Title: Settlement in the Upper Orontes Valley from the Neolithic to the Islamic Period: an instance of punctuated equilibrium

Authors: Graham Philip and Jennie Bradbury

Authors' contact details

Corresponding author, Graham Philip Dept. of Archaeology, Durham University, Science Site, Durham DH1 3LE, UK
Email: graham.philip@durham.ac.uk

Jennie N Bradbury, Endangered Archaeology in the Middle East & North Africa, University of Oxford, Hayes House, 75 George St, Oxford OX1 2BQ, UK
Email: jennie.bradbury@arch.ox.ac.uk

Abstract

This paper seeks to outline the main developments in settlement organization in the Orontes Valley around the modern city of Homs from the Neolithic through to the Islamic period. Data drawn from ten seasons of fieldwork undertaken by the project Settlement and Landscape Development in the Homs Region, Syria (1999-2009) are used to delineate the main developments in settlement distribution and organization in each of three contrasting landscape units. Settlement change over time in each unit is considered in terms of its possible relationship to political and economic developments at a wider regional scale.

Acknowledgements

The project wishes to thank the staff of the Damascus and Homs offices of the Directorate General of Antiquities and Museums of Syria, for their help and kindness offered during our many seasons of fieldwork. We also owe a debt of gratitude to the local communities whose willingness to allow a group of archaeologists to walk repeatedly around their villages and across their fields, proved essential to the success of the project. Funding for fieldwork was provided by the Council for British Research in the Levant (CBRL), the British Academy and Durham University. Post-fieldwork analysis and preparation of material for publication has been generously supported by the Leverhulme Trust, Grant F00128/AR (2007-2010).

Introduction

Settlement and Landscape Development in the Homs Region Syria (SHR) is a Joint Syrian-British project involving Durham University and the Directorate General of Antiquities and Museums Syria. Fieldwork continued annually from 1999 until 2010. The co-directors are Graham Philip (Durham), Michel al-Maqdissi (DGAM, Damascus) & Farid Jabbour (DGAM, Homs). In addition to its intrinsic interest as a geographically distinctive section of the Orontes Valley, for which little previous settlement data existed, the area is of interest for a number of reasons.

The study area (Figure 1) is located where the east-west route offered by the Homs-Tripoli gap intersects the north-south route along the Orontes and southwards into the Beqʿa Valley. The upper reaches of the Orontes run through the Beqʿa Valley, which provided an important north-south route, that avoided the more arid regions east of Damascus, and that formed a historic connection between southern and northern regions of the Levant. The Homs region also lies close to the junction of three well-known and enduring major material culture regions: inland Syria, the coast and the southern Levant (Philip et al. 2002a: 34), and has ready access to the steppe zone to the east.

Located directly west of the central Syrian steppe, but comfortably within the range of reliable rain-fed agriculture (Philip and Bradbury 2010, Fig. 1), the study area ought to provide a guide to diachronic trends in settlement in an area that is relatively 'low-risk' in terms of rainfall, and in which we might therefore expect settlement stability to have been the norm. The data from a settlement 'core' such as the Orontes Valley will provide an important point of comparison for the distinct phases of settlement contraction and expansion that have been revealed by work further to the east (Geyer 2007; Geyer and Calvet 2001), in what Wilkinson et al. (2014) term the 'Zone of Uncertainty'. (For further discussion of the concepts of settlement 'cores' and the 'Zone of Uncertainty' see Wilkinson et al. [2014]).

The survey area encompasses two quite different landscape types (Figure 2). To the east of the Orontes the soils are calcareous and overlie Late Miocene lacustrine marls (Bridgland *et al.* 2012: 28): mudbrick construction is the norm. The region west of the Orontes represents the eastern extent of the Shin basalts, which are of Late Miocene–Early Pliocene date and, in places, are interbedded with the marls (Bridgland *et al.* 2012: 28-29). This area has volcanic soils, and offers an ample supply of stone for building. In fact, these two geological regions have allowed the project to define three distinctive survey regions, one basaltic and two marl regions. The marl landscape south of Homs, the Southern Marls, is crossed by a number of seasonal watercourses, and did not support extensive irrigation away from the vicinity of the Orontes prior to the 1980s.

