahar event (or cycle) deriving from the ALBAN HILLS, in addition to well-dated Copper Age and Archaic events (§3.4; *contra* Arnoldus-Huyzendveld 2008). This is underscored by the similar circumstance that (parts of) the assemblages (TENUTA RADICICOLI DEL BENE-ACCORRABONE [#145]; TENUTA RADICICOLI MAFFEI-AREA 106 [#146]) excavated in the area to the north of the LOWER ANIENE valley also derive from colluvial deposits. The widespread character of such a 'colluvial' phenomenon highlights the possibility that the reconstructed shift in settlement patterns between EBA1 and EBA2 is partly based on differentiation in archaeological visibility due to post-depositional activity (cf. Gioia et al. 2008a). On the other hand, the scenario of a shift in focus towards the interior is consistent with the lack of EBA2 open-air sites in the coastal strip (Table 7.6).[244]

An alternative scenario engages with the evidence for connectivity to Campania (see above), which arguably included exchange of information. Shared knowledge about the resumption of Plinian-

[241] Unfortunately, radiocarbon dates of the structural remains (i.e. wooden posts) remain unpublished. Reportedly, they follow the distinctive proportions of the assemblage, in the sense that the majority of posts have yielded MBA1 dates, whereas only one sample (from one of the lower layers [US9]) resulted in an EBA2 date (Angle & Guidi 2007, 154 [note 4]).

[242] The more consistent presence may also explain the 'anomalous' EBA2 radiocarbon dates (§3.3; Table 3.7) from a MBA open-air site in the same micro-region (Nijboer 2008).

[243] As concerns "Palma di Campania" ceramics, the cave assemblage (GROTTA DEL CANE) in the far south of Lazio, close to Campania, and the vessel in the assemblage of the rock-fissure cult place (Pian Sultano) in northern Lazio should be recalled (§6.1.3). It is tempting to suggest a direct link between the percolated occurrence of this type of ceramics in 'coastal' Lazio and the event of the EBA2, Avellino eruption of VESUVIUS in Campania (§3.4). It has been suggested that the areas affected directly by the eruption would have been resettled within a few generations (Albore Livadie & Vecchio 2005a, 43-44; Passariello et al. 2009), thus constituting a break in site trajectories. Affected communities in northern Campania might have sought to establish links with communities in southern Lazio in order to cope with the aftermath of the disaster. In this respect, "Palma di Campania" are differentiated stratigraphically from 'earlier' EBA2 ceramics at TENUTA RADICICOLI DEL BENE-ACCORRABONE [#145].

[244] Rising sea-levels may not so much have relocated the coastline, as contributed to the salinisation of coastal lagoons (Di Rita et al. 2010), affecting seasonal subsistence strategies based on freshwater coastal resources.

scale volcanic activity at VESUVIUS in EBA2, added to local knowledge about a Copper Age eruptive 'lahar' event in the ALBAN HILLS (§3.4; cf. Funiciello et al. 2002), could have prompted a move away from the surroundings of this ' remnant' volcanic complex at the start of EBA2 [i.e. subphase BA2A] (see above). In this context, the act of ceramics deposition inside the active crater (LAGO ALBANO-VILLAGGIO DELLE MACINE [#173]) can be interpreted as an act of cosmological place-making directed at the subsurface (as a ' living' entity), especially in the light of the coincidence with sustained decrease of lake-levels due to the climatic 'dry event' in EBA2 (§3.4). Such a 'cosmological' scenario finds corroboration in differentiation in the spatial distribution of EBA2 metalwork (§4.2.3). Axe depositions have been reported from the ALBAN HILLS (CAMPI D'ANNIBALE), the present city of Rome (ROMA-ESQUILINO)[245] and the coastal strip (CASALÀZZARA), but not from the postulated settled area to the north of the LOWER ANIENE valley (Table 4.15).

The provinces of Latina and Frosinone

Parts of the two southern provinces of Lazio have been subjected to systematic field surveys, but the number of EBA open-air sites is significantly lower than elsewhere in the region (Table 7.6; Figure 7.1 [#179-206]). Still, the presence of several settled communities can be deduced from a number of clusters of EBA open-air sites, mainly in the interior province of Frosinone (see below). I will argue that such a clustered settlement pattern refers to a past reality, again by making a comparison with spatial patterns of other elements in EBA cultural landscapes, in particular metalwork deposition (Chapter 4) and cave use (Chapter 6).

Copper Age-EBA1

Overall archaeological visibility of Copper Age-EBA1 open-air sites is low in the coastal province of Latina (LT), similar to the pattern in the coastal strip extending to the TIBER mouth to the north (Table 7.6). Copper Age remains reported from a buried stratigraphy in the coastal plain (TRATTURO CANÌO [#206]) highlights the possibility that post-depositional processes are a determining element in the current lack of open-air sites. An additional or alternative explanation for low archaeological visibility lies in the seasonal or special purpose character of the exploitation of marshlands, lake environments, the coast and the sea. In this respect, limited but persistent Copper Age-EBA1 cave use at GROTTA VITTORIO VECCHI (§6.1.3), situated in the LEPINI MOUNTAINS overlooking the coastal plain, is consistent with a scenario of seasonal use of the coastal area, by settled communities to the northwest in the Roma (RM) province (see above) and in the interior province of Frosinone (FR).

The presence of a late Copper Age-EBA1 settled community in the SACCO valley, on the opposite side of the LEPINI MOUNTAINS, is mainly based on the extensively excavated open-air site at SELVA DEI MULI [#190], which have yielded a series of structural remains including houses. Although not published in detail yet, the preliminary reports of recent excavations maintain that the late Copper Age settlement of SELVA DEI MULI persisted in EBA1 (Cerqua 2009, 2010; but cf. Cerqua 2011). Less substantial evidence for structural remains has been reported from other open-air sites (SELCIATELLA [#184]; I PANTANI [#185]) in the SACCO valley. Those at SELCIATELLA concern a putative living floor in the form of a 'pebble pavement' and a couple of post-holes. However, the associated assemblage does not seem to indicate a year-round settlement, nor does its location in a doline stretch.[246] The exposed stratigraphy at I PANTANI includes a subtle archaeological layer containing charcoal, tiny fragments of burnt clay (perhaps related to a fire-place rather than a house floor), but its chronology is uncertain. The presence of a late Copper Age-EBA1 settled community is further corroborated by the spatial distribution of Copper Age burials (§5.1.3) and copper metalwork (§4.2.3) in the SACCO valley,[247] as well as Copper Age-EBA1 cave use at GROTTA VITTORIO VECCHI and in the COLLEPARDO micro-region (§6.1.3).

[245] With the exception of an isolated fragment (ROMA-S. OMOBONO [#152]), there is a striking lack of context for EBA2 metalwork deposition in the city of Rome, similar to the Copper Age-EBA1 (see above).

[246] The highly fragmented state of ceramics and evidence for exposure to extreme heat of the SELCIATELLA [#184] assemblage as a whole has prompted the interpretation of a 'waste deposit' (Bistolfi & Muntoni 2000, 274-276). Alternatively, the assemblage can be regarded as the remains of ritual practices, in connection with a subsurface feature of the physical landscape (i.e. a doline stretch).

[247] Whereas Copper Age burials have been found on either side (SGURGOLA; CASALE DEL DOLCE; VADOLARGO), isolated finds of copper metalwork are only situated to the south of the SACCO river, on the opposite side from the Copper Age-EBA1 open-air sites. The Copper Age cemetery of CASALE DEL DOLCE made a connection with a deeper past, i.e. a Neolithic-Copper Age context of settlement and land modifications on a monumental scale, channeling water (re)sources for an undefined industrial or subsistence activity (Pracchia & Zarattini 2000).

Further to the south, a recent field survey in a smaller intermontane basin (VAL DI COMINO) to the southeast of the MIDDLE LIRI valley has revealed an EBA trajectory of community formation. The earliest, EBA1 evidence is included in the open-air site with the largest assemblage (VAL DI COMINO-S. ANDREA [#197]), associated with a particular feature. The latter concerns a deposit of charcoal and carbonised cereal remains at the bottom of a depression of a karstic nature. Because of the absence of structural remains, the excavators interpret VAL DI COMINO-S. ANDREA as a seasonal site (Carancini et al. 2003, 81-83; Bruni et al. 2006, 79-80), linked to communities settled elsewhere, such as in the FUCINO BASIN (§7.2) and in the SACCO valley (see above). However, it is significant that this context of food deposition, as the earliest evidence, constituted an act of place-making, in connection with a significant subsurface feature of the physical landscape, akin to EBA cave use (§6.2) and served as a focus for subsequent acts of deposition (including ceramics and a quernstone fragment) in a trajectory of community formation. The ritual connotation of the assemblage is underscored by the presence of a so-called 'ceramic horn' (It. 'corno fittile') similar to one from the open-air site of SELVA DEI MULI [#190], in both cases interpreted as an object that was in all likelihood related to ritual practices (Biddittu & Segre Naldini 1981, 38; Carancini et al. 2003, 83; Bruni et al. 2006, 84). Given the cluster of open-air sites with limited assemblages, generically EBA in date, in the VAL DI COMINO micro-region itself (Table 7.6), there is a possibility that upon excavation one (or two) of these may represent small EBA1 settlements (rather than seasonal sites), as part of a pattern of shifting locations of settlement.[248]

EBA2

Despite the overall increase in open-air sites between EBA1 and EBA2 (Table 7.6) it remains difficult to reconstruct settlement patterns in the interior province of Frosinone.[249] Still, increased archaeological visibility of open-air sites in EBA2 does highlight a network change. Generally, this has been interpreted as a change in settlement patterns following from the impact of the EBA2 climatic 'dry event' (§3.4). It is usually argued that the latter explains the former, in terms of a shift to site locations at lakes or in the foothills with perennial sources (e.g. Mancini 2006; Angle & Guidi 2007, 154-158), but this scenario has to be tested on a micro-regional scale and in the wider context of cultural landscapes. In this respect, the settled EBA1 community in the VAL DI COMINO persisted and seems unaffected by the EBA2 'dry event'.[250] In this micro-region at least one new place (COLLE DELLA IUGERA [#198]) was added to the persistent place (VAL DI COMINO-S. ANDREA [#197]), the latter arguably a cult place (see above). The COLLE DELLA IUGERA assemblage includes several quernstone fragments, corroborating the presence of a settled community in the VAL DI COMINO micro-region, arguably also including some of the unexcavated sites, generically EBA in date (Table 7.6).

EBA2 assemblages in the remainder of the southeastern part of the province of Frosinone, including the LIRI valley (Table 7.6), are more limited in character and the possibility that these represent seasonal sites cannot be excluded. Two of these (ISOLETTA [#203]; FOSSO SAN GIOVANNI [#205]) are reported from the area with evidence for occasional EBA2 cave use (GROTTA DEL CANE; VALLE CANTARA) (§6.1.3) in the mountains that separate them from (or link them to) the VAL DI COMINO community to the north. In particular, the assemblage with "Palma di Campania" ceramics reported from GROTTA DEL CANE (Appendix 3 [#34]) highlights that connectivity from Campania followed the course of the LOWER LIRI-SACCO valley to the LOWER ANIENE valley (see above). This scenario is underscored by the presence of an EBA2 axe, reportedly of southern Italian type (MONTE CAMPO LUPINO) on the opposite side of the valley (§4.2.3), at an axis of connectivity to one of the smaller coastal plains in the Latina (LT) province.

---

[248] This reverses the postulated direction of mobility (Carancini et al. 2003, 81-83; Bruni et al. 2006, 79-80), starting from a settled community at VAL DI COMINO to sites of seasonal activity in the SACCO valley, the FUCINO BASIN and cave use in the UPPER LIRI valley and the area of COLLEPARDO (§6.1.3). Typological affinities between ceramics from the VAL DI COMINO assemblages and the EBA assemblage of GROTTA MADONNA DELLE CESE (Bruni et al. 2006, 85) underscore such a scenario of cave use involving mobility from outside the SACCO valley.

[249] The increase is inflated by the fact that a considerable number of open-air sites that are often listed as EBA2 (or simply EBA) in date (e.g. Mancini 2006; Belardelli et al. 2007; Treglia 2007), are predominantly, if not exclusively, MBA1 in date and are regarded as such in this thesis (Appendix 4; §9.2.2; cf. Van Rossenberg forthcoming). For instance, two isolated pit assemblages (CONTRADA CAVONE [#192]), including an EBA2-MBA1 vessel type (Biddittu et al. 2007a, 898), are considered here as MBA1 acts of deposition.

[250] Perhaps because it had been established in a water-rich environment in the first place (cf. Bruni et al. 2006, 71-74). Still, the abandonment of the micro-region before MBA1 could be related to the persistence of the 'dry event'.

To the northwest of the MIDDLE LIRI valley, the number of open-air sites increased in EBA2 (Table 7.6), with the most substantial evidence deriving from a group of sites (MONTE SAN LEONARDO [#187]; FONTANA DEL LAGO-CONVENTO DI SAN GIUSEPPE [#188]; COLLE PROTE [#189]), perhaps a new settled community.[251] This cluster occupies an intermediate position with respect to the SACCO valley, the MIDDLE LIRI valley and the area of COLLEPARDO, with persistent and new evidence for cave use in EBA2 (§6.1.3). This could indicate intercommunal interaction with the VAL DI COMINO community (see above) in the form of shared cave use, not only at COLLEPARDO[252] but also in the UPPER LIRI valley (§6.1.2). The reported persistence in EBA2 of the open-air site at SELVA DEI MULI [#190] (see above) concerns a limited assemblage, predominated by decorated ceramics, arguably the remains of occasional use of a prior place at most. Overall, this leaves EBA2 axe depositions (SEGNI; ANAGNI) in the SACCO valley (§4.2.3),[253] at present, unrelated to contemporary settlement patterns and these should probably be situated in between settled EBA2 communities. The limited character of the open-air assemblages on the ANIENE-SACCO watershed, only generically EBA or possibly EBA2 in date (Table 7.6), does not seem to add up to a settled community and again indicates connectivity to the LOWER ANIENE community (see above).

Finally, in the coastal province of Latina (LT) the overall scarcity of open-air sites persisted in EBA2 (Table 7.6). Consequently, the emergence of a tradition of EBA2 axe depositions in connection with the lagoonal strip (§4.2.3), at present, remains disconnected from contemporary settlements. Although one of the axes was found in association with EBA2 ceramics (LA CASARINA [#207]) in a coastal lake-side context, it probably highlights a depositional zone (rather than a settlement). For comparison, the only definite association between EBA2 ceramics and axes concerns the lake-side cult place at LAGO DI MEZZANO in northernmost Lazio (§7.1.3). The second open-air site in the province, reportedly EBA2 in date (TRATTURO CANÌO [#206]), is located in the interior of the coastal plain. Arguably, it should be interpreted as a site of occasional activity, also in the light of its proximity to the persistent cult place (GROTTA VITTORIO VECCHI) in the LEPINI MOUNTAINS (§6.1.3). At present, there is no substantial evidence for a year-round, settled EBA2 community in the coastal plain (cf. Alessandri 2007, 197-201), although the consequences of post-depositional, alluvial activity on archaeological visibility have to be taken into account. In this respect, radiocarbon dates in the late Copper Age-EBA range have been obtained for deposits at depths between 2-6m below the present surface (Attema & Delvigne 2000). On the other hand, the wider pattern of the dissociation of EBA2 metalwork from settled communities in southern Lazio as a whole (see above) could argue against the presumption of the presence of settled communities in the coastal province.

7.2 Typochronological networks: a diachronic perspective on regional connectivity and settlement patterns

In the preceding overview of spatial distributions of EBA open-air sites on micro-regional to regional scales questions were raised about connectivity on regional to supra-regional scales (§7.1). As a first step in the analysis of settlement patterns in the context of cultural landscapes, 'typo-networks' (§2.2.2) based on EBA ceramics will be visualised and explored, including well-dated open-air assemblages. This analysis will add more detail to the exploration of 'connectivity' on the scale of Central Italy as a whole (§3.2.1) by incorporating EBA assemblages from Abruzzo and Lazio that were identified more recently than Cocchi Genick's synthesis (1998). Still, the situation in 'coastal' Abruzzo remains unclear because of the overall lack of open-air assemblages dated specifically to EBA1 and/or EBA2 (§7.1.1), although this gap in EBA archaeological records is to some extent circumvented by an understanding of cross-APENNINE connectivity to and from this region. Moreover, I will make cross-references to the glimpses of regional connectivity that emerged from the diachronic overviews of the distributions of other constituent elements of cultural landscapes, i.e. metalwork deposition (§4.4), burial (§5.1.4) and cave use (§6.1.4).

[251] The assemblage of MONTE SAN LEONARDO [#187] is predominantly MBA1 in date and should probably be interpreted as a subsequent phase in the micro-regional trajectory.
[252] Cf. Bruni et al. (2006, 85) on the the typological affinities between ceramics in the VAL DI COMINO and GROTTA MADONNA DELLE CESE assemblages.
[253] The location of one of the axes (ANAGNI) breaks the locational pattern of copper and bronze axes on the right bank (cf. Angle & Guidi 2007, 153).

7.2.1 Copper Age-EBA1 connectivity

Apart from the 'Bell Beaker' network that extended from Tuscany into northernmost Lazio (§3.2; §4.4.1; §5.2.3), several overlapping Copper Age 'facies', including 'mixed' assemblages, have been recognised in southern Lazio.[254] This has prompted some scholars to use the term 'frontier zone' in describing a situation from which clear-cut cultural boundaries are absent (cf. Carboni 2002; Guidi et al. 2002). Currently, the focus in interpretation is shifting from regarding traditions (or types) of ceramics as territorially defined, bounded cultural entities (i.e. the common connotation of 'facies') towards an appreciation of the particular depositional contexts of the majority of these types of ceramics.[255] This creates the opportunity to be more precise and explicitly address (and engage with) the structural properties of archaeological records in the interpretation of Copper Age assemblages, particularly in southern Lazio. In general, these assemblages tend to be limited in character, unless they are explicitly ritual in character, such as individual burials (§5.2.3) or acts of deposition in pits and natural features. However, irrespective of this differentation the overall number of contexts for each facies is limited and, moreover, they show a capillary distribution with respect to the putative 'heartlands', with relatively isolated occurrences creating the overlap of facies in southern Lazio. The overlap of several of these 'facies' in 'northern' southern Lazio, including 'mixed' assemblages, could highlight cultural boundary work, focused on connectivity rather than separation.

The funerary and non-funerary depositional contexts of the types of ceramics linked to the respective 'facies' mainly involved the incorporation of 'non-local' objects with a distribution that focused on the area of a substantial settled Copper Age community (§7.1.3; Table 7.6). This is consistent with the scenario that the clustered distribution of Copper Age cemeteries highlights and provided a structure for social interaction (§5.1.4; Figure 5.1). The copresence of clusters of both cemeteries and open-air sites highlights that the latter were not only depositional contexts, but in all likelihood also served as meeting-places themselves, in addition to the former.[256] Overall, it indicates that exchange of these types of ceramics (as well as other classes of objects and substances) did not only take place outside southern Lazio, in the respective 'heartlands' (or somewhere in between), and ended up in 'northern' southern Lazio through a series of exchanges (i.e. down-the-line), but also in the immediate vicinity of the settled community itself. This highlights that a high degree of mobility over long distances towards meeting-places was required in intercommunal interaction and exchange. This condition of Copper Age social life gets lost in the search for territorially defined cultural entities (in the traditional sense of 'facies'). The degree of mobility implicit in connectivity will be discussed in more detail in the case of 'typo-networks' based on EBA1 ceramics.