However, the region north of the city, the Northern Marls (Figure 2), represents the westernmost extension of a plateau composed of Pliocene and marly limestone, most of which drains, not westwards to the Orontes, but into a series of watercourses that flow northwards where they become deeply incised, before joining the Orontes east of Rastan (Cremaschi et al. 2007: 94): the large Bronze Age settlement of Qatna located some 16 km east of the Orontes, lies within this drainage system. It further differs from the south in that it has been under irrigation

agriculture since the mid-20th century, using water conveyed by canal from Lake Qatina (Naaman 1951: 87-88, Fig. 8).

The basaltic region immediately west of Lake Qatina has been investigated by a Spanish-Syrian-Lebanese team, (Armendariz et al. 2011; Haider-Boustani et al. 2005; 2008), while Syrian-British project has focused on an area located north-west of Homs, crossed diagonally by the present-day Homs-Masyaf road. As the evidence for both Chalcolithic/ EBA and Graeco-Roman period activity in the basaltic region has been discussed at length elsewhere (Newson *et al*. 2008-9-10; Philip and Bradbury 2010, 2011), comments on this area will be kept relatively brief in the present account.

The Marl Landscape

When viewed from within, the southern marls appear deceptively flat. However they slope in a south-westerly direction from an altitude of 710 m in the south-eastern corner of the Southern Study Area to a height of around 498 m at the margin of Lake Qatina. The marl is crossed from south-east to north-west by a series of shallow seasonal wadis, which are readily detectable on Corona imagery by the distinctive reflectively of the concentrations of pebble that has been deposited in the dry wadi beds (Philip et al. 2005: 26-7, Fig.4). On the evidence of Corona data the pebble trails stop several kilometres east of the Orontes River, suggesting the wadis carried only a modest flow in recent decades. The marl today offers little in the way of perennial surface water: villages in this area traditionally relied upon wells as their main water source. However, virtually the entire area receives more than 300 mm of annual precipitation making it suitable for rain-fed cereal production. The most distinctive topographic feature of the flat marl landscape today is the occasional presence of tells, most of which reveal the high, steep-sided profile that indicates the presence of a defensive rampart.

Settlement activity in the marl landscape can be divided into three main phases. A lengthy period of dispersed settlement during the Neolithic and Chalcolithic is followed by an agglomerated, tell-based pattern from the Early Bronze Age through to the Hellenistic period. Roman and later settlements mostly take the form of flat sites, suggesting they were unfortified. In contrast to the tells, many of which had not been extensively damaged (as of 2010), most of the later settlements display significant levels of damage, mainly through agricultural activity, ploughing, the digging of holes for tree-planting, and less frequently, on-site construction.

Early Settlement in the Upper Orontes Valley

The dispersed landscape of the Neolithic – Early Chalcolithic (Figure 3)

In the southern marls, the basal deposits of Trench VIII at Tell Nebi Mend produced evidence for a Ceramic Neolithic occupation dating to the mid-late 7th millennium BC (Parr ed. in press). The fact that only one small sounding was excavated to the water table, and that this still produced Ceramic Neolithic occupation, renders it likely that the settlement of this period extended over a reasonably large area, probably several hectares, beneath the later tell. There is no evidence for 6th-5th millennium BC material at Nebi Mend. Therefore the presence of an 8 ha scatter of just such material at Arjoune on the east bank of the Orontes just 1 km north of Nebi Mend (Parr et al. 2003: 11), suggests that occupation simply shifted between the two

locations. With the exception of the small tell of Arjoune (SHR 286), which produced both Persian period and Neolithic material, the site is very badly eroded, and soundings excavated away from the tell revealed mainly shallow pits and scoops preserved stratigraphy (Parr et al. 2003: 16-20). This makes it hard to estimate the size of the occupation at any one point in time. However, it seems reasonable to posit the existence of a settlement of several hectares extent, at either Nebi Mend or Arjoune, from the later 7th through to the later 5th millennia BC.