At present, the state of the archaeological record suggests that clustering in settlement patterns persisted in EBA1 (§7.1). Such a sense of continuity is underscored by the persistence of particular Copper Age settlements themselves or, in general, the persistent occurrence of some late Copper Age types of ceramics in EBA1. The role of northernmost Lazio as a nodal area in supra-regional EBA1 connectivity was already argued on the basis of spatial patterns in metalwork deposition (§4.4.1) and burial (§5.1.4). In particular, two comprehensive 'Bell Beaker' assemblages (TORRE CROGNOLA; FOSSO CONICCHIO) were interpreted as significant nodes (or meeting-places) at the southern margin of a network focused on Tuscany (§3.2; §4.4.1; §5.1.4). At the same time, these places constituted the northernmost nodes in the 'typo-network' of subphase BA1A in Lazio (Figure 7.5). Parallel to the 'Bell Beaker' network in this phase, the types of ceramics linked to the 'Ortucchio facies' persisted, covering southern Lazio, the FUCINO BASIN and southern Abruzzo (cf. Anzidei & Carboni 1995, 213; D'Ercole & Pennacchioni 2001; Cazzella 2003; Cutilli et al. 2006; Cocchi Genick 2008). The cross-APENNINE distribution of "Ortucchio" type ceramics highlights connectivity, but the question is which route(s) it followed.

Ialongo's classification (2007) of ceramics from ORTUCCHIO-STRADA 28 in the FUCINO BASIN (§7.1.2) suggests that in subphase BA1A the type site of the 'Ortucchio facies' shows a stronger sense of connectivity to northern Lazio than southern Lazio (Figure 7.5). At present, however, the absence of

[254] The following Copper Age 'facies' are mainly defined by types of ceramics: 'Rinaldone', 'Bell Beaker', 'Ortucchio', 'Gaudo' and 'Laterza' (the two latter 'southern Italian' facies) (cf. Anzidei & Carboni 1995; D'Ercole & Pennacchioni 2001; Cazzella 2003; Cocchi Genick 2007a, 2008).

[255] Cf. Cocchi Genick 2008 on the methodological preference for using 'types of ceramics' instead of 'facies'.

[256] For instance, the open-air site of QUADRATO DI TORRE SPACCATA [#156] breaks the pattern of shifting settlements and (after an earlier episode of use in the Early Neolithic) seems to have constituted a persistent place from the Late Neolithic onwards (Anzidei & Carboni 1995, 221). Its assemblage shows a strong affinity with the 'Ortucchio facies', but also includes a limited number of early 'Bell Beaker' ceramics and 'Rinaldone' ceramics, the latter normally associated with collective tombs, probably connected to ritual practices concerning their contents (Anzidei & Carboni 1995, 216-217).

evidence for open-air sites in the intermediate area, especially in the Rieti province (§7.1.2), argues against a direct, interior route between the FUCINO BASIN and northernmost Lazio and in favour of one that implicated the settled community in 'northern' southern Lazio, subsequently following the coast of northern Lazio (Figure 7.5). In order to substantiate this scenario, it should be recalled that the overall impression of ceramic connectivity in Abruzzo and Lazio is mainly based on types of decoration (§3.2.1; Figure 3.1), including most of the links between ORTUCCHIO-STRADA 28, TORRE CROGNOLA and FOSSO CONICCHIO (Figure 7.5). This could refer to the exchange of 'specialised' types of ceramics (or shared types of decoration) over long distances. In this respect, the EBA1 assemblages in 'southern' northern Lazio are extremely limited (§7.1.4). Similarly, Ialongo's redating (2007) of the LUNI SUL MIGNONE-TRE ERICI assemblage, a potential link between ORTUCCHIO-STRADA 28 in the FUCINO BASIN and the 'Bell Beaker' meeting-place at TORRE CROGNOLA in northernmost Lazio (Figure 7.5), is to a large extent based on a single decorated smaller vessel. For this reason, the interpretation of these ceramics in terms of occasional acts of deposition could not be excluded (§7.1.3).

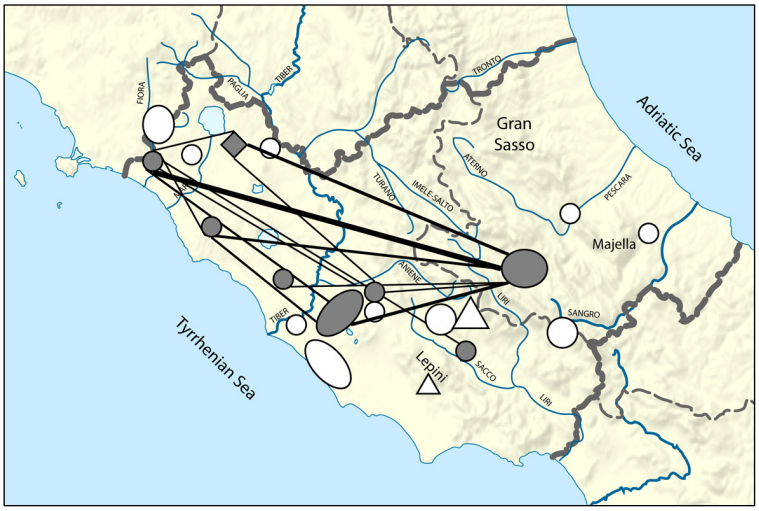

Figure 7.5: map (adapted from http://commons.wikimedia.org/wiki/File:Italy_map-blank.svg) showing the regional 'typo-network' of subphase BA1A in Abruzzo and Lazio [compiled after Cocchi Genick 1998; Belardelli et al. 2007; Ialongo 2007].

In the light of clustering in Copper Age settlement patterns (see above), it seems more likely that southern Lazio was implicated in connectivity between the FUCINO BASIN and the nodal area in the far north of Lazio. In particular, final publication of EBA1 ceramics reported from recent excavations at TENUTA QUADRARO-VIA LUCREZIA ROMANA and SELVA DEI MULI (§7.1.4), can shed further light on this issue, enhancing our understanding of ceramic connectivity in the region of southern Lazio.[257] The presence or absence of connections between these assemblages can, for instance, help to answer the question whether the UPPER-MIDDLE LIRI valley was part of the main cross-APENNINE route of connectivity linking southern Lazio to the FUCINO BASIN, or that a more direct route was followed to 'northern' southern Lazio.

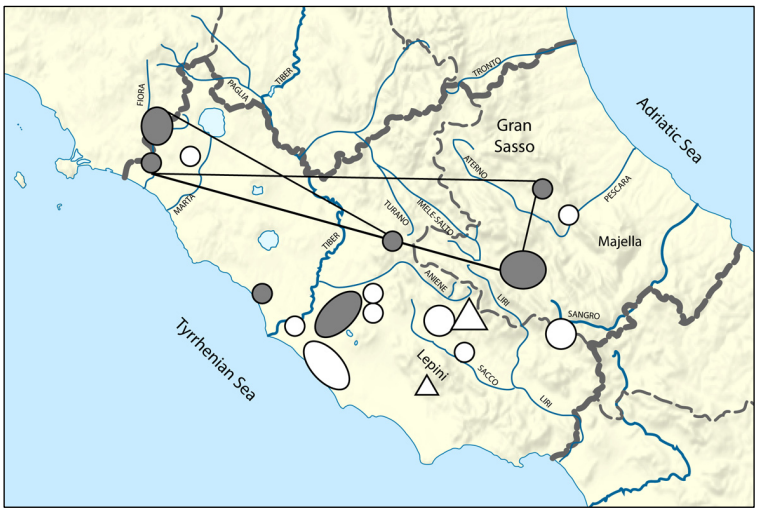

Figure 7.6: map (adapted from http://commons.wikimedia.org/wiki/File:Italy_map-blank.svg) showing the regional 'typo-network' of subphase BA1B in Abruzzo and Lazio [compiled after Cocchi Genick 1998; Belardelli et al. 2007; Ialongo 2007].

At the same time, the issue of chronological resolution concerning BA1B ceramics in Abruzzo and Lazio (Figure 7.6) should be addressed, which was raised in the context of the

[257] Different from the preliminary publications (Cerqua 2009, 2010), the presence of EBA1 ceramics at SELVA DEI MULI is no longer mentioned in the final publication (Cerqua 2011).

FUCINO BASIN (§7.1.2). On the scale of Central Italy as a whole (§3.2.1) the 'typo-network' of subphase BA1B gives the impression of an extension of the close-knit network focused on Tuscany to southern Abruzzo (Figure 3.2), in line with the spatial distribution of 'horizon II' hoards (§4.4.2). Ialongo's classification (2007) has not extended this 'typo-network' in Abruzzo and Lazio (Figure 7.6), apart from connecting all open-air sites in the FUCINO BASIN to the first one in the ATERNO-TIRINO cluster (§7.1.2), the latter already connected in Cocchi Genick's synthesis (§3.2.1; Figure 3.2). The lack of ceramics, hence assemblages, that can be attributed specifically to subphase BA1B, diminishes its chronological value. Moreover, the interior, intermontane sense of connectivity that its 'typo-network' conveys in Abruzzo and Lazio (Figure 7.6), complements the 'coastal' sense of connectivity in the 'typo-network' of the preceding phase (Figure 7.5). Based on the chronological value of subphase BA1B in Tuscany (§3.2.1; Figure 3.2), the interior sense of connectivity in Lazio and Abruzzo can be regarded as a later addition. It seems to highlight the emergence of a route that followed the left bank of the TIBER river, by-passing northern Lazio (and the 'coastal' axis), which was already linked to the proliferation of metalwork produced in Tuscany (§4.4.2).

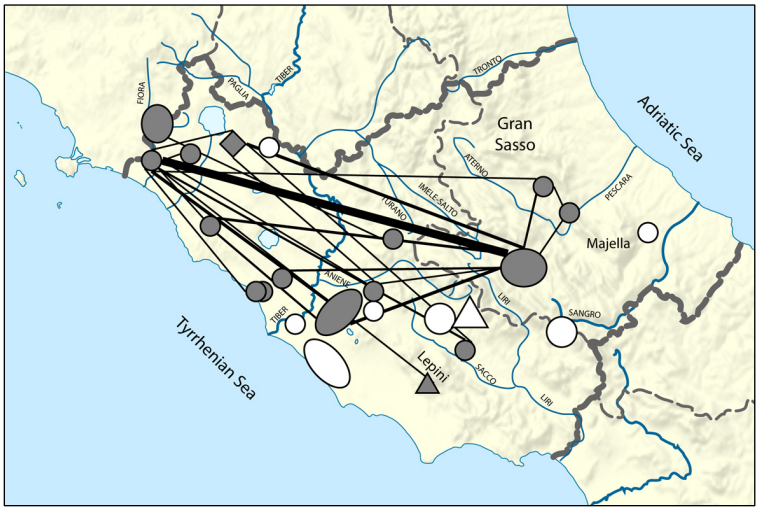

Figure 7.7: map (adapted from http://commons.wikimedia.org/wiki/File:Italy_map-blank.svg) showing the regional 'typo-network' of subphases BA1A, BA1 & BA1B in Abruzzo and Lazio [compiled after Cocchi Genick 1998; Belardelli et al. 2007; Ialongo 2007].

The 'collapsed' EBA1 'typo-network' (Figure 7.7) that, in addition, incorporates vessel types that are dated generically [subphase BA1], does not change the overall impression of EBA1 connectivity in Abruzzo and Lazio, as discussed so far (Figures 7.5 & 7.6). The role of the FUCINO BASIN as a nodal area in cross-APENNINE connectivity is underscored (Figure 7.7), consistent with the cross-APENNINE spatial distribution of EBA1 cave use, circumscribed to southern Lazio, intermontane and 'coastal' Abruzzo (§6.1.4; Figure 6.2). At the same time, this proxy for EBA1 regional connectivity in Abruzzo and Lazio (Figure 7.7) corroborates the role of northernmost Lazio in supra-regional connectivity (§3.2).

7.2.2 EBA2 connectivity

In general, the overview of the distributions of open-air sites on micro-regional to regional scales in Abruzzo and Lazio (§7.1) showed a diachronic trend of increasing numbers, as well as a more widespread occurrence, between EBA1 and EBA2. This is consistent with the diachronic patterns of the proliferation of metalwork deposition (§4.4.3) and cave use (§6.1.4). On a supra-regional scale, EBA2 'typo-networks' in Central Italy as a whole showed a stronger sense of connectivity beyond Tuscany than in EBA1 (§3.2.1), both in terms of vessel types (Figure 3.3) and handles (Figure 3.4). It was argued that increased connectivity in Central Italy was linked to an area of metalwork production in southern Tuscany (§4.1.2; §4.4.3). The regional EBA2 'typo-network' (Figure 7.8) shows that the basic structure of social interaction between Tuscany and Lazio is preserved in the persistent role of northernmost Lazio as a nodal area in supra-regional connectivity. In particular, the connecting role of the main EBA1, 'Bell Beaker' assemblages (TORRE CROGNOLA; FOSSO CONICCHIO) was taken over by the new supra-regional cult place at LAGO DI MEZZANO (§7.1.3).

The EBA2 'typo-network' in Abruzzo and Lazio conforms to the trend of increased cross-APENNINE connectivity in Central Italy (§3.2.1). Despite the lack of well-dated open-air sites in 'coastal' Abruzzo (§7.1.1), it shows that the two major cult places at caves (GROTTA SANT'ANGELO; GROTTA DEI PICCIONI) were implicated in regional connectivity (Figure 7.8). On the Tyrrhenian side, the focus in regional connectivity shifted away from the EBA1 coastal axis (Figure 7.7) towards the

interior in EBA2 (Figure 7.8). This diachronic pattern is consistent with the 'interior' impression of connectivity in the 'typo-network' of subphase BA1B in Abruzzo and Lazio (Figure 7.6) and strengthens the chronological value and past reality of subphase BA1B (see above). The increase in connectivity is underscored by the addition of new intermontane open-air sites in EBA2 (Figure 7.8) to the two persistent, BA1B places (NAVELLI; L'ARDINO) (Figure 7.6). The same seems implied by the start of trajectories of cave use (RIPARO LILIANA; GROTTA DELLE STIFFE) in the intermontane region outside the FUCINO BASIN in EBA2 (§6.1.2). The FUCINO BASIN itself persisted as the main node in regional cross-APENNINE connectivity, linking to southern Abruzzo, by way of the ATERNO-TIRINO cluster (§7.1.2; Figure 7.8). This contrasts with the reconstruction of a shift of the main cross-APENNINE axis in metalwork exchange networks towards the north, away from the FUCINO BASIN (§4.4.3), but this could derive from the present lack of composition analyses of EBA2 axes in this part of the research area (§4.3.2).

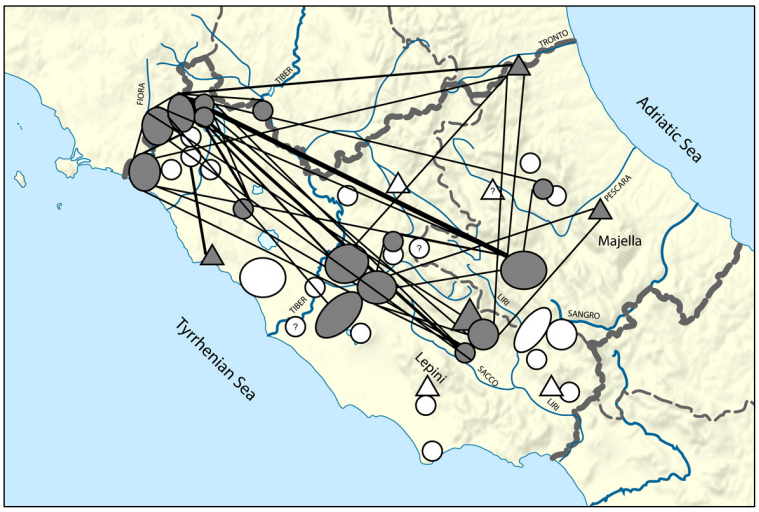

Figure 7.8. map (adapted from http://commons.wikimedia.org/wiki/File:Italy_map-blank.svg) showing the regional EBA2 'typo-network' in Abruzzo and Lazio [compiled after Cocchi Genick 1998; Belardelli et al. 2007; Ialongo 2007].

Connectivity between the FUCINO BASIN and southern Lazio probably followed two main routes. One was connected to the UPPER LIRI valley into the province of Frosinone, arguably following Copper Age-EBA1 patterns of mobility (see above). Another axis of connectivity seems to have followed a route that led more directly into 'northern' southern Lazio (Figure 7.8), as a result of the overall increase in intermontane activity, starting in subphase BA1B (see above), as well as the shift in settlement patterns in 'northern' southern Lazio (§7.1.4).

The impression of EBA2 connectivity in 'coastal' Lazio derives predominantly from ceramics in open-air assemblages, rather than caves,[258] and is, by consequence, linked to changing settlement patterns. These network changes entail the reconstructed emergence of a larger settled community in northernmost Lazio, probably (partly) originating from Tuscany (§7.1.3), and the shift from the south to the north of the LOWER ANIENE valley in 'northern' southern Lazio (§7.1.4). The emergence of these settled EBA2 communities coincided with the shift of the main axis in connectivity from the coast in the Copper Age-EBA1 (see above) to the interior (Figure 7.8), following the 'interior' sense of BA1B connectivity (Figure 7.6). This scenario of changing settlement patterns and connectivity is underscored by the lack of EBA2 open-air assemblages in the coastal parts of northern Lazio (§7.1.3) and southern Lazio. In the latter region (§7.1.4) EBA2 open-air sites show a predominantly 'interior' distribution connected with the LOWER ANIENE, SACCO and MIDDLE-LOWER LIRI valleys (Figure 7.8). Such a lack of open-air sites leaves the wealth of EBA2 metalwork in the 'coastal' parts of the region (§4.2.3) outside or on the margins of the 'typo-network', spatially dissociated from open-air sites and settled communities (Figures 7.8 & 7.9).

The dissociation of EBA2 metalwork from settlement patterns in 'coastal' Lazio recalls the intermediate position of hoards with respect to cultural groups in Central Italy as a whole (§3.2.2; §4.1.2). Here the chronologically enigmatic "Luni Tre Erici-Norchia" style of decorated ceramics should be recalled, as it shows a distribution in northern Lazio that could fill the 'coastal' gap to a large extent (Figure 7.9). As argued, the limited character of the respective assemblages, predominated by decorated ceramics, is not necessarily consistent with the presence of settled communities. Instead, a scenario in terms of occasional acts of ceramics deposition was put forward (§7.1.3), akin to metalwork deposition (Figure 7.9). In this context, the emergence of a cult place at PIAN SULTANO in EBA2

[258] This follows from the generally limited character of cave assemblages in northern and southern Lazio (§6.1.3).

(§6.1.3) was probably linked to social interaction on a regional, if not supra-regional scale, including exchange of metalwork (Figure 7.9) and secondary burial (§5.2).[259] The supra-regional connotation of this cult place can be deduced from its connections to the major cult place at LAGO DI MEZZANO and beyond (Figure 7.8), as well as the northernmost occurrence of a vessel type attributed to the Southern Italian EBA2 facies of "Palma di Campania" (Figure 7.9). Further assemblages with this type of 'non-local' ceramics from Campania (TENUTA RADICICOLI DEL BENE-ACCORRABONE; COLLE TASSO; GROTTA DEL CANE) follow the 'interior' distribution of EBA2 open-air sites in southern Lazio, apart from an isolated fragment (ORTUCCHIO-BALZONE 1) in the FUCINO BASIN (Figure 7.9).

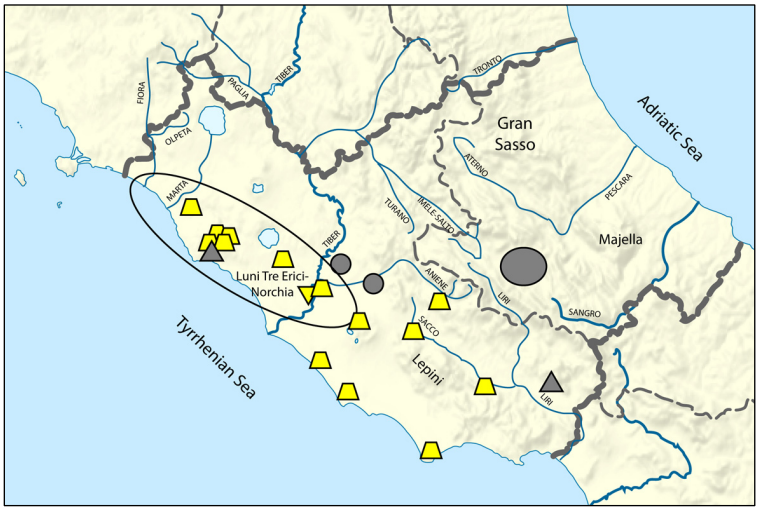

Figure 7.9: map (adapted from http://commons.wikimedia.org/wiki/File:Italy_map-blank.svg) showing the distributions of so-called "Luni Tre Erici-Norchia" decorated ceramics, assemblages with "Palma di Campania" ceramics (in grey) and EBA2 metalwork from 'coastal' Lazio (in yellow).

As such, the distribution of "Palma di Campania" style ceramics follows the interior sense of EBA2 connectivity in southern Lazio (Figure 7.8), but at the same time outlines the larger 'coastal' area in the provinces of Rome (RM) and Latina (LT) that, at present, from which substantial evidence for EBA2 open-air sites is absent (Figure 7.9). The 'capillary' distribution of 'non-local' EBA2 ceramics from Campania diffuses the impression of a cultural boundary between the larger spheres of Central and Southern Italy, perpendicular to the APENNINES, based on the presence of axes of Southern Italian type in southern Abruzzo and southernmost Lazio (§4.4.3). It highlights the possibility that the larger area outside the sphere of connectivity in 'coastal' Lazio and from which settled communities are absent (Figure 7.8), served as a 'border zone' where metalwork deposition was prolific (Figure 7.9). If so, the 'unsettled' area was used occasionally (perhaps seasonally) for activities that involved a considerable degree of mobility on the part of communities settled elsewhere, including intercommunal interaction. The issue of mobility related to seasonal subsistence strategies, such as hunting and pastoralism, as well as its role in social interaction, will be discussed in more detail following the analysis of faunal samples (§7.4). As a conclusion to the diachronic overview of regional connectivity and settlement patterns and as a prelude to the discussion of the specifics of open-air assemblages (§7.3), I will make a brief comparison with the wealth of detail in the "Palma di Campania" heartland.

Bronze Age Pompeii: a cautionary tale

The EBA2 cultural landscapes that have been unveiled a few hundred kilometres to the south in Campania provide a sharp contrast with the current state of knowledge about EBA open-air sites and settlement patterns in Abruzzo and Lazio (§7.1). The cultural landscapes buried by the Avellino eruption of SOMMA-VESUVIUS (§3.4) include roads, agricultural plots with plough marks, human and animal footprints and several settlements (Albore Livadie 1993; Guzzo et al. 2003; Zevi 2004, 857-864; Giampaola et al. 2007, 2007a; Passariello et al. 2009, 2010). Excavations in two such settlements have been published in a preliminary form, one at Nola to the northeast of the volcano (Albore Livadie 2002a, 2002b; Albore Livadie & Vecchio 2003, 2005a, 2005b; Albore Livadie et al. 2006; Castaldo et al. 2007; Costantini et al. 2007; De Caro 2003, 572-575; Lubritto et al. 2006; De Grossi Mazzorin & Rugge 2007) and the other at Afragola to the northwest (Sampaolo 2005, 676-679; Nava 2006, 616-619, 2007, 240-245; Laforgia et al. 2007, 2009; Di Vito et al. 2009; Matarazzo et al. 2010). It is

[259] In this respect, Di Gennaro et al. (2002, 677) recognise typological affinities between one of the EBA2 vessels from PIAN SULTANO and the (unpublished) open-air assemblage from GROTTINI DI ROTA [#108], the latter arguably linked to the EBA2 axe hoard (ROTA) in the TOLFA MOUNTAINS (§4.2.3).

tempting to use the abundance of detailed information from this micro-region as a template for adjacent regions, such as southern Lazio (e.g. Alessandri 2007, 197-201). However, there is currently no substantial evidence in larger parts of this region to presume a situation of year-round occupation in large settlements (§7.1.4; Figure 7.8; cf. Gianni 1991). In comparison with the excavated EBA2 house assemblages in Campania, the scarcity and limited extent of open-air assemblages presently known from Abruzzo and Lazio is significant. For comparison, house assemblages at NOLA reportedly consist of more than a hundred (complete) ceramic vessels (Albore Livadie 2002a).[260] In order to reconstruct villages similar to NOLA, larger amounts of ceramics (including fine wares) should be available on the surface than currently known from Abruzzo and Lazio, irrespective of post-depositional activity and abandonment practices that include the transfer of large parts of house assemblages to new settlements and/or ceramics deposition elsewhere (Van Rossenberg 2005b).[261] One element of comparison that seems to be preserved on the surface of Abruzzo and Lazio is the clustered occurrence of open-air sites (or settlements), as buried and revealed in the micro-region in the immediate vicinity of the VESUVIUS volcano. Although the distinctions between the larger Central and Southern Italian spheres highlight that a cultural boundary existed that was crossed in creating connectivity (see above), this does not mean that the details from one cultural landscape can simply be extrapolated to the other.

7.3 The specifics of open-air sites: polythetic classification and structural remains

There is a generalising tendency to presume that any open-air assemblage including EBA ceramics would have constituted a settlement. Here it will be argued that the attribution of site functions to EBA open-air assemblages is not so straightforward, even in the case of the few open-air sites that have been excavated and yielded structural remains. First, EBA open-air assemblages will be subjected to a polythetic classification of their constituent classes of objects and substances (§7.3.1). Cross-references will be made in the analysis to the similar classification of cave assemblages, which resulted in two polythetic groups, one of limited and another of more extensive or "full" assemblages (§6.2.1). Secondly, the range of evidence for structural remains from EBA open-air sites will be listed (§7.3.2) and discussed in the light of site distributions (§7.1) and regional connectivity and settlement patterns (§7.2). Taken together, these specifics of open-air sites can be used to substantiate notions of place related to settlements and changing settlement patterns.

7.3.1 Polythetic classification and interpretation

The majority of EBA open-air assemblages are limited to ceramics (Appendix 4) and for this reason have been excluded from the polythetic classification. This mainly concerns surface assemblages of limited scope, for which a site function in terms of settlement, seasonal site or act of ceramics deposition must in many cases remain elusive. In some cases, in particular multi-phase assemblages, another interpretive problem that affects the outcome of a polythetic classification, is that other classes of objects and substances (than ceramics) tend to be attributed to more extensive Copper Age and/or Middle Bronze Age assemblages, rather than to limited assemblages of EBA ceramics. Nonetheless, the sample of EBA open-air assemblages subjected to this polythetic classification is relatively large and by no means limited to excavated sites (Tables 7.7, 7.8 & 7.9). This highlights the potential that polythetic classification can be used to discriminate between types of place, irrespective of a distinction between excavated and surface assemblages (§2.1.2; §2.1.3).

The polythetic classification of EBA open-air assemblages results in more variability than in the case of cave assemblages (§6.2.1; Table 6.5). None of the open-air assemblages is characterised by as full a range of objects and substances as those in the polythetic group of "full" cave assemblages (§6.2.1). Moreover, the overall impression is that open-air assemblages are fuller in EBA1 (Table 7.7) than in EBA2 (Table 7.9). There is a strong possibility that such diachronic differentiation results from a research bias, in the sense that the sample includes excavated (late) Copper Age open-air sites with limited EBA1 assemblages, whereas excavations of EBA2 open-air sites are scarce. Another research

[260] This has discredited the initial interpretation of the excavated assemblage, consisting of 135 vessels, at the eponymous site of PALMA CAMPANIA as a production centre of ceramics (Albore Livadie 1980; Gianni 1991, 146) rather than a house assemblage.
[261] The assemblages from the larger settlement of AFRAGOLA, where abandonment practices are evident (Laforgia et al. 2009), have not been published yet. In addition, the lack of evidence for a tradition of using pits for deposition in EBA contexts (§7.3) means that assemblages had originally not been buried in archaeological features, which arguably should result in higher archaeological visibility on the surface.

bias concerns the overrepresentation of organic substances in excavations, arguably due to differentiation in preservation. This can explain the absence of human remains, bone & antler and shell artefacts, as well as botanical and faunal remains (§7.4), from surface assemblages. These and other objects and substances will be discussed briefly in the following overview and polythetic interpretation.

	date	ceramics	complete vessel(s)	miniature vessel	spindle-whoris	lithics (general)	arrowheads	querns & mullers	pebbles	bone & antler	shell artefacts	metalwork	botanical remains	faunal remains	human remains
Coastal Abruzzo (§7.1.1)															
[#6] Colle Longo (CH)	CA-EBA1?	X			X	X	X	X		X	X		?	X	X
Intermontane region (§7.1.2)															
[#9] Navelli (AQ)	EBA1-EBA2	X			?										
[#11] Le Castagne (AQ)	CA-EBA?	X				X	X							X	
[#16] Ortucchio-strada 28 (AQ)	CA-EBA1	X	?			?		?		?				X	
Northern Lazio (§7.1.3)															
[#61] Torre Crognola (VT)	CA-EBA2	X			X	X	X	X						X	
[#62] Poggio Olivastro (VT)	CA-EBA1?	X									?			?	
[#72] Piano della Selva (VT)	EBA1-EBA2	X			?	?						?			
[#74] Casale Barzellotti (VT)	CA-EBA1?	X				?									
[#92] Luni sul Mignone-Tre Erici (VT)	CA-EBA1?	X	?		X	X		X		X				X	X
[#96] Porciano (VT)	CA-EBA?	X			X	X	X								
[#110] Bufalareccia-quota 77 (RM)	CA-EBA?	X				?									
[#127] Palidoro (RM)	EBA1-EBA2	X			X	X	X								
[#130] Casale Campanella (RM)	CA-EBA?	X					?								
[#134] Maglianella di Sotto (RM)	CA-EBA2?	X	X		X	X								X	
Southern Lazio (§7.1.4)															
[#135] L'Ardino (RM)	EBA1-EBA2	X			X	X	X							?	
[#138] Cerreto-Quirani (RM)	CA-EBA?	X			?										
[#155] Casale di Torre Spaccata (RM)	EBA1	X				?	?								
[#156] Quadrato di Torre Spaccata (RM)	CA-EBA1	X	?			?								X	X
[#157] Piscina di Torre Spaccata (RM)	CA-EBA1?	X			X	?	?			?			X	X	?
[#158] Torre Spaccata-Fosso del Patrone (RM)	CA-EBA2	X				X	X		X				?	X	
[#160] Tenuta Quadraro-via Lucrezia Romana (RM)	CA-EBA1	X	?			X									
[#161] Unità Anagnina-punto II (RM)	CA-EBA?	X				?	?								
[#167] Casale del Cavaliere (RM)	CA-EBA1?	X		X	X	X		X					X	X	
[#169] Mole di Corcolle (RM)	CA-EBA1	X					X								
[#174] Quarto della Zolforatella (RM)	CA-EBA?	X				X	X								
[#175] Malafede-Valle Porcina (RM)	EBA1-EBA2?	X			X	X	X								
[#178] Fosso del Diavolo (RM)	CA-EBA?	X			?	X	X								
[#184] Selciatella (FR)	CA-EBA1?	X				X	X							X	
[#190] Selva dei Muli (FR)	CA-EBA2?	X	X		X	X	X	X						X	
[#196] Campovarigno (FR)	CA	X				X								X	
[#197] Val di Comino-S. Andrea (FR)	EBA1-EBA2	X				X		X					X		

Table 7.7: polythetic classification of (late) Copper Age [CA]-EBA1 open-air assemblages from Abruzzo and Lazio [nos. refer to and further details in Appendix 4].

Complete vessels and metalwork

Complete Copper Age vessels have been reported from features that are both funerary and non-funerary in character, especially in southern Lazio (§7.2.1). In the Copper Age-EBA1 context of SELVA DEI MULI [#190] (§7.1.4) complete vessels have been reported from the so-called perimeter ditch of the settlement and interpreted as the remains of abandonment practices (but cf. Cerqua 2011). Within the same cultural sphere, complete (or large fragments of) "Ortucchio" vessels, reported from the Copper Age-EBA1 assemblages of both ORTUCCHIO-STRADA 28 [#16] (§7.1.2) and TENUTA QUADRARO-VIA LUCREZIA ROMANA [#160] (§7.1.4), should perhaps be interpreted in similar terms, as (partly) deriving from abandonment practices, given the presence of structural remains (§7.3.2). However, the possibility of later acts of ceramics deposition at prior, Copper Age places cannot be excluded in the cases of LUNI SUL MIGNONE-TRE ERICI [#92] (§7.1.3) and QUADRATO DI TORRE SPACCATA [#156] (§7.1.4). At present, complete ceramics reported from MAGLIANELLA DI SOTTO [#134] lack chronological and contextual details (§7.1.3), also in relation to structural remains on site. Overall, complete vessels from

Copper Age-EBA1 open-air sites (Table 7.7) tend to be associated with structural remains, such as houses, pits and ditches, as well as with funerary structures.

By contrast, EBA2 open-air sites with complete (or larger parts of) vessels tend to be lake-side assemblages (Table 7.9). On the basis of their overall context, it was argued that (repetitive acts of) ceramics deposition at LAGO DI MEZZANO [#34] (§7.1.3) and LAGO ALBANO-VILLAGGIO DELLE MACINE [#173] (§7.1.4) was ritual in character. The presence of larger parts and/or complete vessels in the assemblage of TRASACCO 1 [#19] was interpreted as indicative of an abandonment context (§7.1.2), in combination with structural remains radiocarbon dated to EBA2 (§3.3) and the 'early' MBA1 gap in the trajectory of the site (cf. Ialongo 2007). On the other hand, complete (or large parts of) EBA2 vessels from the surface assemblage of ORTUCCHIO-STRADA 28 [#16] were interpreted as the remains of ceramics deposition, in the light of the limited range of vessel types (§7.1.2) and its distinctive location from the late Copper Age-EBA1 assemblage with structural remains (see above). The correlation of complete vessels with lake-side assemblages cannot entirely be ascribed to circumstances of preservation in a submerged environment. It was argued that the isolated find of (the larger part of) a decorated EBA vessel from TORNALE [#85] (Table 7.8) similarly constituted an act of ceramics deposition (§7.1.3).

	date	ceramics	complete vessel(s)	miniature vessel	spindle-whorls	lithics (general)	arrowheads	querns & mullers	pebbles	bone & antler	shell artefacts	metalwork	botanical remains	faunal remains	human remains
Northern Lazio (§7.1.3)															
[#85] Tornale (VT)	EBA		X												
[#97] Grotta Arnaro I (VT)	EBA?	X			?	?									
[#99] Tre Querce (RM)	EBA?	X				?	?								
[#109] Bufalareccia (RM)	EBA?	X			?										
[#114] Poggio Casalavio (RM)	EBA?	X				?									
[#118] Monte Abbadone (RM)	EBA	X				X		?							
[#119] Monte Abbadoncino (RM)	EBA	X				X									
[#129] Le Colonnacce (RM)	EBA?	X				?									
[#132] Tenuta di Castel Campanile (RM)	EBA?	X		?		?									
Southern Lazio (§7.1.4)															
[#199] Macciocco (FR)	EBA	X						X							
[#200] tra Colle Castagneto e Fontana Vitola (FR)	EBA	X				?	?								

Table 7.8: polythetic classification of generically EBA open-air assemblages from Abruzzo and Lazio [nos. refer to and further details in Appendix 4].

At the same time, occasional EBA acts of ceramics deposition at caves constituted a parallel practice, which was interpreted as ritual in character (§6.2). Taken together, ceramics deposition at caves and lakes highlights a common concern with making a connection with natural places, or more generally subsurface features (Chapter 8). It was argued that metalwork deposition can be linked to a similar (or the same) cosmological framework (§4.2.4). In this respect, it is significant that the pattern of the dissociation of metalwork from other classes of objects is broken by EBA2 lake-side assemblages (LAGO DI MEZZANO [#34]; LA CASARINA [#207]). The intersection of repetitive and ritual acts of metalwork and ceramics deposition is most pronounced at the former, a major EBA2 cult place in northernmost Lazio (§7.1.3). The overall lack of associations between complete vessels and structural remains, unlike Copper Age-EBA1 contexts (see above), could derive from a research bias due to a lack of excavations of EBA2 open-air sites. At present, however, the proliferation of pits as depositional contexts seems to constitute a new, MBA1 phenomenon (Van Rossenberg forthcoming), perhaps an emergent phenomenon at the EBA2-MBA1 transition (CONTRADA CAVONE [#192]). In the same micro-region, the direct association of the larger part of a vessel dated to the EBA2-MBA1 transition with a prior, Copper Age assemblage at CAMPOVARIGNO [#196] is unparallelled. Overall, there is no consistent evidence that complete vessels were associated with structural remains, which seems to corroborate the more intimate link of EBA2 ceramics deposition to natural places, similar to metalwork deposition (§4.2.4).

	date	ceramics	complete vessel(s)	miniature vessel	spindle-whorls	lithics (general)	arrowheads	querns & mullers	pebbles	bone & antler	shell artefacts	metalwork	botanical remains	faunal remains	human remains
Intermontane region (§7.1.2)															
[#7] Santo Stefano di Sessanio (AQ)	EBA2	X												?	
[#9] Navelli (AQ)	EBA1-EBA2	X			?										
[#10] San Salvatore (AQ)	EBA2	X			?		?								
[#16] Ortucchio-strada 28 (AQ)	EBA2	X	?												
[#19] Trasacco 1 (AQ)	EBA2	X	X											?	
Northern Lazio (§7.1.3)															
[#31] Monticello (VT)	EBA2	X				X									
[#32] Ragnatoro (VT)	EBA2	X						?							
[#34] Lago di Mezzano (VT)	EBA2	X	X	X								X		?	
[#39] Monte Saliette (VT)	EBA2	X					?								
[#51] Crostoletto di Lamone (VT)	CA; EBA2	X				?	?								
[#58] Monte di Cellere (VT)	EBA2	X				X	X								
[#61] Torre Crognola (VT)	CA-EBA2	X			X	X	X	X						X	
[#63] Monte Rozzi (VT)	EBA2	X			?	?									
[#69] Casale Carcarello (VT)	EBA2	X			?	?									
[#72] Piano della Selva (VT)	EBA1-EBA2	X			?	?						?			
[#127] Palidoro (RM)	EBA1-EBA2	X			X	X	X								
[#134] Maglianella di Sotto (RM)	CA-EBA2?	X	X		X	X								X	
Southern Lazio (§7.1.4)															
[#135] L'Ardino (RM)	EBA1-EBA2	X			X	X	X							?	
[#145] Tenuta Radicicoli Del Bene-Accorrabone (RM)	EBA2	X			?										
[#146] Tenuta Radicicoli Maffei-area 106 (RM)	EBA2	X	?												?
[#158] Torre Spaccata-Fosso del Patrone (RM)	CA-EBA2	X				X	X		X				?	X	
[#173] Lago Albano-Villaggio delle Macine (RM)	EBA2	?	X					?					?		
[#175] Malafede-Valle Porcina (RM)	EBA1-EBA2?	X			X	X	X								
[#187] Monte San Leonardo (FR)	EBA2?	X						X							
[#188] Fontana del Lago-Convento S. Giuseppe (FR)	EBA2	X											?		
[#190] Selva dei Muli (FR)	CA-EBA2?	X	?		?	?	?	?						?	
[#191] Borgo Sant'Angelo (FR)	EBA2?	X			X	X								X	
[#192] Contrada Cavone (FR)	EBA2?	X	X	X					X					?	
[#196] Campovarigno (FR)	EBA2?	X	X												
[#197] Val di Comino-S. Andrea (FR)	EBA1-EBA2	X				X		X					X		
[#198] Colle della Iugera (FR)	EBA2	X					X	X				?			
[#207] La Casarina (LT)	EBA2	X										X			

Table 7.9. Polythetic classification of EBA2 open-air assemblages in Abruzzo and Lazio.