Small quantities of Ceramic Neolithic pottery and chipped stone were recovered from a number of the other tells (Figure 3), located both at the edge of the Orontes / Lake Qatina and along its tributary wadi systems, suggesting that other Neolithic settlements existed. As far as we can judge from surface collection, none of these appears to have extended beyond the boundaries of the overlying Bronze Age tell, suggesting that we are dealing with relatively small prehistoric settlements in these locations. However, the presence of chipped stone finds of Neolithic-Chalcolithic date within surface collections undertaken in sample collection units placed along the wadi systems, points to a degree of 'off-site' activity mainly focused along the watercourses.

In the northern marls ceramic finds were concentrated at few sites along the Orontes, in particular those located close the junction of the Orontes and its tributary wadi systems, on both the east and west sides of the river. SHR 94 in particular, located on a terrace outcrop a short way east of the Orontes, is the only site, apart from Arjoune to have produced instances of dark on light painted wares (i.e. akin to Halaf / Ubaid). As the scatter extends over several hectares, SHR 94 may well represent the major locus of Neolithic-Chalcolithic activity in this area. Evidence for 6th-5th millennium BC activity in the basalt takes the form of diagnostic chipped stone recovered in the vicinity of seasonal lakes (Philip and Bradbury 2010: 153).

Early & Middle Bronze Age Settlement in the Upper Orontes Valley

The intensification of activity in the 4th and early 3rd millennia BC (Figure 4)

Following a hiatus, the resumption of settlement at Nebi Mend is marked by the presence of chaff-tempered ceramics, the Fabric C of Mathias (2000: 419-420, Fig. 23.3). Recent (as yet unpublished) radiometric dates suggest that this material was present at the site by the early 4th millennium BC calibrated, continued into late 4th millennium BC deposits, and its use *may* have extended into the early 3rd millennium BC. Similar pottery occurs at a number of sites in the survey area, which are accordingly assigned to Late Chalcolithic – EB I-III (Figure 4). During the second half of the 4th millennium BC the chaff-tempered pottery is joined by well-fired reddish buff fabrics, the Fabric B of Mathias (2000: 422 Fig. 23.4), which is also widely distributed. This ceramic provides an indicator for activity falling in the late 4th and early part of the 3rd millennia BC calibrated. Lacking better chronological discrimination all we can say it that there appears to have been considerable continuity of settlement through the 4th and earlier 3rd millennia BC(Figure 4) and this period represented a marked intensification of settlement compared to the Ceramic Neolithic.

In the southern marls the pattern of sites foreshadows that of the later tells, although one or two settlements appear not to continue after this period. Once again activity

is concentrated along the Orontes, and on the tributary wadi systems. Some offsite activity is still documented, but no sites were identified that were located beyond the present-day 300mm isohyet. Site numbers also increased in the northern marls, and offsite activity is indicated around SHR 94, while both it and SHR 81 on the west bank of the river continued to be occupied.

As with Neolithic activity it is difficult to be certain whether the apparent lack of Chalcolithic/EBA material at sites such as SHR 83 and 97 is genuine or whether it has simply been obscured by later overburden. When Figures 4 and 5 and 8 are compared, it is clear that late 4th / early 3rd millennium BC settlements had already occupied most of the locations that would be enduring components of the later tell landscape. Of course the settlement pattern of this period would have lacked the obvious high tells, with most sites being no more than low mounds by the early 3rd millennium BC. While a few 'flat' (non-mounded) sites remained under occupation, these we believe represent those Chalcolithic-EB I-III sites that did not become later fortified tells, and overall, offsite material appears to be less common than in earlier periods.