Quernstones & mullers

Quernstones were not included in the range of objects and substances in "full" EBA cave assemblages, except for a muller from GROTTA DEI PICCIONI (§6.2.1). Both quernstones and mullers have been more regularly reported from EBA open-air sites. The correlated presence of quernstones and structural remains (COLLE LONGO [#6]; ORTUCCHIO-STRADA 28 [#16]; LUNI SUL MIGNONE-TRE ERICI [#92]; CASALE DEL CAVALIERE [#167]; SELVA DEI MULI [#190]) in excavated Copper Age-EBA1 open-air assemblages (Table 7.7) highlights that it can be used in the interpretation of surface finds as a positive indicator of year-round settlement. Then, the presence of quernstones in the large surface assemblage at TORRE CROGNOLA [#61] could argue in favour of the presence of a year-round settlement, contrary to the interpretation as a meeting-place put forward here (§7.1.3). Similarly, the presence of quernstones in several open-air assemblages in the VAL DI COMINO (Val DI COMINO-S. ANDREA [#197]; COLLE DELLA IUGERA [#198]; MACCIOCCO [#199]) corroborates the scenario of a settled EBA community this micro-region (Tables 7.7, 7.8 & 7.9), rather than exclusively seasonal sites (Carancini et al. 2003; Bruni et al. 2006). Still, it was argued that the overall context of Val DI COMINO-S. ANDREA [#197] singles it out as a cult place, rather than a settlement, in the micro-region (§7.1.4). In general, ritual treatment of quernstones seems to have taken place in Copper Age-EBA1 contexts of settlement themselves (Table 7.7), from which invariably fragments, not complete objects, have been reported (cf. Bradley 2005; Brück 1999a, 2006b; Hamon & Graefe 2008a; Watts 2008 on the ritual character of other forms of

treatment, such as deliberate fragmentation, and depositional patterns of later prehistoric quernstones, including contexts of settlement).

Apart from the VAL DI COMINO assemblages (see above), quernstones are scarce in EBA2 open-air assemblages (Table 7.9), thus preventing its use as an indicator of year-round settlement. It is unclear whether quernstones at the cult place of LAGO DI MEZZANO [#34] indicate depositional practices dated to EBA2 or MBA1. For comparison, the abundance of quernstones at LAGO ALBANO-VILLAGGIO DELLE MACINE [#173], from which this lake-side assemblage takes its name ("village of the quernstones"), probably postdates EBA2 (in line with the MBA1 bulk of the assemblage). Because of the prominence of quernstones at LAGO ALBANO-VILLAGGIO DELLE MACINE it has been interpreted as a production centre, including oversize and unfinished specimens, in direction association with a likely source of the volcanic substance that served as raw material (Chiarucci 1988). The later date does not exclude the possibility that the ALBAN HILLS had served as a Copper Age and EBA source of quernstones, but the central position of LAGO ALBANO-VILLAGGIO DELLE MACINE in MBA1 networks provides a better context for a peak in the production and/or deposition of quernstones (cf. Van Rossenberg forthcoming). Similarly, the surface assemblage of MONTE SAN LEONARDO [#187], including quernstone fragments (Table 7.9), is predominantly MBA1 in date. Overall, the scarcity of quernstones in EBA2 open-air assemblages (Table 7.9) could refer as much to a research bias due to a lack of excavations, as to their potentially 'time transgressive', relatively long use life, thereby ending up in MBA1 contexts of settlement and/or deposition, rather than EBA assemblages.

Spindle-whorls and arrowheads

The classes of objects that are most frequently reported from EBA open-air sites are spindle-whorls and arrowheads (Tables 7.7 & 7.9), both in surface and excavated assemblages. Given the seasonal connotation of both arrowheads (i.e. hunting) and spindle-whorls (i.e. wool-processing), they were not by definition exclusive to year-round settlements and can therefore not be used to discriminate the latter from seasonal sites. However, a distinctive pattern can be discerned in "full" cave assemblages in which spindle-whorls are present but from which arrowheads are absent (§6.2.1; Table 6.5). This distinctive pattern highlights the possibility that each class of objects did pertain to a separate sphere. Nonetheless, it is likely that co-presence of spindle-whorls and arrowheads at open-air sites (or in the context of a fuller assemblage) can be used as a stronger indication of the presence of a year-round settlement than of a seasonal site. By contrast, the presence of arrowheads (without spindle-whorls) could indicate seasonal sites, as hunting took place away from settlements. The presence of spindle-whorls (without arrowheads) could indicate a domestic context for wool-processing.

Co-presence of arrowheads and spindle-whorls in Copper Age-EBA1 (Table 7.7) has been reported for excavated assemblages (COLLE LONGO [#6]; PISCINA DI TORRE SPACCATA [#158]; MALAFEDE-VALLE PORCINA [#175]; SELVA DEI MULI [#190]), as well as surface assemblages (TORRE CROGNOLA [#61]; PORCIANO [#96]; FOSSO DEL DIAVOLO [#178]). The 'sole' presence of arrowheads is relatively frequent and concerns both excavations and surface assemblages.[262] The 'sole' presence of spindle-whorls has been less frequently reported from surface assemblages (than arrowheads), perhaps indicative of their association with Copper Age-EBA1 settlements.[263] Such putative patterns cannot be elucidated through a comparison with EBA2 open-air sites, since arrowheads and/or spindle-whorls are not as frequently included in these assemblages (Table 7.9).

Co-presence has only been reported from excavated EBA1-EBA2 assemblages (PALIDORO [#127]; L'ARDINO [#135]), as well as an EBA2 surface assemblage (SAN SALVATORE [#10]). In these particular instances (§7.1.2; §7.1.3; §7.1.4) the presence of a year-round settlement cannot immediately be substantiated in the respective (micro)regional contexts (§7.2). The 'sole' presence of arrowheads has been reported from a relatively limited number of EBA2 assemblages,[264] whereas the 'sole'

[262] *Arrowheads (excavations):* LE CASTAGNE [#11]; TORRE SPACCATA-FOSSO DEL PATRONE [#158]; SELCIATELLA [#184]. *Arrowheads (surface):* TRE QUERCE [#99]; CASALE CAMPANELLA [#130]; CASALE DI TORRE SPACCATA [#155]; UNITÀ ANAGNINA-PUNTO II [#161]; MOLE DI CORCOLLE [#169]; QUARTO DELLA ZOLFORATELLA [#174]. The focus in the distribution of arrowheads is on 'northern' southern Lazio, where a settled Copper Age-EBA1 was reconstructed (§7.1.4), arguably corroborating that these particular instances represent a seasonal pattern of activity (cf. Gianni 1991).

[263] *Spindle-whorls (excavations):* LUNI SUL MIGNONE-TRE ERICI [#92]; MAGLIANELLA DI SOTTO [#134]; CASALE DEL CAVALIERE [#167]. *Spindle-whorls (surface):* GROTTA ARNARO I [#97]; BUFALARECCIA [#109]. *Bobbin (surface):* CERRETO-QUIRANI [#138].

[264] *Arrowheads (surface):* MONTE SALIETTE [#39]; CROSTOLETTO DI LAMONE [#51]; MONTE DI CELLERE [#58]; COLLE DELLA IUGERA [#198]. Again, the main distribution of arrowheads is focused on micro-regions with reconstructed settled communities in northernmost Lazio (§7.1.3) and VAL DI CAMINO (§7.1.4).

presence of spindle-whorls is more frequent.[265] Overall, the numerical predominance of EBA2 assemblages with spindle-whorls over those with arrowheads seems to reverse the prior, Copper Age-EBA1 situation, which showed a predominance of arrowheads (see above). The question whether this coincided with a broad change in subsistence strategies between Copper Age-EBA1 and EBA2, will be addressed in the discussion of faunal samples (§7.4). In turn, this may help to inform the polythetic interpretation of arrowheads and spindle-whorls.

Lithics

A range of classes of stone objects (other than arrowheads and quernstones) have been subsumed here under the heading of lithics. In most cases these concern unspecified flint or obsidian artefacts, probably including additional arrowheads (not specified as such in publications). The generic class of 'lithics' is well-represented at EBA open-air sites (Tables 7.7, 7.8 & 7.9), especially if the tendency to consider lithics as pre-Bronze Age in date is taken into account. This tendency also concerns polished stone axes, which are generally dated to the Neolithic or Copper Age.[266] However, polished stone axes have also been reported from Copper Age-EBA1 open-air assemblages, both excavated (CASALE DEL CAVALIERE [#167]; MALAFEDE-VALLE PORCINA [#175]; SELVA DEI MULI [#190]) and from the surface (TORRE CROGNOLA [#61]; GROTTA ARNARO [#97]; UNITÀ ANAGNINA-PUNTO II [#161]), as well as perhaps one EBA2 assemblage (CROSTOLETTO DI LAMONE [#51]). An earlier date seems likely in the case of those open-air sites with a substantial Copper Age assemblage, but persistent use of stone axes in EBA cannot be excluded, on a par with copper or 'early' bronze axes (§4.3).[267] On the other hand, the functional interpretation of stone axes is contradicted by the absence of complete objects and the predominance of greenstone as a raw material (CROSTOLETTO DI LAMONE, GROTTA ARNARO, UNITÀ ANAGNINA-PUNTO II; SELVA DEI MULI).[268] These characteristics could highlight a practice of deliberate fragmentation, deposition and/or 'treasuring' of a select group of ancestral substances in EBA contexts, similar to the recurrent presence of stone axes in MBA assemblages (Van Rossenberg forthcoming). The absence of stone axes from EBA and later cave assemblages (§6.2.1) strengthens their connotation with open-air locations at deposition, similar to the dissociation of metalwork, including axes, from caves (§4.2.4).

Organic remains

In all likelihood a research bias can explain the limited presence of bone & antler and shell artefacts in excavated Copper Age-EBA1 assemblages (Table 7.7), as opposted to their current absence from EBA2 open-air assemblages (Table 7.9). Similarly, botanical remains are circumscribed to a limited number of excavated assemblages (Tables 7.7 & 7.9). By contrast, faunal remains have been reported more frequently (Tables 7.7 & 7.9) and their signatures will be used to shed light on the issue of year-round versus seasonal site functions (§7.4). Finally, the presence of human remains in EBA open-air assemblages (§5.1.4) is limited to excavated sites, mainly dating to Copper Age-EBA1 (Table 7.7: COLLE LONGO [#6]; LUNI SUL MIGNONE-TRE ERICI [#92]; QUADRATO DI TORRE SPACCATA [#156]; PISCINA DI TORRE SPACCATA [#157]) and perhaps to EBA2 (Table 7.9: TENUTA RADICICOLI MAFFEI-AREA 106 [#146]). Unfortunately, these predominantly disarticulated human remains have generally not been radiocarbon dated (yet), to distinguish between interpretations in terms of the curation of ancestral substances or the remains of EBA people. Still, it strengthens the scenario that low archaeological visibility of EBA funerary practices is linked to above ground primary burial and secondary treatment of human remains (Chapter 5). Low archaeological visibility of such instances of disarticulated human remains is probably enhanced by the overall lack of excavations of EBA2 open-air sites. Still, their absence from excavated lake-side assemblages seems to show that funerary practices were dissociated from this particular type of open-air site.

---

[265] *Spindle-whorls (excavations):* NAVELLI [#9]; TENUTA RADICICOLI DEL BENE-ACCORRABONE [#145]. *Spindle-whorls (surface):* MONTE ROZZI [#63], CASALE CARCARELLO [#69], "TRA COLLE CASTAGNETO E FONTANA VITOLA" [#200]. *Bobbin (surface):* PIANO DELLA SELVA [#72].

[266] At least in some cases the prior history of open-air sites (as listed in Appendix 4) is mainly based on the presence of lithics, including polished stone axes, thus perhaps falsely creating a deeper history of EBA places.

[267] Perhaps the concentration of polished stone axe fragments in the surface assemblage of TORRE CROGNOLA [#61] should be juxtaposed with its reconstructed role in metalwork exchange (§4.4.1; §7.2).

[268] The raw material of the axe fragment found at MALAFEDE-VALLE PORCINA [#175] is not specified and cannot be surmised from the black-and-white illustration (Gioia et al. 2007, 866 [fig. 1D], 867).

	date	house(s) and/or ancillary structures	wattle-and-daub and/or floor fragments	semi-subterranean structure	pebble or stone pavements	(living) floor	fire-place	post-holes or small pits	pits	wooden posts	stone cairn	stone walls or structure
Coastal Abruzzo (§7.1.1)												
[#6] Colle Longo (CH)	CA-EBA1?		X									
Intermontane region (§7.1.2)												
[#11] Le Castagne (AQ)	CA-EBA?			X								
[#16] Ortucchio-strada 28 (AQ)	CA-EBA1				X							
[#19] Trasacco 1 (AQ)	EBA2							X				
Northern Lazio (§7.1.3)												
[#33] Monte Senano (VT)	EBA2										X	
[#34] Lago di Mezzano (VT)	EBA2?									?		
[#38] Poggi del Mulino (VT)	EBA2		?									
[#39] Monte Saliette (VT)	EBA2?				?			?				
[#45] Prato di Frabulino (VT)	EBA2?											?
[#48] Prato Pianacquale (VT)	CA; EBA2?						X	X				
[#92] Luni sul Mignone-Tre Erici (VT)	CA-EBA1?				?	X						
[#100] Monte Ramiano (RM)	EBA?					?						
[#103] Vicarello (RM)	EBA?										?	
[#134] Maglianella di Sotto (RM)	CA-EBA2?					?	?					
Southern Lazio (§7.1.4)												
[#145] Tenuta Radicicoli Del Bene-Accorrabone (RM)	EBA2		?	?								
[#156] Quadrato di Torre Spaccata (RM)	CA-EBA1	X										
[#157] Piscina di Torre Spaccata (RM)	CA-EBA1?	X										
[#158] Torre Spaccata-Fosso del Patrone (RM)	CA-EBA2				?							
[#160] Tenuta Quadraro-via Lucrezia Romana (RM)	CA-EBA1	X			X	?		X	X			
[#167] Casale del Cavaliere (RM)	CA-EBA1?	X					X	X				
[#173] Lago Albano-Villaggio delle Macine (RM)	EBA2?				?			?		?		
[#175] Malafede-Valle Porcina (RM)	EBA1-EBA2?					X		X				
[#183] Colle Montarozzo (RM/FR)	EBA2?		?									
[#184] Selciatella (FR)	CA-EBA1?				X			X				
[#185] I Pantani (FR)	CA-EBA1?						?					
[#188] Fontana del Lago-Convento S. Giuseppe (FR)	EBA2											X
[#190] Selva dei Muli (FR)	CA-EBA2?	X						X	X			
[#191] Borgo Sant'Angelo (FR)	EBA2?						X					
[#192] Contrada Cavone (FR)	EBA2?								X			
[#193] Tremeletto (FR)	EBA2?				X							

Table 7.10: overview of structural remains and features in (late) Copper Age [CA]-EBA2 open-air assemblages from Abruzzo and Lazio [nos. refer to and further details in Appendix 4].

7.3.2 Structural remains and features

At present, evidence for complete houses (or smaller structures) in Abruzzo and Lazio is only known from EBA open-air sites with substantial Copper Age assemblages (Table 7.10). There is a strong possibility that these structures are predominantly Copper Age and not so much EBA1, let alone EBA2 in date. On the one hand, this gap in EBA archaeological records is due to the overall scarcity of excavations of open-air sites. On the other hand, the kinds of structural remains presently known from EBA archaeological records show a certain ephemerality, which could hamper preservation. These concern predominantly features on the surface, such as pebble pavements and so-called 'living floors' (Table 7.10). Apart from limited in numbers, excavations of EBA open-air sites are limited in extent and have, at present, only yielded limited numbers of posts and post-holes that, as a consequence, do not add up to full-fledged houses. Moreover, larger features (2-6m) dug into the ground (so-called "fondi di capanna"), traditionally interpreted as houses, are virtually absent from excavated EBA open-air sites (Table 7.10). This casts considerable doubt on the interpretation of the "fondi di capanna" reported from the VALLE DELLA VIBRATA as potentially EBA in date, rather than Neolithic or Copper Age (§7.1.1). It should be recalled that a parallel change can be discerned in funerary contexts, which

arguably changed from man-made subsurface structures of Copper Age tradition to more ephemeral, surface contexts of burial (Chapter 5).

The lack of pits (beyond post-hole size) at EBA open-air sites is even more striking (Table 7.10), with the exception of those with a substantial Copper Age assemblage (TENUTA QUADRARO-VIA LUCREZIA ROMANA [#160]; SELVA DEI MULI [#190]) and a single EBA2 vessel incorporated in a MBA1 context of deposition (CONTRADA CAVONE [#192]). For instance, the single pit from TENUTA QUADRARO-VIA LUCREZIA ROMANA [#160] reportedly contained charcoal and ceramics and in all likelihood refers to an act of deposition.[269] This virtual absence contrasts with the specific use of pits for deposition in EBA cave assemblages. As it concerns caves with deep deposits, it was argued that this practice engaged with the ancestral connotation of these places (§6.2).[270] Apart from the supra-regional cult place at LAGO DI MEZZANO in northernmost Lazio (§7.1.3), substantial evidence is available for EBA acts of deposition in association with subsurface features in the open-air. Such instances include the stone cairn associated with exposed outlets at LAGO DI BOLSENA (MONTE SENANO [#33]) that served as a focus for ceramics deposition (§7.1.3), the collection of complete EBA2 vessels in a natural depression at LAGO ALBANO-VILLAGGIO DELLE MACINE [#173], the man-made structure of limestone blocks incorporating a concentration of ceramics (FONTANA DEL LAGO-CONVENTO DI SAN GIUSEPPE [#188]) and the charred cereal remains at the bottom of a natural depression that subsequently served as a focus for deposition of ceramics and quernstones (VAL DI COMINO-S. ANDREA [#197]) (§7.1.4). The selection of natural places for deposition should be understood in the wider context of contemporary cave use (Chapter 6) and metalwork deposition (§4.2.4), highlighting a more general, cosmological concern with the subsurface that became more pronounced in EBA2 (Chapter 8).[271]

EBA settlements: research and cultural biases

The main research bias that hampers a clearer understanding of the specifics of EBA settlements in Abruzzo and Lazio, is a lack of excavations of open-air sites. Whereas EBA1 assemblages tend to derive from open-air sites with substantial Copper Age assemblages, excavations of EBA2 open-air sites are even more rare. Nonetheless, polythetic classification and interpretation, including surface assemblages, shows patterns of slight differentiation between Copper Age-EBA1 and EBA2 open-air sites, as well as cave assemblages (§7.3.1). Although it remains to be seen whether such diachronic differentation pertains to (past) cultural biases or follows from research biases, it is at least consistent with the overall impression of discontinuity in trajectories of open-air sites and settlement patterns between EBA1 and EBA2 (§7.1; §7.2). In the case of the limited evidence for EBA structural remains (see above), a research bias seems a plausible explanation, given the overall lack of extensive excavations. At the same time, the possibility that a cultural bias in terms of a lack of man-made subsurface structures and features has consequences for the structural properties of EBA archaeological records, cannot be excluded.[272]

Another scenario affecting archaeological visibility of settlements that has to be taken into account, is a potentially higher degree of residential mobility in EBA than before in the Copper Age. For comparison, low archaeological visibility of structural remains at the turn of the third to second millennium BC is a characteristic of archaeological records in other European regions, too, and has been debated in such terms (e.g. Brück 1999; Arnoldussen & Fontijn 2006). The issue of seasonal (and other forms of) mobility will be addressed in more detail in the analysis and comparison of Copper Age and EBA faunal samples (§7.4). Finally, distinctive abandonment practices could have resulted in a 'depletion' of EBA open-air assemblages, with respect to fuller Copper Age assemblages.[273] The

[269] An overview of Copper Age traditions of place-making through pits in the context of settlements (and caves) is beyond the scope of this thesis.

[270] Undated articulated burials in association with Copper Age settlements could highlight a similar principle, if EBA in date (§5.1.3).

[271] A very specific (untestable) scenario explains the lack of man-made subsurface features as a 'taboo' on breaking the earth for other purposes than deposition. Such a heightened sensitivity with respect to the physical landscape could have derived from significant environmental changes (§3.4), perhaps enhancing the notion of the physical landscape as a living entity, and from increasing human impact in creating surfaces by land reclamation for new fields and settlements.

[272] For instance, it could mean that EBA settlements resulted predominantly in (buried) surface assemblages, rather than assemblages that were originally buried in archaeological features, with corresponding differentiation in preservation and archaeological visibility.

[273] For this reason, the EBA2 Pompeii situation at NOLA (§7.2) cannot be taken for granted as the average house assemblage to be discovered upon excavation.

presence of such cultural biases that would have resulted in low archaeological visibility of EBA settlements can to some extent be corroborated by making a cross-reference to the overall increase in archaeological visibility of depositional contexts associated with natural places (see above), dissociated from settlements. Arguably, the overall increase in the number of depositional contexts highlights that significant parts of EBA house assemblages were (re)distributed over physical and cultural landscapes, rather than circumscribed to one or two places (i.e. the original settlement and cemeteries) in the Copper Age situation.

In this context, repetitive acts of ceramics and metalwork deposition at the cult place of LAGO DI MEZZANO (§7.1.3) is a special case, constituting a node in supra-regional connectivity (§3.2; §7.2). Different from such a 'collection' of objects and substances in a depositional zone, there is a possibility that occasional, isolated acts of ceramics deposition in the open air constituted a more widespread phenomenon in EBA cultural landscapes, parallel to ceramics deposition at caves (§6.2.1) and metalwork deposition (§4.2.4). This scenario applies to some, but by no means all of the extremely limited assemblages of EBA ceramics (Appendix 4). In addition, the special case of LAGO DI MEZZANO highlights how a research bias could have arisen from the selection for excavation of those open-air sites that are characterised by extensive assemblages and/or relatively complete ceramics on the surface. This selective focus has shown that EBA cases of 'rich' assemblages often tend to be ritual in character upon excavation (see above), but not shed light on settlements. If such a link between depositional practices and structural properties of archaeological records is valid, EBA settlements presently reside in the more ephemeral and limited surface assemblages, or rather in a range of assemblages distributed over cultural and physical landscapes.

7.4 Subsistence strategies and settlement patterns: the issue of mobility and connectivity

With a few exceptions, site function could not be attributed to EBA open-air assemblages on the basis of the polythetic classification alone (§7.3.1). As a consequence, the relationships between open-air sites and other places in EBA cultural landscapes and social networks, which were postulated in the thick description of micro-regional to regional settlement patterns (§7.1) and the diachronic comparison of regional connectivity (§7.2), to a large extent remain unsubstantiated. This section entails another element of 'multi-sited' comparison on regional to supra-regional scales that is based on the analysis of the evidence available for subsistence strategies, i.e. faunal and botanical samples from cave and open-air assemblages. Unfortunately, the number of botanical samples (§7.4.3) is constrained by the lack of extensive excavations of EBA open-air sites, as well as features (§7.3.2), but also a lack of systematic sampling. Overall, this section will therefore be focused on faunal samples, in an attempt at substantiating the degree of Copper Age-EBA mobility. It entails a diachronic comparison of the presence or absence of so-called 'signatures' (i.e. high proportions of particular species) that are commonly linked to seasonal strategies, such as pastoralism (§7.4.1) and hunting (§7.4.2), and will spill over in a more general discussions of mobility patterns in relation to (supra)regional connectivity (§7.4.4).

7.4.1 Husbandry or herding: pastoralist signatures?

Pastoralism as a subsistence strategy has traditionally been regarded as a seasonal practice linked to mobility away from settlements, generally with the implication of connectivity between lowland and upland, or coastal and intermontane regions in the Italian peninsula and the wider Mediterranean (cf. Barker 1989; Maggi et al. 1990/1991; Barker & Grant 1991; Barker 1995b, 1999). The role of caves in such mobility patterns has been demonstrated for the Neolithic onwards, although the focus tends to lie on substantiating pastoralist use of individual sites, based on the presence of a 'pastoralist signature' (i.e. the predominance of sheep/goat[274]) in faunal samples and, more recently, dung deposits (cf. Boschian 2000; Boschian & Montagnari-Kokelj 2000; Iaconis & Boschian 2007; Mlekuz 2007; Di Fraia & Tiberio 2008; Angelucci et al. 2009; Mlekuz 2009). A comparative, 'multi-sited' approach that includes open-air sites as the other side of the coin is rare (e.g. Mlekuz 2007). This does not only leave unaddressed the question to what extent faunal samples from cave assemblages are representative of subsistence in general, especially in the light of the ritual character of cave use since the Neolithic onwards (Chapter 6), but also the postulated distances covered in mobility patterns unsubstantiated. To

[274] 'Sheep/goat' will be used consistently, as in most cases sheep and goat have not been (and cannot be) separated.

resolve these issues, faunal samples from cave assemblages should be weighed against samples from open-air assemblages. For this reason, a discussion of faunal samples from caves (Chapter 6) was postponed to this section. Due to the relative scarcity of faunal samples from EBA contexts in Abruzzo and Lazio, the analysis will rely heavily on diachronic comparison with Copper Age samples.

Copper Age-EBA1

Faunal samples from EBA1 assemblages almost invariably derive from sites with substantial Copper Age assemblages, which confuses chronological resolution. Nonetheless, a recurrent feature of Copper Age and/or EBA1 samples is the predominance of sheep/goat over other domestic species, i.e. cattle and pig (Tables 7.11 & 7.12). Although the pattern itself is relatively clear-cut, it cannot be interpreted unequivocally as a widespread 'pastoralist signature' for several reasons. The overall pattern is largely based on small samples [n<100], with the exception of a few larger samples. Moreover, most samples have only been reported in terms of numbers of skeletal elements rather than minimum number of individuals (MNI). Consequently, the taphonomical issue of differential representation of skeletal elements between species (either cultural or postdepositional in character) can not be addressed in terms of MNI. For instance, in some samples for which details in terms of both numbers of skeletal elements and MNI are available, the proportions of domestic species can be contradictory (see below). Still, a 'pastoralist signature' can be discerned with more confidence in samples with significantly a higher proportion of sheep/goat [>60%], in combination with lower proportions of cattle and pig [<20%]. At the same time, a sample with more balanced proportions of these domestic species [25-40% each] does not necessarily exclude seasonal mobility of one or the other. The following interregional comparison brings these considerations to bear on exceptions to the overall pattern of sheep/goat predominance.

	date	sample size	domestic	cattle	sheep-goat	pig	dog	horse	references
Coastal Lazio									
Grotta Sant'Angelo (TE) [layers 7-5]	CA-EBA2	n=62	76%	17% [n=8] MNI=2	46% [n=21] MNI=3	37% [n=17] MNI≈2	[n=1]	-	Wilkens 2000 [replacing Wilkens 1996]
[rescue excavations 2004: from stratigraphical context and pits]	Neolithic-Bronze Age	n=42 indet.= 172	67%	22% [n=6]	56% [n=15]	22% [n=6]	[n=1]	-	Di Fraia & Tiberio 2008, 481-483
[destroyed layers]		n=268 indet.= 836	49%	13% [n=16]	50% [n=64]	37% [n=48]	[n=3]	-	
Grotta dei Piccioni (PE) [layers 10-9]	CA	n=58	55%	7% [n=2]	48% [n=14]	45% [n=13]	[n=3]	-	Cremonesi 1976, 233
[layer 8]	EBA1-EBA2?	n=9	78%	14% [n=1]	57% [n=4]	29% [n=2]	-	-	Cremonesi 1976, 295
[layer 7]	EBA [and/or MBA1]	n=20	85%	40% [n=8]	35% [n=7]	10% [n=2]	-	-	
[stratified and unstratified Bronze Age deposits (total)]	Bronze Age	n=292	78%	20% [n=45]	55% [n=124]	25% [n=55]	[n=4]	-	
[#6] Colle Longo (CH)	CA-EBA1?	n=137 indet.= 660	96%	12% [n=16]	68% [n=88]	20% [n=25]	[n=3]	-	Di Fraia 2003, 276
Intermontane region									
Le Coste (AQ)	CA	-	84%	21%	43%	36%	-	-	Radi 2003, 247
[#16] Ortucchio-strada 28 (AQ)	CA-EBA1	n=274	20%	37% [n=20]	37% [n=20]	26% [n=14]	[n=2]	-	Wilkens 2000 [replacing Radmilli 1977, 358; Wilkens 1991]

Table 7.11: overview of the proportions of domestic species (>40% highlighted) in faunal samples from (late) Copper Age [CA]-EBA1 cave and open-air assemblages in 'coastal' Abruzzo and the intermontane region.

In 'coastal' Abruzzo (Table 7.11) the 'pastoralist signature' [68% sheep/goat] in the sample from the open-air site of COLLE LONGO [#6] is more pronounced than the proportion of sheep/goat in the samples from the two caves with the fullest assemblages (GROTTA SANT'ANGELO; GROTTA DEI PICCIONI).[275] In addition, the Copper Age-EBA1 pattern in the region as a whole is a higher incidence of pig [>20%], with respect to cattle [<20%], as exemplified by the high proportion of pig [45%] in the Copper Age sample from GROTTA DEI PICCIONI (Table 7.11).[276] The overall similarity of the samples from the two caves in terms of the proportions of the three main domestic species highlights their joint distinctive character, with respect to the one sample from an open-air site (COLLE LONGO). Although the latter shows an order of domestic species similar to samples from caves, it shows distinctive proportions of sheep/goat (i.e. higher) and pig (i.e. lower) and lacks a 'hunting signature' (§7.4.2). Such differentiation is consistent with the scenario that these caves (GROTTA SANT'ANGELO; GROTTA DEI PICCIONI) were primarily cult places (Chapter 6).[277] Taken together, one group of participants in ritual cave use at GROTTA DEI PICCIONI could have embedded this activity in a Copper Age pattern of pastoralist mobility that started from COLLE LONGO, given its connectivity with the UPPER PESCARA micro-region in EBA1 (§7.1.1).

Faunal samples in the intermontane region are limited to two excavated open-air sites in the FUCINO BASIN (Table 7.11). Distinctive from the pattern in 'coastal' Abruzzo, neither of these samples (LE COSTE; ORTUCCHIO-STRADA 28 [#16]) shows a clear-cut 'pastoralist signature' [<43%], whereas both pig [>26%] and cattle [>21%] are well-represented. The more or less balanced proportions of domestic species discount the presumption that intermontane subsistence relied heavily on pastoralism. Rather, the substantial presence of cattle corroborates the scenario of a settled Copper Age community in the larger FUCINO micro-region (§7.1.2). Still, the faunal sample from ORTUCCHIO-STRADA 28 [#16] is characterised by a peculiar overall proportion of domestic species [20%], with respect to wild species, that is unparalleled in other Copper Age-EBA1 samples (Tables 7.11 & 7.12). This distinctive characteristic will be discussed in more detail in the context of 'hunting signatures' (§7.4.2).

'Coastal' Lazio has yielded the majority of Copper Age-EBA1 faunal samples under consideration (Table 7.12). In northern Lazio, the largest samples (POGGIO OLIVASTRO [#62]; MACCARESE-FIANELLO-LE CERQUETE[278]) follow the pattern of sheep/goat predominance [>50%]. The third largest (LUNI SUL MIGNONE-TRE ERICI [#92]) is predominated by cattle [54%] but its chronology is debated (§7.1.3). Attribution of part of the assemblage and faunal sample to a later, MBA1 context (after Cocchi Genick 2001, 2002) could resolve the unparalleled predominance of cattle. On the other hand, the substantial proportion of cattle [29%] in the sample with a 'pastoralist signature' [61% sheep/goat] from POGGIO OLIVASTRO [#62] in northernmost Lazio should not be overlooked. By contrast, pig predominates over cattle as the second domestic species at the Copper Age settlement (MACCARESE-FIANELLO-LE CERQUETE), situated further to the south in the coastal plain to the north of the TIBER mouth (§7.1.3). In this case, the excavator has suggested that the predominance of sheep/goat [~50%] over pig and cattle (Table 7.12) results from pastoralism as a specialised subsistence strategy.[279] In turn, this is regarded as corroboration of the instrumental role of pastoralist practices in Copper Age connectivity (e.g. Manfredini et al. 2000, 214 [fig. 5]), in this case following the coastal axis in the region, with the MACCERESE community as an intermediary between northernmost and southern Lazio (§7.2; Figure 7.5). Alternatively, the predominance of cattle in limited faunal samples from the surface (MACCARESE-SITO H, SITO I & SITO K) could highlight complementary subsistence strategies at sites in the vicinity and the sharing of resources within a micro-regional community.

[275] Contrary to the tendency to refer only to the cumulative Bronze Age sample from GROTTA DEI PICCIONI, all relevant faunal samples have been detailed here, irrespective of their chronological resolution.
[276] There is a possibility that higher proportions of domestic pig are inflated by wild boar. In the case of GROTTA SANT'ANGELO, for instance, 10 of the 23 elements concerned have been attributed specifically to domestic pig [n=4] and wild boar [n=6]. The latter [n=6] have been excluded from the proportion of domestic pig [n=17] (Table 7.11). The highest proportion of cattle [40%] in one the lower Bronze Age levels [layer 7] at GROTTA DEI PICCIONI (Table 7.11) concerns a small sample which is probably EBA2-MBA1 in date.
[277] At GROTTA SANT'ANGELO (Wilkens 1996) all of the determined skeletal elements of domestic animals concern feet and legs (including one shoulder blade). This could indicate that particular portions of animals were selected for deposition, arguably not brought to the cave as living animals.
[278] Table 7.12 only includes part of the faunal sample (i.e. 1993 excavations and surface finds) after the summary in Manfredini 2005a (not the final publication of 2002).
[279] Cf. Manfredini (2005a, 22) taking the absence of direct evidence for both agriculture and hunting into account. There is no evidence for use wear on flint artefacts related to agriculture (cf. Conati Barbaro & Lemorini 2000).

	date	sample size	domestic	cattle	sheep-goat	pig	dog	horse	references
Northern Lazio									
[#61] Torre Crognola (VT)	CA-EBA2	-	-	X	X	X	-	-	Pennacchioni 1977
[#62] Poggio Olivastro (VT)	CA-EBA1?	n>105	~100%	29% [n=30]	61% [n=64]	10% [n=11]	-	-	De Grossi Mazzorin & Minniti 1995
[#92] Luni sul Mignone-Tre Erici (VT) [B=Calc.]	CA-EBA1? [and/or MBA1]	n=66	92%	54% [n=32]	31% [n=18]	15% [n=9]	[n=2]	-	Gejvall 1967
Maccarese-Fianello-Le Cerquete ["sito J"] (RM) [excavation 1993]	CA	n=247	~100%	12% [n=29] MNI=3	53% [n=131] MNI=16	35% [n=87] MNI=9	MNI=5	MNI=1	Curci & Tagliacozzo 1994, 1995; De Grossi Mazzorin & Minniti 1995
[surface finds]		n=206 indet.= 243	~99%	27% [n=55] MNI=10	49% [n=99] MNI=13	24% [n=50] MNI=15	[n=1]	-	Ruffo 1993
Maccarese-"sito H" (RM) [surface finds]	CA-EBA1?	n=8 indet.=6	88%	80% [n=4] MNI=1	-	20% [n=1]	-	[n=2] MNI=1	Ruffo 1993
Maccarese-"sito I" (RM) [surface finds]	CA	n=4 indet.=6	100%	100% [n=4] MNI=2	-	-	-	-	Ruffo 1993
Maccarese-"sito K" (RM) [surface finds]	CA	n=6	100%	33% [n=2] MNI=1	50% [n=3] MNI=2	17% [n=1]	-	-	Ruffo 1993
Southern Lazio									
[#156] Quadrato di Torre Spaccata (RM)	CA-EBA1?	n=55	100%	35% [n=19]	56% [n=31]	9% [n=5]	-	-	De Grossi Mazzorin & Minniti 1995 [replacing Clark 1984a]
[#157] Piscina di Torre Spaccata (RM)	CA-EBA1?	n=835	98%	36% [n=295] MNI=17	49% [n=401] MNI=20	15% [n=118] MNI=11	[n=7] MNI=2	-	Gianni 1991, 133-134 [replacing Clark 1984b]
[#158] Torre Spaccata-Fosso del Patrone (RM)	CA-EBA2 [and/or MBA1]	n=98 indet.= 524	100%	58% [n=56]	36% [n=35]	6% [n=6]	[n=1]	-	De Grossi Mazzorin 2008
Osteria del Curato-via Cinquefrondi (RM) [pit]	CA	n=143 indet.= 143	99%	5% MNI=2	88% MNI=16	5% MNI=2	[n=2] MNI=1	-	Anzidei et al. 2007a
[total]		-	~100%	38%	>50%	9%	MNI=2	-	Anzidei et al. 2007, 485-488
Casale Massima (RM)	CA	n=104	-	X	predo-minant	scarce	-	-	Gioia et al. 2007a
[#184] Selciatella (FR)	CA-EBA1?	n=93 indet.= 159	98%	60% [n=54] MNI=13	20% [n=18] MNI=9	20% [n=18] MNI=5	[n=1]	-	Facciolo & Fiore 2000
[#190] Selva dei Muli (FR)	CA-EBA2?	-	-	X	X	predo-minant	-	-	Biddittu & Segre Naldini 1981, 38
[#196] Campovarigno (FR) ["saggio A"-lower level]	CA	-	-	X	predo-minant	X	[n=1?]	-	Nicosia & Cerqua 2009, 417

Table 7.12: overview of the proportions of domestic species (>40% highlighted) in faunal samples from (late) Copper Age [CA]-EBA1 cave and open-air assemblages in 'coastal' Lazio.

Most of the faunal samples from southern Lazio (Table 7.12) are predominated by sheep/goat, with the exception of a 'time-averaged' sample (TORRE SPACCATA-FOSSO DEL PATRONE [#158]) and an assemblage destroyed by fire (SELCIATELLA [#184]), both predominated by cattle [58-60%].[280] In 'regular' samples (QUADRATO DI TORRE SPACCATA [#156]; PISCINA DI TORRE SPACCATA [#157]; OSTERIA DEL CURATO-VIA CINQUEFRONDI) that are predominated by sheep/goat [>49%], cattle

[280] The SELCIATELLA [#184] sample is predominated by teeth (Facciolo & Fiore 2000), among which those of cattle may stand out, with respect to other species, due to differential preservation.

represents the second domestic species [>35%], prevailing over pig [<15%] (Table 7.12), consistent with the presence of settled Copper Age-EBA1 communities in 'northern' southern Lazio (§7.1.4). Still, a sample from a specific feature at OSTERIA DEL CURATO-VIA CINQUEFRONDI (Table 7.12) stands out for its 'pastoralist signature' [88%]. This particular feature [US 215] has been radiocarbon dated to the final phase of the Copper Age (§3.3; Table 3.6) on the basis of one of the carbonised beans from the same context (Anzidei et al. 2007a). It concerns a pit with one or more burning events that, arguably, refer to (or included) food depositions with a ritual character. Ritual treatment can be found in two other pits at the same site with partially articulated sheep/goat, which have been interpreted as food depositions, found in the vicinity of (human) burials (Anzidei et al. 2007, 483).

At the same time, given the total sample from OSTERIA DEL CURATO-VIA CINQUEFRONDI with a more modest proportion of sheep/goat [>50%] (Table 7.12), it strengthens a scenario of mobility patterns related to pastoralism that would have resulted in such a punctuated, arguably seasonal availability of sheep/goat, ending up in a large pit, at this particular Copper Age settlement-cemetery. Copper Age pastoralism presumably was confined to the 'coastal' region itself, outside the home range of settled communities, rather than connecting lowland and upland areas. Such a regional pattern could have linked 'northern' southern Lazio to the MACCARESE plain in the adjacent part of northern Lazio (see above) or to the 'southern' provinces of southern Lazio (and vice versa). Unfortunately, due to unfavourable preservation (Cerqua 2011), faunal samples from recent excavations at the Copper Age settlement of SELVA DEI MULI [#190] (§7.1.4) are not to be expected and can therefore not elucidate subsistence-related patterns of mobility and connectivity.