EB IV: the crystallization of the landscape of tells (Figure 5)

In the southern marls the EB IV represents a major peak of activity with virtually all the sites that developed into later tells now settled. In the northern marls too, the settlement pattern is close to that of the later tell structure. The EB IV period might therefore be described as that which saw the crystallization of the Bronze Age settlement system, a point made by Haidar-Boustani et al (2005-06: 13) on the basis of a survey undertaken in the region west of Lake Qatina. The period is also characterized by a marked decline in off-site activity. While it is possible that this perception is influenced by the decrease in chronologically diagnostic chipped stone types when compared to earlier periods, the modest recovery of EB IV ceramics away from obvious 'sites', appears to confirm the growing nucleation of settlement from EB IV onwards.

It seems possible that the consolidation of settlement in the Orontes valley during EB I-III was a prerequisite for the massive expansion of activity into the eastern steppe that is evident during EB IV (Geyer and Calvet 2001; Geyer 2007; Castel 2007, 2008). In fact, one of the characteristics of this expansion is the appearance east of Homs of a number of single-period, walled EB IV sites of circular form (Castel 2008; Al-Maqdissi 2008, 2010). In this light, SHR 254 appears of interest. This is a large (8 ha) sub-circular settlement, enclosed by a broad ditch (Philip 2007: 224, Figure 7). It is located close to the present 350 mm isohyet, in the most arid south-eastern part of the southern marls, albeit close to one of the seasonal wadi systems. In terms of its morphology the site resembles the more easterly walled EB IV sites, and might be viewed as a westerly exemplar of this type. Unlike settlements to the east however, SHR 254 has produced ceramic evidence for both activity earlier than EB IV, and dating to the later Bronze and Iron Ages. The continued use of SHR 254 site, in contrast to the short occupations that characterize similar sites further east, may well reflect the rather different trajectories of settlements located closer to 'core' areas.

Chalcolithic-EBA activity in the basaltic landscape west of the Orontes (Figure 6)

As this region has been described in detail by Philip and Bradbury (2010) a brief summary will suffice here. The Homs basalt offers a stony landscape comprised of a

series of low boulder-strewn plateaus, interspersed with shallow colluvium filled valleys and depressions. It receives higher average rainfall than the marl zone to the east, and thus small stream beds and internal depressions collect the winter rains, and can retain these well into spring. Thus, while fairly barren-looking in high summer, the terrain offers standing water in seasonal streams and pools, combined with a good supply of grazing and / or fodder plants in from late winter and through spring and early summer.

In this area settlement was focused upon a small number of occupations located along the main drainage systems (several of which were eventually to develop into small tells), supplemented by a larger number irregular stone enclosures, often located away from the valley bottoms, and which we have argued are associated with the seasonal management of animal herds (Philip and Bradbury 2010: 145). The similarity of the material collected from the valley bottom sites and the enclosures suggests that they were part of a single settlement system.

Without excavation, and in light of the restricted repertory of the local basalt-tempered pottery, much of the activity in this area can be dated no more precisely than Chalcolithic-EBA, but it is clear that the period spanning 4200-2500 cal. BC saw a significant expansion of activity in the basalt region (Figure 6), which may simply be one part of a wider pattern of movement into 'sub-optimal zones' that was related to wider economic developments (Philip and Bradbury 2010: 162-65). It is worth noting that the ceramics from sites in the basalt region, which are generally locally-made using basaltic temper and among which holemouth jars are common, are quite different from the types that predominate on sites east of the river. Secondly, while a small number of sherds diagnostic of the EB IV period was recorded at sites in the basalt, these are not widespread, and EB IV settlement in the area appears to be focused on handful of tells (Philip and Bradbury 2010: 153-155). We have suggested elsewhere (Wilkinson et al. 2014) that the area declined in importance during EB IV because its relatively restricted resources could not offer the kind of high-returns that could be gained from the extensive grazing of large flocks in the eastern steppe during EB IV. The latter strategy was particularly well-suited to the newly emergent state economies, because unlike village-level herders, they could afford to manage the greater element of risk that grazing the steppe entailed.