Dogs and horses

All of the larger Copper Age-EBA1 faunal samples include dog remains, generally in low numbers (Tables 7.11 & 7.12). The symbolical connotations of depositional practices that involve dogs in Central Italy have been recognised from the Neolithic onwards (cf. De Grossi Mazzorin 2001; Wilkens 2006). This interpretation can be extended to the dog remains in the samples from cave assemblages interpreted as cult places (GROTTA SANT'ANGELO; GROTTA DEI PICCIONI) in 'coastal' Abruzzo (Table 7.11), but not necessarily to dog remains reported from open-air assemblages. Nonetheless, dogs at the excavated Copper Age settlements in 'coastal' Lazio were included in burials and/or acts of deposition, in one case in direct association with a horse. At OSTERIA DEL CURATO-VIA CINQUEFRONDI in southern Lazio, several articulated dog burials have been found in the context of larger features (i.e. a pit and a ditch). One of the dogs had been subjected to secondary practices of disarticulation (i.e. removal of the head), similar to some of the articulated human burials at the same site (Anzidei et al. 2007, 485-487 [fig. 7A]). Unfortunately, dog remains in faunal samples are seldom specified as to which skeletal elements are represented, so that potential patterns in terms of selective, secondary treatment as in the case of human remains (§5.2.1) cannot be established.

The second case of dog burials concerns two puppies that actually close an act of deposition of a horse (except for its head and right front leg) in a pit at the Copper Age settlement of MACCARESE-FIANELLO-LE CERQUETE in northern Lazio (Curci & Tagliacozzo 1994). A discrepancy exists in the series of radiocarbon dates for the pit with the structured deposition of animals between the significantly (and consistently) younger dates of the horse bones [OxA-6211: 2435±70 BP; OxA-6368: 2625±60 BP; OxA-6952: 2510±110 BP (Hedges et al. 1998, 448-449)] and the date of a control sample of charcoal from the same context, contemporaneous with other settlement features [OxA-8058: 4525±45 BP] (Manfredini et al. 2000, 205). Stratigraphical evidence seems to corroborate a Copper Age date (Hedges et al. 1998, 448-449), but an Iron Age act of structured deposition at a prior place is not such an unlikely scenario that it can be left undiscussed (as the excavators do). Nonetheless, the presence of horse in this particular micro-region is substantiated by remains from a Copper Age surface assemblage (MACCARESE-"SITO H") in the immediate vicinity (Table 7.12). Apart from these instances, horse remains are not represented in faunal samples from Copper Age-EBA1 open-air and cave assemblages (Tables 7.11 & 7.12). The presence of the earliest horse remains in an overtly ritual act of deposition underscores the rarity of this novelty. At the same time, it argues against the widespread use of horses in Copper Age-EBA1 connectivity, irrespective of the potential of this innovation.

EBA2

It seems likely that the patterns that emerged from the comparison of Copper Age-EBA1 faunal samples (see above), are to a large extent based on the Copper Age parts of the respective assemblages. Although limited in number (Table 7.13), faunal samples from EBA2 assemblages will therefore be

discussed separately from potentially EBA1 assemblages, in an attempt at facilitating a diachronic comparison. In 'coastal' Abruzzo the larger samples from cave assemblages (GROTTA SANT'ANGELO; GROTTA DEI PICCIONI) are 'time-averaged' and cannot (but do not seem to) suggest a significant change in sheep/goat predominance (Table 7.11; see above).[281] Similar to cave assemblages, the 'pastoralist signature' [68% sheep/goat] in the sample from TRASACCO 1 [#19] in the FUCINO BASIN (Table 7.13) is 'time-averaged' and not necessarily valid for each phase of the Bronze Age, but arguably at least highlights sheep/goat predominance in EBA2, given Ialongo's extension (2007) of the trajectory of the site (§7.1.2). The most detailed EBA2 sample derives from one of the rock fissures at PIAN SULTANO (§6.1.3) in 'coastal' Lazio (Table 7.13) and, significantly, highlights the predominance of cattle [55%] and breaks the pattern of sheep/goat predominance. In the light of its EBA2-MBA1 date, it could corroborate the interpretation that the predominance of cattle in the 'time-averaged' samples from LUNI SUL MIGNONE-TRE ERICI [#92] and TORRE SPACCATA-FOSSO DEL PATRONE [#158] refers to later (i.e. EBA2-MBA1) rather than earlier (i.e. Copper Age-EBA1) patterns (see above).

	date	sample size	domestic	cattle	sheep-goat	pig	dog	horse	references
Intermontane region									
[#19] Trasacco 1 (AQ)	EBA2? [and/or MBA, LBA, FBA]	n=322	87%	24% [n=64]	68% [n=177]	8% [n=21]	[n=16]	[n=1]	Wilkens 1991; De Grossi Mazzorin & Minniti 2003
Northern Lazio									
[#34] Lago di Mezzano (VT)	EBA2-MBA1	-	-	X	X	X	-	-	Pacini & Palombo 1989
[#61] Torre Crognola (VT)	CA-EBA2	-	-	X	X	X	-	-	Pennacchioni 1977
Pian Sultano-'crepaccio 2' (RM)	EBA2-MBA1?	n=89 indet.= 311	82%	55% [n=39]	28% [n=20]	17% [n=12]	[n=2]	-	Di Gennaro et al. 2002, 676
Southern Lazio									
[#158] Torre Spaccata-Fosso del Patrone (RM)	CA-EBA2 [and/or MBA1]	n=98 indet.= 524	100%	58% [n=56]	36% [n=35]	6% [n=6]	[n=1]	-	De Grossi Mazzorin 2008
[#191] Borgo Sant'Angelo (FR)	EBA2? [mainly MBA1]	-	scarce	scarce	scarce	scarce	-	-	Biddittu & Segre Naldini 1981, 42

Table 7.13: overview of the proportions of domestic species (>40% highlighted) in faunal samples from EBA2 assemblages in Abruzzo and Lazio [see Table 7.11 for caves].

The postulated increase in proportions of cattle, 'overtaking' sheep/goat, in EBA2 is in line with a regionally specific, secondary Copper Age-EBA1 pattern (Table 7.14). Cattle had been the second main domestic species in 'coastal' Lazio (Table 7.12), as opposed to pig in 'coastal' Abruzzo (Table 7.11). The intermediate position of the FUCINO BASIN in EBA connectivity (§7.2) is underscored by this secondary pattern, with the Copper Age sample (LE COSTE) linking to the 'pig' sphere on the Adriatic side (Table 7.11; Table 7.14) and the Copper Age-EBA1 sample (ORTUCCHIO-STRADA 28 [#16]) to the 'cattle' sphere on the Tyrrhenian side (Table 7.11; Table 7.14). Similarly, the extremely low proportion of pig [8%] in the 'time-averaged' sample from TRASACCO 1 [#19] (Table 7.13) seems linked to subsistence strategies in 'coastal' Lazio rather than 'coastal' Abruzzo (Table 7.14). The location of these main EBA sites (ORTUCCHIO-STRADA 28; TRASACCO 1) in the FUCINO BASIN to the southof the large lake (§7.1.2) seems to corroborate this sense of directionality.

Overall, the diachronic comparison remains unsubstatiated, however, since the postulated EBA2 patterns are largely based on faunal samples from cave assemblages (GROTTA SANT'ANGELO; GROTTA DEI PICCIONI; PIAN SULTANO), interpreted as cult places (Chapter 6). These are therefore not necessarily representative of subsistence in general. Reportedly, the faunal remains from the rock fissure (PIAN SULTANO) have been found predominantly in direct association with secondary burials

[281] Unfortunately, Wilkens (1996) does not report the samples from each of the three levels at GROTTA SANT'ANGELO separately.

(§5.2) and should be interpreted primarily as acts of food deposition (Di Gennaro et al. 2002, 676). This indicates that the ritual interpretation of dog remains (see above) can be extended to those in the PIAN SULTANO sample (Table 7.13). Whereas some of the dog remains in the 'time-averaged' sample from TRASACCO 1 are probably EBA2 in date, the horse remains (Table 7.13) in all likelihood are not. The proliferation of horse in Abruzzo and Lazio seems to have constituted a later, Middle Bronze Age phenomenon (§9.3.1), although equids are well-represented (second to bovids) among the animal footprints in the EBA2 deposits related to the Avellino eruption of VESUVIUS in Campania (Giampaola et al. 2007, 929).

	coastal Lazio	Fucino Basin	coastal Abruzzo
Copper Age-EBA1	sheep/goat cattle pig	sheep/goat cattle – pig	sheep/goat pig cattle
EBA2	cattle sheep/goat pig	sheep/goat? cattle – pig?	sheep/goat pig cattle

Table 7.14: evidence for patterns of regional differentiation in in the proportions of the main domestic species in Copper Age-EBA1 and EBA2 faunal samples from Abruzzo and Lazio.

Pastoralist mobility

The traditional reconstruction of separate, semi-nomadic pastoralist communities, also reliant on hunting (§7.3.2), in the Copper and Bronze Ages of the Italian peninsula is convenient in the sense that it can be used to cover long distances and fill gaps in archaeological records stretching between settled communities (e.g. Manfredini et al. 2000; Manfredini 2005a). Such a scenario is based on a dichotomy between sedentary and mobile people and, on the one hand, implies that the majority of people in year-round settlements did not move beyond their home range and, on the other hand, that any activity requiring mobility over long distances would have been the prerogative of a group of people already on the move for other purposes (e.g. Peroni 1971). The stereotypical mode of visual representation in advocating the mediating role of semi-nomadic pastoralist communities over long distances is to overlay later prehistoric site distribution maps with ethnohistorically documented patterns of mobility related to transhumance (e.g. Manfredini et al. 2000, 214 [fig. 5]).[282] Although the latter can be used to inform understanding of late prehistoric communications routes, the problem is that the same subrecent transhumance routes are applied indiscriminately to any later prehistoric period or phase, irrespective of (potential) network changes that are evident in the archaeological record.

The basic pattern of sheep/goat predominance in Copper Age-EBA1 faunal samples that seldom shows a 'pastoralist signature' in a strict sense (see above), argues against separate pastoralist communities. It highlights that pastoralist practices were in general well-integrated in the annual cycle related to mixed-farming, including husbandry of several species, in settled communities. This does not deny pastoralist practices their seasonal character, related to mobility away from settlements. However, it should be stressed that these did not necessarily entail a pattern of mobility that extended far beyond the micro-regional sphere of settled communities, contrary to a scenario of transhumant pastoralism proper, connecting coastal and mountainous regions. For instance, the punctuated availability of sheep/goat in the pit at OSTERIA DEL CURATO-VIA CINQUEFRONDI (Table 7.12) definitely highlights seasonality, as well as mobility on a regional scale at most (see above). Unfortunately, this scenario is in all likelihood mainly based on the Copper Age parts of faunal samples and cannot be substantiated by making a diachronic comparison, given the scarcity of faunal samples from EBA2 open-air sites (Table 7.13).

Nonetheless, the impression is that EBA2 subsistence strategies changed with respect to the Copper Age-EBA1 pattern. Arguably, sheep/goat predominance became less pronounced in 'coastal' Abruzzo (see above) and was replaced by cattle predominance in 'coastal' Lazio (Table 7.14). This could indicate that mobility patterns changed accordingly, perhaps with smaller herds of sheep/goat in the immediate sphere of settled communities, following mobility patterns over even shorter distances than the Copper Age pattern. For comparison, the animal pen with a group of pregnant goats buried by

[282] This particular map includes ethnohistorically documented mobility patterns in the Italian peninsula related to both sheep/goat and cattle. Although mobility of cattle cannot be excluded, this species tends not to be predominant in Copper Age and EBA faunal samples from Abruzzo and Lazio (see above) and arguably pertained to sedentary contexts.

the Avellino eruption (§3.4) in the EBA2 village of NOLA in Campania, shows that there and then this part of the livestock was well-integrated in settlement structure (Albore Livadie & Vecchio 2005a, 2005b).[283] At the same time, the change in connectivity between EBA1 and EBA2 should be taken into account, with the apparent increase in the exploitation of the intermontane region (§7.2). In this context, the ATERNO-TIRINO cluster of open-air sites that connected the intermontane FUCINO BASIN to coastal Abruzzo in EBA2 (§7.1.2; Table 7.3), was situated in the 'Adriatic' sphere where sheep/goat predominance persisted (Table 7.14). This corroborates the interpretation that the ATERNO-TIRINO cluster probably refers to the remains of seasonal, pastoralist practices, originating from the UPPER PESCARA micro-region, rather than a year-round settled community (§7.1.2). In the same context of the new pattern of connectivity between coastal and mountainous regions (§7.2), it remains to be seen whether the change from sheep/goat to cattle predominance in 'coastal' Lazio (Table 7.14) can be related to a change in patterns of pastoralist mobility. In this respect, faunal samples from the settled EBA2 community postulated to the north of the LOWER ANIENE valley (§7.1.4) are eagerly awaited.[284]

7.4.2 Hunting patterns

As a subsistence strategy, hunting can be linked to patterns of mobility, arguably seasonal in character, similar to pastoralist practices (§7.4.1). The question is whether hunting and pastoralism would have been embedded in the same patterns of mobility, or were unrelated. To this end, the presence or absence of evidence for hunting and 'hunting signatures', i.e. high overall proportions of wild species [>20%] in faunal samples, will be discussed, as well as which wild species from a wider range are represented. Again, a distinction will be made between samples from Copper Age-EBA1 (Table 7.15) and EBA2 assemblages (Table 7.16), in order to make a diachronic comparison that is compatible with domestic species (§7.4.1).

Copper Age-EBA1

Three groups can be discerned on the basis of proportions of wild species in faunal samples from Copper Age-EBA1 assemblages. One is characterised by high proportions of wild species [>20%] and includes samples from cave assemblages in 'coastal' Abruzzo (GROTTA SANT'ANGELO; GROTTA DEI PICCIONI) and an unparalleled sample from ORTUCCHIO-STRADA 28 [#16] in the FUCINO BASIN with a clear-cut 'hunting signature' [80%] (Table 7.15). A second group includes all of the remaining open-air sites listed (Table 7.15) and is characterised by low proportions [<16%]. A third group includes faunal samples without wild species, invariably from open-air assemblages in 'coastal Lazio' (Table 7.12). Samples with extremely low proportions of wild species [<2%] are circumscribed to the same region (Table 7.15) and can be included in this third (rather than the second) group. Overall, distinctive proportions of wild species in Copper Age-EBA1 samples are to a large extent determined by depositional context (i.e. cave or open-air site) and regional differentiation. Therefore it makes sense to adopt a regional approach in establishing which wild species from a wider range are represented in faunal samples, while engaging with regional patterns in proportions of domestic species (Table 7.14).

The faunal samples from Copper Age-EBA1 cave assemblages in 'coastal' Abruzzo (GROTTA SANT'ANGELO; GROTTA DEI PICCIONI) are not only characterised by relatively high proportions, but also show the widest range of wild species, including several species of both large and small game (Table 7.15). This could highlight that hunting was incorporated in the sphere of periodic (seasonal) cave use and that it carried intercommunal and/or ritual connotations (Chapter 6). At the same, the wide range of species adds to the polythetically full character of these two cult places in particular (§6.2.1). By contrast, wild species are virtually absent (4%) from the COLLE LONGO [#6] sample, excluding the majority of species in the cave assemblages (Table 7.15). It shows that hunting remained outside the immediate sphere of this open-air site. The 'pastoralist' signature in the same sample (Table 7.11) shows that hunting and pastoralism were probably not connected, unless pastoral mobility linked COLLE LONGO to GROTTA DEI PICCIONI (§7.4.1). Samples from all of the three sites in 'coastal' Abruzzo include remains of molluscs, despite their inland location, and highlight connectivity to the

[283] At the same time, seasonality and pastoralist mobility are highlighted by the particular composition of the part of the stock that remained on site (and arguably those that would have been absent) at the time of the eruption. To some extent, these mobility patterns are corroborated by the lower number of footprints of sheep/goat, with respect to cattle and equids, in the deposits related to the eruption (Giampaola et al. 2007, 929).

[284] The fact that faunal remains are not even mentioned in the preliminary reports of the recent excavations at TENUTA RADICICOLI (Barbaro 2008; Barbaro & Di Gennaro 2008), in all likelihood follows from the (sub)disciplinary separation of zooarchaeological specialists, not their absence.

Adriatic coast and sea in patterns of mobility and subsistence (or the acquisition of the respective species as raw material).[285]

	date	% wild species	Red deer	Roe deer	Wild boar	Bear	Wild cat	Fox	Badger	Marten	Birds	Turtle	Other
Coastal Abruzzo													
Grotta Sant'Angelo (TE) [layers 7-5]	CA-EBA2	24%		3	6		1			1	4		Molluscs 4
[rescue excavations 2004: from stratigraphical context and pits]	Neolithic-Bronze Age	33%									X		Hare 1; Microfauna & birds 13
[destroyed layers]		51%	X		X	X	X		X	X	X		Hare; Rat; Amphibians; Microfauna
Grotta dei Piccioni (PE) [layers 10-9]	CA	45%	5	2			1	3		9	4		Dormouse 2
[layer 8]	EBA1-EBA2?	22%									1		Dormouse 1; Molluscs
[layer 7]	EBA [and/or MBA1]	15%	1								2		
[stratified and unstratified Bronze Age deposits (total)]	Bronze Age	22%	25	20			5		1	1	9		Dormouse 3
[#6] Colle Longo (CH)	CA-EBA1?	4%									1	1	Microfauna 2; Hare 1; Mollusc 1
Intermontane region													
Le Coste (AQ)	CA	16%	X					X			X	X	Fish
[#16] Ortucchio-strada 28 (AQ)	CA-EBA1	80%	209		7			2					Rabbit 1?
Northern Lazio													
[#61] Torre Crognola (VT)	CA-EBA2	-	X										Aurochs; Ibex; Mouflon?
[#62] Poggio Olivastro (VT)	CA-EBA1?	<1%						1?					Fish?; Molluscs?
[#92] Luni sul Mignone-Tre Erici (VT) [B=Calc.]	CA-EBA1? [and/or MBA1]	8%											Aurochs 5
Maccarese-Fianello-Le Cerquete ["sito J"] (RM) [excavation 1993]	CA	[scarce]											Molluscs
[surface finds]		<1%	1										
Maccarese-"sito H" (RM) [surface finds]	CA-EBA1?	12%										1	
Southern Lazio													
[#157] Piscina di Torre Spaccata (RM)	CA-EBA1?	2%	1	1								12	
Osteria del Curato-via Cinquefrondi (RM) [pit]	CA	1%			2?			1?			2		Carnivore 1?
[total]		<1%	2										
[#184] Selciatella (FR)	CA-EBA1?	2%	2										
[#190] Selva dei Muli (FR)	CA-EBA2?	abundant	XX										
[#196] Campovarigno (FR) ["saggio A"-lower level]	CA	-	X										

Table 7.15: overview of the proportion (>20% highlighted) and range of wild species in faunal samples from Copper Age-EBA1 assemblages in Abruzzo and Lazio [see Tables 7.11 & 7.12 for references and sample size].

[285] The shell fragment from COLLE LONGO concerns a *Trithon* (Di Fraia 2003, 275), whereas cockles of several species have been reported from GROTTA SANT'ANGELO [n=4] and GROTTA DEI PICCIONI [n=1]. Although worked pieces (i.e. perforated), the latter indicate exploitation of coastal or marine resources. The turtle fragment from COLLE LONGO is reported as a terrestrial species (Di Fraia 2003, 275).

Both samples from open-air sites in the intermontane FUCINO BASIN show higher proportion of wild species that is atypical for open-air sites in the 'coastal' regions (Table 7.15). Arguably, this reflects the distinctive environmental setting of (late) Copper Age communities settled in a closed intermontane basin.[286] In this respect, the evidence for the exploitation of resources in a lake environment in the assemblages from LE COSTE and ORTUCCHIO-STRADA 28 [#16] adds to the broad spectrum of subsistence strategies. In the case of the former, this concerns direct evidence in the form of the remains of birds, fish and turtles in the faunal sample (Radi 2003, 247). In the case of the latter, a prominent role for fishing has been reconstructed on the basis of the abundance of a 'specialised' class of ceramic objects, so-called 'fishing-net weights'.[287] The distribution of numbers of skeletal elements of wild species [16%] in the Copper Age sample (LE COSTE) is not specified, but the range of species overlaps with the open-air site in 'coastal' Abruzzo (COLLE LONGO [#6]), i.e. turtle and birds,[288] and the Copper Age-EBA1 sample in the vicinity (ORTUCCHIO-STRADA 28 [#16]), i.e. red deer and fox (Table 7.15). Overall, the exceptional 'hunting signature' [80%] in the sample from ORTUCCHIO-STRADA 28 [#16] is most intriguing (Table 7.15).