The region also includes tens of thousands of cairns (Figure 7), many of which include chambers indicative of their use for burial (Bradbury in press; Bradbury and Philip 2011). While these have almost invariably been disturbed, and are difficult to date, the material collected from the immediate vicinity of cairns suggests that their construction began no later than the 4th millennium BC with their use and perhaps even construction continuing through into the Islamic period. That said with use and potentially even construction continuing through into the Islamic period. evidence from the Palmyra region, the Jordanian Badia, and the Negev pointing to the use of cairns during the Neolithic (Morandi-Bonacossi and Iamoni 2012; Rollefson et al. in press; Rosen 2011: 73-74), means that an earlier date cannot be ruled out on present evidence.

Continuity into the 2nd millennium BC (Figure 8)

In the southern marls MBA settlement has the same basic configuration as during EBIV (Figure 8). It is during the 19th C BC, the name *qa-di-sa-a* (Kadesh), the present day Tell Nebi Mend first appears in written sources. These take the form of

texts from Mari that mention troops from Qatna undertaking military activity in the area (Charpin 1998:92). The Mari texts also make specific reference to a strongpoint, located not far from Qadesh, called Dur Ishki-Addu. The fortress was located close to a lake, and according to Ziegler (2007: 314) might constitute part of the boundary of the Qatna kingdom. If so, this ought to refer to the northern part of Lake Qatina, as the lake almost certainly expanded southwards following the construction of a dam at the northern end in the Roman period, which would have raised the water level. It is therefore interesting to note the presence of several small, steep-sided tells in the area between Homs and Tell Nebi Mend. These are positioned either along the eastern margin of the present-day lake, or the east bank of the Orontes. Working from south to north, the most striking examples include: SHR 210, 212, 216, 173, 1068 and 190. While our project was able to collect only a small sample of pottery from SHR 1068, and could definitely identify only Iron Age material, collection by a previous team appears also to have recovered MBA ceramics (Haider-Boustani 2003-04: 66-67).

In the northern marls (i.e. north of Homs) occupation was concentrated on the east bank side of Orontes where a series of small, steep-sided tells, separated by intervals ranging between 1 and 3.5 km was located. There were no inhabited tells on the western bank of this stretch of the river. The sites along the eastern bank were not generally located on tributary wadis, but rather close to, and often directly overlooking the river, presumably to monitor and control movement. The two low tells located on tributary wadis (SHR 81 on the west bank and SHR 94 on the east) that had been occupied during the EBA produced no Middle or Late Bronze Age material. The few larger tells (ca. 3-5 ha in size) such as SHR 97 and Tell Bissé (SHR 1301 which is located just outside our survey area) were positioned several km east of the river. Taken together this might be read to indicate that the Orontes River served as a boundary. Given the nature of the local topography discussed above, and the political situation during the MBA, it seems reasonable to see this as representing the western boundary of the Qatna polity, with the small sites designed to control access to and from the inhospitable basalt landscape to the west. In the latter region, a few sites have produced what appear to be MBA ceramics. In particular, the presence of occasional, heavily-eroded buff-coloured sherds, which are quite distinct from the local basalt tempered material, almost certainly indicate contacts with the marl zones to the east.

LBA Settlement in the Upper Orontes Valley (Figure 9)

Localised trajectories, reflecting a divergence between the northern and southern marls are apparent from the 14th C BC onwards. The northern marls witnessed a decline in settlement, with the line of small sites along the river much reduced, although occupation continued at SHR 270, a tell adjacent to the river, which produced a good selection of diagnostic pottery (in-part because the area has been heavily bulldozed and terraced for olive cultivation). LBA occupation was also present at SHR 97 some 3.5 km east of the Orontes. As Morandi (2013: 125-6) has observed, the apparent decline of this line of small tells may be linked to the demise of Qatna as a regional power. In the southern marls, however, the majority of sites occupied during the MBA continued to be settled into the latter part of the LBA. This is consistent with the position of Kadesh as the regional centre for this area, as the

latter site remained a major political force until the end of the LBA (Liverani 2014: 348-50).

The Landscape of Tells: Key Observations (Figure 10)

Among the factors that characterize the distribution of tell settlements between EB IV and the LBA are that all tells are located either on the Orontes River or one of its tributary watercourses, and within the present-day 300 mm isohyet. Most of the tells in the survey area were small, with more than 70% of tells being less than 3 ha in extent (Table 1). Sites of this kind form the basic unit of the Bronze and Iron Age settlement in many parts of the Middle East (Wilkinson et al. 2012: 173).

The Marl Landscape

All tells exceeding 5 ha in size occur in the marl landscape: the largest tell in the basalt measures just over 3 ha. The sole site that exceeds 10 ha in area, SHR 14 (22 ha), is ramparted enclosure. Although it has produced ceramics dating to most periods from the Neolithic through to the Iron Age, it is unlikely the period of maximum extent was prolonged (see below). The three sites in the size range 5-9.99 ha include two large single-mound tells - SHR 315 (Tell Nebi Mend) and SHR 1302 (Qalaat Homs) and SHR 254 which consists of a small high tell, with an adjacent much larger lower settlement in the form of a ditched enclosure. These three sites are spaced out across the region, separated by distances of between 12 and 26 km.

In the northern marls there are fewer sites. The five tells are positioned close to the river, are all high and steep-sided: they range in size between 1 and 4 ha. The tells located a little further away from the river tend to be in the 3-5 ha range The largest is SHR 94, a large low tell of Neolithic-EBA date which offers no evidence for ramparts, and which is located around 400 m east of the Orontes just south of its confluence with a right-bank tributary. Around 250 m to the north and right on the river bank is SHR 270, a (now very much modified) multi-period tell with occupation continuing through the Bronze and Iron Ages. SHR 270 might reasonably be interpreted as the continuation of settlement from SHR 94, suggesting that this particular area formed an important concentration of settlement within the northern marls, perhaps explaining why SHR 270 continued in use though LBA.

The Basalt Landscape

The basalt region, contains relatively few tells, and none greater than 3 ha in extent. The average size is 1.4 ha, suggesting that sedentary population levels in this landscape remained low. However, the rather different history of tells in the basalt, where many continued to be settled well into the Roman and Byzantine periods, combined with their distinct taphonomy, (the result of the use and re-use of stone as a construction material), makes anything more than a very general comparison with the mudbrick-derived tells of other regions hazardous.

Interpretation of Small Tells

A value close to the lower end of the widely used estimate of 100-200 persons per hectare is often seen as appropriate for calculating the probable population of small rural settlements. In that case, a 1 ha tell with a population of around 100 individuals appears to correspond quite well with the smallest class of village settlement that is

listed in the of the Alalakh texts, and which contain around 7-9 households (Casana 2009: 29-30, Table 3). Many of these appear to represent small agricultural villages. In fact, in many cases the figure quoted for the area of a tell is that of the circumference around the base. This is potentially misleading because of the disproportionate scale of the fortifications that surrounded even small tell sites. To take SHR 256 as an example (Figure 11), the extent of the tell at its base is 2.3 ha (170 m in diameter). However, a bulldozer cut on the south side of the tell exposed a mass of mud bricks, some collapsed, around 20 m wide, almost certainly related to defensive structures. Were the tell encircled by a band of defence-related construction of roughly this size, then the area available for occupation that would have been reduced to 1.3 ha (based on a diameter of 130 m), and even less on the upper parts of the tell. Bearing this in mind, the lower range of the population figures that appear in the texts from Alalakh appear perfectly reasonable for tells in the 1-3 ha size-range.