In particular, the predominance of red deer [76% of the total sample] requires further explanation. Overrepresentation [n=209] is not due to antler [n=15] as opposed to skeletal elements [n=194], which include the full range of body parts of red deer (Wilkens 1991, 148), and therefore the scenario that ORTUCCHIO-STRADA 28 was a production centre of antler artefacts can be excluded. Instead, red deer hunting as a specialised activity could have resulted from their punctuated availability, with the large intermontane lake incorporated in seasonal mobility patterns of this particular species. For instance, the possibility that mobility patterns of red deer had been affected by (and changed following) a lowering of lake-levels in the FUCINO BASIN (§3.4; §7.1.2), should be taken into account. As such, the 'hunting signature' from ORTUCCHIO-STRADA 28 does not necessarily question the common interpretation of this particular open-air site as a year-round settlement (§7.1.2), but the degree of 'specialisation' on a single species could highlight that the size of the intermontane lake-side community fluctuated seasonally and that people from elsewhere, i.e. 'coastal' communities (without evidence for hunting), participated in both hunting and fishing (see above). A connotation of intercommunal interaction could have been a significant dimension in the notion of prior place that persisted in the postulated use of the same site as a meeting-place for EBA2 ceramics deposition (§7.1.2) and, arguably, intercommunal food and drink consumption.

The virtual absence of evidence for hunting [generally 0-2%] in faunal samples from Copper Age-EBA1 open-air sites in 'coastal' Lazio is striking (Tables 7.12 & 7.15).[289] It highlights that hunting took place outside the sphere of settlements, contrary to the consistent presence of hunting equipment, i.e. arrowheads (§7.3.1; Table 7.7). Accordingly, the range of wild species is smaller in 'coastal' Lazio than elsewhere (Table 7.15). Red deer represents the main wild species that consistently ended up in settlements in 'coastal' Lazio as a whole, followed by turtle, and perhaps aurochs and marine resources (i.e. molluscs and fish) in northern Lazio.[290] Turtle was a significant element of the late Copper Age-EBA diet (cf. Vagnetti 2006; Morales Pérez & Sanchis Serra 2009), in the light of its relatively consistent presence in 'coastal' Lazio and Abruzzo, as well as the FUCINO BASIN (Table 7.15).[291] In turn, this pattern from open-air sites makes the absence of this species from "full" cave assemblages (see above) culturally significant.

[286] In terms of subsistence strategies, the interpretation of these open-air sites as settlements is mainly based on the balanced proportions of domestic species (Table 7.11). The respective excavations have yielded only indirect evidence for agriculture in the form of quernstones and some flint sickle elements (Radi 2003, 247-248).

[287] This class of objects has been recorded at several sites in the FUCINO BASIN dated to the Final Neolithic (Irti 2003, 264) and beyond, including the EBA2 'fishing spot' of TRASACCO-IL MULINO [#21] (§7.1.2).

[288] Pig as the second main domestic species (Table 7.11) also links LE COSTE to the Adriatic sphere (Table 7.14).

[289] The sample from SELVA DEI MULI [#190] for which a predominance of red deer prevailing, over domestic species, has been reported (Table 7.15), can unfortunately not be weighed against samples from recent excavations of the Copper Age-EBA1 settlement (§7.1.4; §7.3) due to unfavourable preservation (Cerqua 2011). The earlier excavators linked this signature to its perfect location as a hunting spot near a wetland place in the context of a forest (Biddittu & Segre Naldini 1981, 40-41). A subsistence based on hunting and pig raising has also been reconstructed for this location (Gianni 1991, 135-136 [fig. 23]).

[290] The relative scarcity of wild boar could partly result from their inclusion among domestic pig, without being specified as such in preliminary reports. Similarly, it is unclear whether the consistent presence of red deer is inflated by antler.

[291] A more recently reported faunal sample from a Copper Age-EBA (?) settlement (CASETTA MISTICI) from 'northern' southern Lazio (RM) also includes turtle remains [n=5] as the principal wild species, in addition to a single fox femur fragment (Cerilli et al. 2012, 200 [tab. I]).

EBA2

Although faunal samples from EBA2 assemblages are limited in number, including two cult places in northern Lazio, they can be used in a diachronic comparison with contextual and regional Copper Age-EBA1 patterns. The relatively wide range of species in the 'time-averaged' Bronze Age sample from TRASACCO 1 [#19] (Table 7.16) matches the Copper Age-EBA1 samples in the FUCINO BASIN (Table 7.15), including a relatively high proportion of wild species [13%] and the predominance of red deer (see above). Similar to the cave assemblages in 'coastal' Abruzzo (Table 7.15), the sample from the EBA2 rock fissure assemblage (PIAN SULTANO) in northern Lazio is characterised by a relatively high proportion of wild species [18%] (Table 7.16). Contrary to the interpretation of the presence of turtle at PIAN SULTANO as an intrusive element (Di Gennaro et al. 2002, 676), the Copper Age-EBA1 pattern (see above) and the regionally specific concern with this species (see below) highlights that turtle (shell) was selected for deposition at this cult place, together with roe deer, fox, hare and molluscs (Table 7.16). The presence of turtle at the cult place of LAGO DI MEZZANO [#34] underscores the ritual significance of this species in EBA2. The sample from BORGO SANT'ANGELO [#191] in southern Lazio is mainly MBA1 in date, but is included in this discussion for comparison, as an open-air site that has been interpreted as a seasonal site related to hunting. Its range of wild species is similar to EBA2 samples, although red deer and turtle stand out (Table 7.16).

	date	% wild species	Red deer	Roe deer	Wild boar	Bear	Wild cat	Fox	Badger	Marten	Birds	Turtle	Other
Intermontane region													
[#19] Trasacco 1 (AQ)	EBA2? [and/or MBA, LBA, FBA]	13%	35	2	3				1				Lynx 1; Rabbit 1
Northern Lazio													
[#34] Lago di Mezzano (VT)	EBA2-MBA1	-	X	X								X	
Pian Sultano-'crepaccio 2' (RM)	EBA2-MBA1?	18%		1				2				10?	Hare 1; Molluscs 2
Southern Lazio													
[#191] Borgo Sant'Angelo (FR)	EBA2? [mainly MBA1]	abundant	XX					X				abun-dant	Fish [scarce]; Dormouse [scarce]

Table 7.16: overview of the proportion (>20% highlighted) and range of wild species in faunal samples from EBA2 assemblages in Abruzzo and Lazio [see Table 7.13 for references and sample size and Table 7.15 for caves].

Hunting and mobility

It is common practice to mention hunting and pastoralism in one sentence, mainly in the context of the exploitation of mountainous environments, thereby subsuming these subsistence strategies under the same (seasonal) pattern of mobility and, by implication, interpreting them as embedded practices.[292] However, the virtual absence of wild species in faunal samples from open-air assemblages strongly suggests that hunting constituted a 'specialised' subsistence strategy separated from the sphere of settlements, except for the presence of arrowheads in the latter (Table 7.17). By contrast, pastoralist patterns of seasonal mobility were fully integrated, incorporating flocks in sedentary contexts at least seasonally (§7.4.1). The distinctive, relatively prominent presence of wild species in cave assemblages (see above) corroborates the ascription of hunting to a separate sphere. On the one hand, evidence for hunting in cave assemblages can be related to the selective nature of depositional practices at caves, especially those in question (GROTTA SANT'ANGELO; GROTTA DEI PICCIONI; PIAN SULTANO), all characterised by polythetically full (or fuller) assemblages (§6.2.1). This coincidence underscores that

[292] E.g. Chiarenza & Lambertini 2006, 143, 156, 164 on the Copper Age in Central and Northern Italy. However, these authors explicitly make a distinction between shorter ranges in the case of hunting and transhumance and long distances in the case of travel for the purpose of social interaction (Chiarenza & Lambertini 2006, 164).

faunal samples from caves should not necessarily be regarded as representative of subsistence in general. On the other hand, hunting and cave use were practices with overlapping spheres, both outside the immediate sphere of settlements, therefore intercommunal arguably by definition. This contextual pattern highlights the possibility that hunting and cave use were practices embedded in the same periodic pattern of mobility, not necessarily associated with pastoralist practices.

	Caves	Open-air sites
Hunting signature	higher proportions of wild species (>20%)	low proportions of wild species (or absent) (0-4%), except for the intermontane region
Range of species	wide range of species	limited range of species
Arrowheads	arrowheads absent	arrowheads present
Mobility and interaction	hunting in intercommunal sphere, arguably ritual and perhaps supra-regional	hunting outside domestic sphere (contrary to pastoralist practices); perhaps a food taboo

Table 7.17: evidence for contextual differentiation in the connotations of hunting based on patterns in faunal samples and the presence or absence of arrowheads in Copper Age-EBA1 and EBA2 assemblages from Abruzzo and Lazio.

The complementarity of faunal samples from open-air sites in the 'coastal' regions and the intermontane FUCINO BASIN, in terms of the presence and absense of wild species (Table 7.15), highlights the possibility that Copper Age-EBA1 mobility patterns related to hunting reached deep into the mountains, further than pastoralist practices.[293] In this respect, the absence of a 'pastoralist signature' in the sample from ORTUCCHIO-STRADA 28 [#16] argues against a connection between hunting and pastoralist practices as embedded practices in a single mobility pattern. The wider, intercommunal significance of hunting is underscored by the prominence of arrowheads as grave goods, also juxtaposed with early metalwork, in Copper Age burials, as an element in (idealised) notions of personhood in a framework of social connectivity (§5.2.2).[294] Arguably, this situates hunting in the intercommunal realm of exchange and connectivity over long distances.[295] In the light of these considerations, hunting can be regarded as a specialised activity that required mobility and engendered food consumption far outside the realm of settled communities, given the virtual absence of wild species in faunal samples from Copper Age-EBA1 open-air sites (Table 7.17). The underrepresentation of wild species follows a Neolithic pattern (cf. Robb 2007, 124-129) and could refer to an ingrained, 'ancestral' tradition. Perhaps notions of hunting even entailed a taboo (cf. Fowles 2008; Russell 2012, 28-44) on the consumption of wild species in settlements, given the overrepresentation of wild species in sites of ritualised practice, such as caves (Chapter 6).

Unfortunately, diachronic comparison is constrained by the scarcity of faunal samples from EBA2 open-air assemblages. The significance of turtle in 'coastal' Lazio persisted in EBA2, which is underscored by the presence of turtle in the range of wild species at cult places (LAGO DI MEZZANO; PIAN SULTANO). It contrasts with the absence of turtle from cult places at caves in 'coastal' Abruzzo (Table 7.15). Since, at present, evidence for hunting in EBA2 is only available from this set of cult places, the dissociation of hunting from settlements in the Copper Age-EBA1 pattern cannot be falsified, but its association with ritual contexts is corroborated (Table 7.17). These regional and supra-regional meeting places do highlight that at least some EBA2 hunting parties were intercommunal and entailed patterns of mobility over longer distances.[296] An extension of the diachronic comparison to

[293] Chiarenza & Lambertini (2006, passim) argue for similar implications of the spatial distribution of isolated finds of arrowheads along river valleys and/or in mountainous areas in Central and Northern Italy. *Contra* Chiarenza & Lambertini 2006, the transhumance scenario of pastoralist practices on an interregional, rather than a (sub)regional scale, was rejected (§7.4.1).

[294] Cf. Fokkens et al. 2008 on the interpretation of 'Bell Beaker' wrist-guards as part of idealised notions of personhood in continental Europe.

[295] As such, hunting can be regarded in the same social range as (ritual) warfare, and therefore it is probably better to speak of hunting/warfare in terms of a single complex of idealised personhood (cf. Harding 2007, chapters 3 & 4). For comparison, Chiarenza & Lambertini (2006) do not consider (ritual) warfare as a form of social interaction that requires mobility, contrary to (or implicitly adopting) the traditional stereotype of Copper Age people as shepherds and warriors ("Pastori e guerrieri", e.g. Negroni Catacchio 2006), not hunters.

[296] The buried EBA2 village at NOLA in Campania has yielded evidence for on-site production of so-called 'boar tusk helmets' (Albore Livadie 2002a; Albore Livadie et al. 2006). These have not been reported from EBA assemblages in Abruzzo and Lazio and seem to have been confined to the Southern Italian sphere. In the absence of EBA2 faunal samples, it remains to be seen whether part of the demand in northern Campania for produce from wild boar hunting was satisfied through exchange with neighbouring communities in southern Lazio.

include faunal samples from Middle Bronze Age assemblages will show that the contextual pattern of differentiation between caves and open-air sites persisted (Table 7.17), with the addition of lake-side cult places to the category caves (Van Rossenberg forthcoming).

7.4.3 Agricultural produce and wild fruits

Based on the overall lack of clear-cut 'pastoralist signatures' in Copper Age and EBA faunal samples, with some exceptions (§7.4.1) and the relatively consistent presence of quernstones (§7.3.1), it can be assumed that settled communities based on mixed-farming were predominant in Abruzzo and Lazio. At present, direct evidence in the form of botanical samples is scarce, not only due to a lack of excavations of EBA open-air sites, but also a lack of features in which differential preservation is high (§7.3.2). Botanical samples are virtually absent even from well-excavated Copper Age settlements (Table 7.18), not necessarily due to a lack of systematic sampling. The publication of specialist reports could have been delayed by restricted numbers of archaeobotanists, or tends to be limited to abbreviated forms in (preliminary) site reports that leave out many details.[297]

	date	Wheat	Barley	Broad bean	Vetch	Acorn	References
Intermontane region							
Le Coste (AQ)	CA					X	Castiglioni & Rottoli 2003, 658
Southern Lazio							
[#157] Piscina di Torre Spaccata (RM)	CA-EBA1?	Triticum dicoccum 174 Triticum monococcum 6 Triticum sp. 11	5		2		Costantini & Biasini 1984
Osteria del Curato-via Cinquefrondi (RM)	CA	Triticum dicoccum	X				Anzidei et al. 2007, 488, 491, 499 [tab. I]; Anzidei et al. 2007a, 562 [fig. 1B]
	CA [pit]			>5			
[#197] Val di Comino-S. Andrea (FR)	EBA1-EBA2	[unspecified cereals]					Carancini et al. 2003, 81

Table 7.18: overview of the range of species in botanical samples from (late) Copper Age [CA]-EBA1 assemblages in Abruzzo and Lazio.

Copper Age-EBA1

Since the Neolithic the range of cultivated cereal species has been fairly stable in the Italian peninsula, including wheats (both einkorn and emmer) and barley as the main crops (cf. Costantini & Stancanelli 1994). Emmer is the predominant species in samples from two Copper Age settlements (PISCINA DI TORRE SPACCATA [#157]; OSTERIA DEL CURATO-VIA CINQUEFRONDI) in southern Lazio (Table 7.18). Legumes are less well-represented, probably arising from differential preservation and distinctive treatment, with respect to cereals. This is underscored by the contextual dissociation of broad beans from cereals, the former reported from the same pit that contained the faunal sample with a 'pastoralist signature' at OSTERIA DEL CURATO-VIA CINQUEFRONDI (§7.4.1). Overall, broad bean was probably the main species of legumes in Copper Age and EBA contexts (see below). A similar problem of differential preservation concerns evidence for the gathering of wild fruits as a subsistence strategy. The only fruit represented in Copper Age-EBA1 samples concerns acorns reported from LE COSTE in the FUCINO BASIN (Table 7.18). It has not been specified whether these had been treated for human consumption (e.g. roasted) or not (Castiglioni & Rottoli 2003, 658).[298]

Botanical samples from overtly ritual contexts, where differential preservation tends to be high, are underrepresented. Implicit in the interpretation of ceramics deposition at caves as ritual in character (§6.2) is the idea that an unspecified number of these vessels (originally) contained food. At present, this cannot be substantiated for cave assemblages that are limited to ceramics and, although botanical remains have been reported from the two "full" cave assemblages in 'coastal' Abruzzo (GROTTA SANT'ANGELO; GROTTA DEI PICCIONI), there is no stratigraphical information to link this

[297] But cf. Costantini & Costantini Biasini 2007 who published only recently a summary of numerous internal reports on Bronze Age samples from southern Lazio, making this information available for the first time to a wider audience after decades of research.

[298] If unprocessed, it could be related to the relatively high proportion of pig [36%] in the faunal sample (Table 7.11).

presence to Copper Age-EBA contexts. In this respect, the absence of quernstones from polythetically "full" EBA cave assemblages (§6.2.1) could refer to the absence of cereals from depositional practices. On the other hand, the act of deposition of unspecified cereal remains in a natural subsurface featere at VAL DI COMINO-S. ANDREA [#197] (§7.1.4) does show the ritual significance of cereals in EBA1 depositional practices. Overall, absence of evidence cannot be interpreted as evidence of absence, given the current lack of detailed and/or stratigraphically sound botanical samples.

EBA2

None of the botanical samples listed here can be attributed to EBA2 assemblages with some degree of certainty (Table 7.19), but they are used as a proxy for the sake of making a diachronic comparison. Arguably, such a comparison between Copper Age samples (Table 7.18) and larger samples from MBA1 cult places in southern Lazio for which EBA2 dates have been reported (GROTTA DELLO SVENTATOIO; LAGO ALBANO-VILLAGGIO DELLE MACINE [#173]; GROTTA VITTORIO VECCHI), can highlight potential changes in agricultural practice in the course of EBA (cf. Van Rossenberg forthcoming). References to the large sample from the EBA2 village of NOLA in Campania (Table 7.19) will also be included in the discussion for the sake of comparison.

	date	Wheat	Barley	Millet	Broad bean	Acorn	Olive	Cornelian cherry	Other	References
Southern Lazio										
Grotta dello Sventatoio (RM)	EBA2?; MBA1-MBA2	Triticum dicoccum 235 Triticum monococcum 8 Triticum aestivum/compactum 11	137		55		1			Costantini & Costantini Biasini 2007, 789-791
[#173] Lago Albano-Villaggio delle Macine (RM)	EBA2?; MBA1	Triticum spelta Triticum dicoccum Triticum monococcum [including chaff elements]	X		X	X		X	Fig [52%] Blackberry [28%] Elderberry Crab apple Prune Wild grape Hazelnut Flax Poppy	Carra et al. 2007
Grotta Vittorio Vecchi (Sezze, LT)	CA?; EBA1-EBA2?; MBA1-MBA2	Triticum dicoccum 1492 Triticum monococcum 11 [including chaff elements 5]	93		2182	8		10		Costantini & Costantini Biasini 2007, 793-795
Campania										
Nola-Croce del Papa (Campania) [included for comparison; n=13509]	EBA2	Triticum dicoccum [38%] Triticum monococcum [2%] Triticum cf. spelta [0.2%] Triticum cf. durum/aestivum [including chaff elements]	26%	X		X	X		Almond Hazelnut Sloe [*prunus*] Wild grape	Costantini et al. 2007

Table 7.19: overview of the range of species in botanical samples from (potentially) EBA2 assemblages in Abruzzo and Lazio [including NOLA for comparison].

In the range of cereals (Table 7.19), emmer remained the main species with barley as the second main species (GROTTA DELLO SVENTATOIO; GROTTA VITTORIO VECCHI; NOLA-CROCE DEL PAPA). Reportedly, spelt is the main cereal species in the sample from LAGO ALBANO-VILLAGGIO DELLE MACINE [#173] (Table 7.19), where cereals only entail a very small proportion [5%] overall (Carra et al. 2007, 778-779 [fig. 2]), as the sample predominated by fruits (Table 7.19). Although spelt is commonly considered as a Bronze Age species, it is unlikely that it had already been introduced in southern Lazio in EBA2. There are some difficulties in determining this species, partly related to its small proportion with respect to the main cereal species. In Northern Italy there seems to be evidence for the proliferation of spelt only after the Copper Age (Rottoli & Castiglioni 2009, 101), probably

from continental Europe (cf. Akaret 2005). Still, spelt is absent from caves in southern Lazio and virtually absent from the EBA2 settlement (NOLA) in Campania (Table 7.19). By contrast, the earliest evidence of spelt in Tuscany is probably EBA in date (Bellini et al. 2008, 107 [tab. 2], 110), more specifically associated with the supra-regional 'cult centre' at MONTE CETONA in southern Tuscany, a significant node in metalwork production, exchange and deposition (§4.1.2). This coincidence and regional differentiation in the occurrence of spelt highlights the possibility that the proliferation of agricultural innovations was linked to (supra)regional connectivity between cult places (§3.2). This particular case, i.e. the introduction of spelt into Lazio, has to be discussed in its proper, MBA1 context (cf. Van Rossenberg forthcoming).