Not only are these sites small and heavily fortified, they are also long-lived, a point also made by Casana (2009:17). Contrary to our initial expectations, our survey did not recover large numbers of non-tell settlement dating to the Middle and Late Bronze, or Iron Ages, indicating that the tells constitute the greater part of the landscape of permanent settlement for the 2nd and 1st millennia BC. An intensive survey of the Amuq, that like our own project used satellite imagery as a prospection tool, revealed a similar situation (Casana 2007: 201). This suggests that in many of the primary agricultural basins of the Fertile Crescent, the small tell site was the predominant form of rural settlement, and that that settlements and territory often went together as one indivisible unit Wilkinson (2010), with the tell functioning as a 'place holder' in the landscape for matters of land ownership and control of resources (Wilkinson et al. 2012: 173)

However, discussions which view tells as markers for long-term ownership should not overstress the role of the resident communities. The inhabitants of most small tells were probably not 'owner-occupiers', but communities obliged to provide tribute or taxation to regional elites. Thus the presence of a few sherds of imported Cypriot and Mycenaean pottery within surface collections taken from the even quite small tells might be read to imply the presence, on at least some small tells, of local headmen or officials with access to social and economic networks centred on larger settlements such as Qatna or Kadesh. In fact, when viewed in its totality, the creation and maintenance of substantial fortifications, the continued use of the same limited number of locations, and the likely presence of individuals with connections to wider networks, argues for the symbolic power of the fortified tell as an enduring fixed point in the landscape. We would argue that fortified tells had very much part of a world of increasing political control and management of agricultural production and storage by distant elites.

The diverse nature of larger sites

The status of Tell Nebi Mend (generally believed to be the site of Kadesh) as a single tell of 9 ha in area, is in marked contrast to the neighbouring centre of Qatna which covers a little over 100 ha (Morandi Bonacossi 2007: 73). This begs the question of why there was such a massive difference in size between the two major 2nd millennium BC centres in western Syria ?

However, the situation with regard to Nebi Mend is a little more complicated. Only 3 km northeast of Nebi Mend lay the 22 ha site of Tell es-Safinat Nabi Noah (SHR 14), a ramparted rectilinear enclosure, with a wide external ditch from which the material for construction of the rampart was excavated. While it may seem counterintuitive for the two largest sites in the area to be located so close together, this situation is less odd if the two sites are understood as occupying different niches within a single regional system. SHR 14 is unusual on several counts. Firstly, the surface of interior of the site is little more than 2- 3 m higher than the fields immediately outside the ditch. When allowance is made for the build-up of for wash deposits from the inner slopes of the rampart, this difference does not suggest sustained occupation. This is a very different situation to that indicated at Nebi Mend, and most other tells in the area. Another indication came from the investigation of several rows of small pits that had been dug into the site by local farmers for planting olive trees. Inspection of the spoil heaps beside each pit revealed distinct spatial concentrations of large stones, typically used for the foundation courses of walls, pottery sherds and cream-yellow floor-plaster (Figure 12a-c). This suggests the presence of substantial structures close to the ground surface, along a line connecting the two gates, which are visible as gaps in the eastern and western ramparts. Finally, it would seem illogical to position a site intended to house a substantial residential population, at a distance of 1 km from the Orontes, unless animals were likely to be available for water transport. Taken as a whole, the evidence suggests that SHR 14 is most likely to have been a special purpose site of some kind, perhaps a fortress, storage complex, or barracks. Clearly all large sites cannot be treated as direct equivalents, and analyses that rely upon site area alone as an indicator of 'centrality' require careful handling.

In fact, Bronze Age sites as large as Qatna are uncommon in western Syria. In many areas the largest sites do not exceed 20-30 ha, while in most areas the vast majority of tells are in under 5 ha in size, predominantly in the range 1-3 ha. as evidence by the situation in the Amuq (Casana 2007: 203, Fig. 4), the Akkar Plain (Thalmann 2007: 222), the Qatna Survey (Morandi-Bonacossi 2007: 71) and the Beqʿa (Marfoe 1998: 168, Fig. 38). The Upper Orontes area conforms to this pattern (Table 1); and apart from SHR 14 discussed above, the two largest tells in the study area are Nebi Mend which is 9 ha in extent, and SHR 254, also c. 9ha, which is located towards the south-eastern extent of the Southern Marls