In Tuscany a diversification in the cultivation of legumes took place in the course of the Bronze Age (Bellini et al. 2008, 107 [tab. 2], 110). By contrast, there is no evidence that species of legumes were added to broad bean in Lazio in the course of EBA (Table 7.19). Still, the issue of differential preservation has to be taken into account (see above), which probably explains the striking absence of legumes from the large reference sample from NOLA in Campania (unless an indication of seasonality). Favourable cirumstances in the cave and water-logged, lake-side assemblages in Lazio (Table 7.19) argue against the relevance of the issue of preservation. The fact that so far the earliest evidence for other species than broad bean has only been found in (other) Middle Bronze Age samples (cf. Van Rossenberg forthcoming), seems to argue against a greater EBA variety of legumes.

Differential preservation in caves and at lake-sides helps to understand the role of fruits in EBA subsistence. For comparison, the range in the EBA2 reference sample from NOLA in Campania is smaller than at LAGO ALBANO-VILLAGGIO DELLE MACINE, where water-logged conditions have preserved a large quantity [>80%] of wild fruits (Table 7.19; cf. Carra 2007; Carra et al. 2007).[299] Arguably, the use of most fruit species in the wider range can be extrapolated to the 'depleted' Copper Age-EBA1 range, in addition to acorns (Table 7.18). The sample as a whole from LAGO ALBANO-VILLAGGIO DELLE MACINE is predominated by common fig [52%] and blackberry [28%], but further species include elderberry, cornelian cherry, crab apple, prune, wild grape and poppy (Table 7.19). Many of these have been related to the production of alcoholic beverages and, in particular, (wild) grape and cornelian cherry are commonly used as an indication of drinking habits in the Bronze Age, if not earlier.[300] This particular connotation of cornelian cherry sheds light on its presence in the sample from GROTTA VITTORIO VECCHI (Table 7.19), arguably highlighting the role of food and drink consumption in ritual and/or intercommunal contexts such as cult places at caves. For instance, the series of three, including EBA2 cups in the act of deposition at LAGO ALBANO-VILLAGGIO DELLE MACINE [#173] (§7.1.4) shows the role of drinking in EBA2-MBA1 place-making.

7.4.4 Subsistence and settlement: mobility and connectivity

The interpretation of Copper Age and EBA subsistence in terms of mobility and connectivity has long been regarded as straigthforward on (sub)regional scales, with an emphasis on the complementarity of sedentary, 'year-round' and mobile, 'seasonal' strategies in mixed-farming. Despite numerous excavations of Copper Age settlements over the last decades, however, semi-nomadic pastoralist communities, separate from settled communities, remain a significant element in reconstructions of Copper Age connectivity on (supra)regional (cf. Manfredini et al. 2000; Manfredini 2005a; Chiarenza & Lambertini 2006). This issue spills over into reconstructions of EBA settlement patterns and social networks, especially due to the overall lack of excavations of open-air sites in Abruzzo and Lazio (§7.1; §7.3.2). Here an attempt will be made to address the relationship between settlement patterns and connectivity (§7.2) in terms of mobility, starting from the evidence for subsistence. Given the absence of evidence for the introduction of new crops between the Copper Age and EBA2 (§7.4.3), agricultural innovations cannot be used in explaining residential mobility in the longer term (i.e. shifts in settlement

[299] It can be argued that differential preservation of wild fruits at LAGO ALBANO-VILLAGGIO DELLE MACINE is not only a reflection of taphonomy, the crater lake environment and daily life in the putative MBA1 settlement, but also highlights a cultural bias related to notions of the place (cf. Van Rossenberg forthcoming).

[300] Whereas Bellini et al. (2008, 109) are skeptical, Rottoli & Castiglioni (2009, 101) are positive about the identification of alcoholic beverages in Bronze Age contexts. There is a possibility that the uncharacteristic (*contra* Carra et al. 2007, 778) predominance of spelt among cereal remains at LAGO ALBANO-VILLAGGIO DELLE MACINE (see above) refers to its particular use in the production of alcoholic beverages (cf. Mercuri et al. 2002 highlighting hop as a species seemingly peculiar to the ALBAN HILLS). In this respect, the combined presence of spelt, cornelian cherry and (wild) grape in EBA and MBA samples from an open-air assemblage connected to the 'cult centre' of MONTE CETONA (Bellini et al. 2008, 107 [tab. 2]) is perhaps not a coincidence.

patterns). Consequently, the question is whether the patterns discerned in faunal samples (Tables 7.14 & 7.17) were related to changes in settlement patterns and connectivity (§7.2), or not.

Copper Age-EBA1

Evidence for the circulation of 'non-local' objects such as metalwork, in the absence of evidence for its local production (Chapter 4), shows that connectivity covered long stretches. Similarly, mobility over longer distances is implied by the clustered occurrence of Copper Age settlements and cemeteries,[301] as evident in 'coastal' Lazio (§6.1.3; §7.1.4). Making a distinction between connectivity in general and (seasonal) patterns of mobility in particular, the question is how the latter fit in the former. In general, when long distances have to be covered for the purpose of intercommunal interaction, a high degree of planning is required concerning the time and place of meetings (Chapter 2). Taking into consideration the effort of travel itself, it seems reasonable to presume that in later prehistory the timing of meetings was structured by the annual cycle of activities (i.e. seasonality) and that meeting-places would have been set at given (i.e. prior and/or persistent) places. In this respect, there are strong indications that Copper Age settlement patterns, as well as the basic structure of social interaction, would have persisted in EBA1 (§3.2.1; §7.2).

On the basis of Copper Age-EBA1 faunal samples, it was argued that pastoralist practices were well-integrated in the annual 'sedentary' cycle and did not necessarily reach far beyond the micro-regional sphere of settled communities (§7.4.1; Table 7.14). On the other hand, hunting was situated outside the 'domestic' sphere and within an intercommunal sphere that intersected with the sphere of cult places (§7.4.2; Table 7.17). Therefore, hunting as a 'specialised' subsistence strategy, reaching (or taking place in the environs of) cult places that served as meeting-places, seems more compatible with Copper Age-EBA1 mobility over longer distances than pastoralist practices. This does not exclude the possibility that exchange and other forms of social interaction were embedded in pastoralist mobility patterns on a regional scale. Furthermore, a link between long-distance mobility and hunting can be based on the presumption that social occasions of intercommunal interaction on a supra-regional scale did not follow an annual periodicity, such as pastoralist practices. This presumption is based on the ethnographic record that argues for a more punctuated pattern, separating such occasions by intervals of several years (or more), if not generations (cf. Russell 2012, 163).

The ethnographic record indicates that larger intercommunal gatherings often followed longer than annual, seasonal periodicities and provided a context for intercommunal food consumption, marriage arrangements, intercommunal rituals (e.g. initiation, ancestor veneration), exchange, etc. (cf. Helms 1998). This scenario is commensurable with the reconstructed structure of social interaction (§3.2; §7.2), which implies that on occasion segments of settled communities would have travelled considerable distances to other clusters of settlements and/or cemeteries. Arguably, this occasional pattern of mobility linked the cluster of Copper Age cemeteries (and the 'Bell Beaker' meeting-places) in northernmost Lazio and the cluster of Copper Age settlements and cemeteries in 'northern' southern Lazio, similar to southern Lazio and the FUCINO BASIN within the "Ortucchio facies" (§7.2). Given the ingrained connectivity between clusters of cemeteries and settlements in the structure of Copper Age social interaction, it is not a coincidence that network changes in EBA1 entailed the 'concerted' end of the trajectories of both these constituent elements of Copper Age cultural landscapes. From a network perspective, the abandonment of places that had served as intercommunal meeting-places, by definition, highlights a shift in the main nodes of social networks, hence the structure of social interaction.

The current state of knowledge about EBA1 networks makes it difficult to be more precise, but a glimpse of chronological order can be caught. It was argued that, despite the abandonment of Copper Age cemeteries in northernmost Lazio (§5.1.3), the open-air site with a comprehensive 'Bell Beaker' assemblage (TORRE CROGNOLA) persisted as a meeting-place at the EBA1-EBA2 transition (§7.1.3), before being replaced by LAGO DI MEZZANO in EBA2 (§7.2; Figures 7.7 & 7.8). Similarly, the wholesale abandonment of cemeteries of Copper Age tradition (§5.1.3) coincided with the end of trajectories of Copper Age-EBA1 open-air sites in 'northern' southern Lazio (§7.2). Still, in some cases the limited character of the BA1B assemblages casts doubt on their interpretation as the remains of

[301] Cf. Chiarenza & Lambertini 2006 for a supra-regional approach to Copper Age settlement patterns and mobility in Northern and Central Italy. They start with highlighting the problem of research biases such as micro-regional differentiation in research intensity, but implicitly regard reconstructed settlement patterns characterised by the clustered occurrence of settlements versus the wider spread occurrence of seasonal sites as a past reality.

year-round settlements at persistent Copper Age settlements (§7.1.4). An alternative interpretation is that the predominance of decorated ceramics constituted a final stage of social events (i.e. ceramics deposition and/or food consumption) at these prior, Copper Age places that in the light of supra-regional connectivity had remained significant nodes in EBA1 networks (§7.2; Figure 7.7).

The overall change in connectivity towards the interior at the EBA1-EBA2 transition (§7.2) highlights that the Copper Age-EBA1 settled communities in 'southern' northern Lazio to the south of the LOWER ANIENE valley became part of a seasonal pattern of pastoralist mobility that reached into the intermontane parts of the ANIENE valley (§7.4.1). This change in directionality of pastoralist mobility patterns could have preceded the establishment of a settled EBA2 community to the north of the LOWER ANIENE valley (§7.1.4; §7.2). A similar sense of order can be discerned in environmental changes with a lasting impact, in particular the EBA2 climatic 'dry event' (§3.4) following the impact of marine transgression (cf. Di Rita et al. 2010). The argument of the EBA gap in the settlement history of the coastal plain of MACCARESE (§7.1.3) can be extended to the lagoonal strip to the south of the TIBER mouth, where increasingly brackish conditions could have affected seasonal mobility patterns in southern Lazio (§7.1.4) and prompted the shift towards the interior (see above). The sustained impact of the 'dry event' in MBA1 (§3.4) would have postdated and was therefore probably not the main reason for the establishment of a settled EBA2 community to the north of the LOWER ANIENE valley (§7.1.4), nor the overall sense of discontinuity in trajectories of open-air sites between EBA1 and EBA2 (§3.2.1; §7.1).

EBA2

The general impression provided by the diachronic overview of open-air sites is that their numbers increased between EBA1 and EBA2 and that their overall distribution became more widespread (§7.1). Although some areas were abandoned at the EBA1-EBA2 transition, the emergence of new areas with open-air sites shows that gaps were filled in Copper Age-EBA1 distributions (§7.2; Figures 7.7 & 7.8). Arguably, differentiation in community size became more pronounced in EBA2, on the one hand, including clusters of open-air sites, for instance the settled communities that emerged in northernmost Lazio (§7.1.3) and to the north of the LOWER ANIENE valley (§7.1.4), and, on the other hand, an increasing number of relatively 'isolated' open-air sites. The presence of smaller communities, next to clusters of settlements, is intimately linked to enhanced connectivity over shorter distances on a regional scale (i.e. the one contributed to the other, and vice versa).[302] Presumably 'filling gaps' in settlement patterns would also have contributed to a change in pastoralist mobility patterns at the EBA1-EBA2 transition (see above). Connectivity over relatively shorter distances diminished the role of seasonal mobility in social interaction on a regional scale. In this context, the postulated increase in significance of cattle with respect to sheep/goat in 'coastal' Lazio (§7.4.1; Table 7.14) can be interpreted as an indication of the more widespread occurrence of mixed-farming communities in EBA2.[303] The alternative of separate, semi-nomadic pastoralist communities (see above), 'invisible' in faunal samples, seems even less likely in EBA2 than in the Copper Age-EBA1 situation that is characterised by sheep/goat predominance (§7.4.1).

In terms of the structure of social interaction, 'filling gaps' shortened distances (i.e. the degree of mobility required in interaction) between settled EBA2 communities. There is a possibility that the character of exchange changed accordingly, in the sense that more dispersed settlement patterns allowed for connectivity that was less punctuated, more down-the-line in character than in the case of a more clustered occurrence of settled communities.[304] At the same time, the persistent role of cult places (LAGO DI MEZZANO; PIAN SULTANO; GROTTA SANT'ANGELO; GROTTA DEI PICCIONI) in supra-regional connectivity highlights that interaction requiring mobility over longer distances did take place in EBA2. In particular, the larger part of 'coastal' Lazio was outside the immediate sphere of settled communities after the postulated shift in 'regional' connectivity towards the interior (§7.2; Figure 7.8). Nonetheless, this large 'empty' zone has a strong connotation of supra-regional connectivity, with the

[302] If the impact of the climatic 'dry event' (§3.4) was an issue in EBA2, differentiation in community size could have increased sustainability by connectivity in case of crop failure, given the absence of evidence for diversification in crops (§7.4.3).
[303] In the case of smaller communities, workforce requirements in the annual cycle could have made seasonal mobility outside the micro-region unsustainable. In retrospect, a change in regional mobility patterns highlights the possibility that pastoralism was based on larger flocks, in a joint venture of several settlements in larger settled Copper Age-EBA1 community.
[304] Of course, down-the-line patterns do not shorten the total physical distances to be covered on a supra-regional scale, for instance in the acquisition of metalwork originating from southern Tuscany, in the absence of evidence for local metalwork production in Abruzzo and Lazio (§4.4.3).

new cult place established at PIAN SULTANO in northern Lazio, constituting the intersection of the overall 'coastal' distribution of axe depositions (dissociated from settlement patterns) and the similarly percolated distribution of "Palma di Campania" ceramics (§7.2; Figure 7.9). If this larger area can be nterpreted as an intercommunal sphere, it could have incorporated hunting as a 'specialised' activity (§7.4.2; Table 7.17), disconnected from pastoralist mobility patterns that remained well-integrated in the (sub)regional sphere of settled communities. The 'multi-sited' approach to diachronic comparison of cultural landscapes and social networks in the data-rich synthesis (Chapter 8) is the proper context for shedding light on such interrelated issues of mobility and connectivity.

7.5 A summary and multi-sited questions

Because of the general lack of excavations of EBA open-air sites in Abruzzo and Lazio most of the patterns that have been discussed in this chapter refer to settlement patterns on regional to supra-regional scales rather than settled communities in themselves. Here I will provide a summary of the basic patterns that emerged from the preceding analyses of settlements and other open-air sites in Abruzzo and Lazio, and the main interpretations that were based on these patterns. Along the line, further questions were highlighted that are 'multi-sited' in character and can therefore only be addressed in comparison with other constituent elements of cultural landscapes and social networks. These 'multi-sited' questions will be listed here as a conclusion to this chapter, to be addressed in the data-rich synthesis (Chapter 8). The coincidences of the patterns discussed for settlement patterns with those that emerged from the analyses of the other constituent elements of cultural landscapes indicates that these can be compiled in such a 'multi-sited', data-rich synthesis.

- First of all, knowledge of EBA settlement patterns in Abruzzo and Lazio is constrained by considerable gaps in archaeological records (§7.1). The situation is particularly unclear in 'coastal' Abruzzo (§7.1.1), knowledge is skewed towards the FUCINO BASIN in the intermontane region (§7.1.2), whereas both parts of 'coastal' Lazio stand out, even after taking a critical stance in favour of well-dated open-air sites (§7.1.3; §7.1.4). Nonetheless, the impression of EBA1-EBA2 discontinuity in trajectories of open-air sites in Central Italy (§3.1; §3.2) was to a large extent corroborated (§7.1). The diachronic impression that emerged from the overview (§7.1), is that the number of open-air sites increased and their distribution became more widespread between EBA1 and EBA2.
- An attempt was made to provide a diachronic framework for the interpretation of settlement patterns and connectivity on regional to supra-regional scales. Using 'typo-networks' based on ceramics as a proxy for regional connectivity, it was shown that cross-APENNINE routes became more prominent at the EBA1-EBA2 transition, in particular linking both southern Lazio and southern Abruzzo to the FUCINO BASIN (§7.2), contrary to the postulated shift away from this axis in EBA2 based on the distributions and specifics of metalwork (§4.4.3).
- There is a general lack of excavations of EBA open-air sites in Abruzzo and Lazio, especially in comparison with the current state of Copper Age archaeological records. Consequently, the polythetic classification of EBA open-air assemblages (§7.3.1) was not as conclusive as in the case of cave assemblages (§6.2.1). Complete vessels are correlated with assemblages for which a ritual character can be argued on other grounds (§7.3.1). Only quernstones could be singled out as an indicator of year-round settlements. Although the relatively few excavations of open-air sites with EBA assemblages did yield a range of structural remains and features (§7.3.2), in many cases these seem to refer to earlier, Copper Age or later, Middle Bronze Age phases in the trajectory of the respective open-air sites.
- Finally, analyses of subsistence-related, faunal and botanical remains (§7.4) were used in an attempt at substantiating the general impression of changes in EBA settlement patterns and connectivity (§7.1; §7.2). The scenario of semi-nomadic pastoralist communities, traditionally used to explain interregional connectivity, was rejected in favour of one in which pastoralism was a seasonal subsistence strategy on a 'sub-regional' scale, well-integrated in the annual cycle of sedentary communities since the Copper Age (§7.4.1; Table 7.14). A distinction was made between hunting and pastoralist practices in terms of mobility patterns, the latter more intimately related to the domestic sphere and the former situated in a supra-regional, intercommunal and arguably ritual sphere (§7.4.2; Table 7.17). Absence of evidence for the introduction of new crops argues against agricultural innovations as a reason for changes in settlement patterns (§7.4.3).

This summary of patterns and reconstructions shows that settlement patterns in Abruzzo and Lazio can be linked to network changes between the Copper Age and EBA. Still, a lack of chronological resolution of EBA1 assemblages from Copper Age open-air sites means that a 'multi-sited' approach is required to make a diachronic comparison related to network changes between EBA1 and EBA2. Apart from comparisons already made in the thick descriptions of settlement patterns (§7.1), the following 'multi-sited' questions have to be addressed in comparison with other elements in cultural landscapes and social networks (Chapter 8).

- First, starting from the diachronic patterns of the proliferation of metalwork deposition (Chapter 4), the decrease in archaeological visibility of burial (Chapter 5), the increase in cave use (Chapter 6) and the increasingly widespread occurrence of open-air sites between EBA1 and EBA2 (§7.1; §7.2), the basic question is whether this general impression of 'synchronicity' in these patterns refers to a past reality (or not).
- A related, more specific question is to what extent these practices refer to spatially interrelated phenomena. In the 'thick descriptions' (§7.1) it was highlighted that depositional practices, including metalwork deposition (Chapter 4), secondary burial (Chapter 5) and cave use (Chapter 6), occupied intermediate positions with respect to the distributions of open-air sites. Does this mean that depositional practices, including a new EBA tradition of 'isolated' acts of ceramics deposition (§7.3.1), can and should be linked to a distinctive sphere, outside the sphere of settlements, and interpreted as a form of boundary work?
- In turn, this specific question will be brought to bear on a supra-regional scale. How does the general impression of EBA networks in Abruzzo and Lazio relate to cultural boundaries and connectivity in Central Italy as a whole (§3.2)? A particular question is how the emergence of a supra-regional cult and meeting-place at LAGO DI MEZZANO (§7.1.3), where cave-like ceramics deposition (§6.2.1) and metalwork deposition (§4.2.3) intersected, should be understood in a supra-regional context (§3.2).