However, another possible explanation for the small size of Nebi Mend is that this tell was simply one component of a 'Kadesh' that consisted of a zone of relatively dense but discontinuous activity extending along the banks of the Orontes from Nebi Mend itself in the south to Tell el-Bahr (SHR 212), some 7 km to the north (and currently within Lake Qatina). There are six tells with MBA and/or LBA occupation, positioned along this 7 km stretch of the river, and these have a combined area of 18 ha (Figures 13, Table 1). As most of these have suffered erosion by the lake since the construction of the Roman dam, and in particular the subsequent raising of the water level by its extension in the 1920s (Calvet and Geyer 2002: 32), this figure is probably a minimum. In addition the project recorded several additional artefactual concentrations that produced 2nd millennium BC material, all of which lie very close to the current margins of the lake and have therefore been massively eroded (SHR 1036 – 2 ha; SHR 211 – 1 ha, SHR 498 – 0.5 ha). The presence of wall lines visible among the stones on the bottom of the lake in the area between SHR 1036 and SHR 212 (these may not be continuous but are certainly visible in the shallower water

close to each site) suggest that the expansion of the southern end of the lake may have eroded-away a rather more extensive concentration of activity in that vicinity. Finally, if SHR 14 were to be added, the total settled area would fall somewhere in the region of 50 ha, much closer to what would be expected of a major power. Unfortunately, the intriguing possibility that Kadesh might represent a dispersed centre rather than having been focused on Tell Nebi Mend alone, could only be tested with a programme of intensive survey along this densely occupied and cultivated stretch of the river.

Iron Age through Hellenistic Settlement in the Upper Orontes Valley (Figure 13)

Iron Age Settlement in the Upper Orontes Valley (Figure 13)

The survey has produced little recognizable Iron I material. However, with Iron II both the northern and southern marls witnessed a return to a mainly tell-based settlement pattern, based largely on the reoccupation of sites used in the Middle and Late Bronze Ages. The absence of Iron I material was also observed in the region around Qatna (Morandi Bonacossi 2007: 85, Fig. 14). While Iron I occupation may indeed be absent, an alternative explanation is that we are simply unable to differentiate Iron I ceramics clearly from those forms typical of the latter part of the LBA (on this point see also Morandi Bonacossi 2013: 125). Clarification must await the excavation of suitably stratified remains.

The concentration of Iron II settlement on existing tell sites appears to confirm their role as 'place-markers' in both the social and economic landscape, and may have implications for the continuity of social memory and land tenure through the LB/Iron transition. That said, the appearance of Iron Age material on several small 'flat sites, that had not been occupied during the Middle or Late Bronze Ages, might hint at some modification of land-management patterns. There is very little evidence for Iron Age activity in the basalt, a pattern similar to that noted by Haidar-Boustani et al (2005-06: 14) for the region west of Lake Qatina.

While the historical sources offer few specific details relating to the survey area itself, the region must have been closely involved in the political changes that marked the Iron Age in the wider Orontes Valley. These included the growth of a new regional power at Hamath, a series of Assyrian military campaigns leading eventually to the conquest of the Orontes region by the Assyrians in the late 8th century BC, its eventual absorption into the Assyrian provincial organization, and a combination of the deportation of parts of the original population and the re-settlement of people from other regions of the Assyrian Empire (Bagg 2011: 191-269; Bryce 2012: 253-76). It must be admitted however, that these changes cannot be linked directly to the changes apparent in the settlement record, although both the appearance of a small number of new Iron Age settlements located off the earlier tells, and the lack of activity in the basalt might reflect new political or economic drivers. In fact, from a local perspective, the most obvious change from the Bronze Age world may have been that the key centres of political power now lay outside, rather than within, the survey region. Kadesh was now no longer a major political force, and the region may well now have served more as a primary producer and supplier of taxes for more distant political centres, than as a consumer.

The Iron II-III ceramics from the survey are fairly typical for west Syria, although it is worth noting that in terms of cooking pots, sites located to the north of Homs tend to produce the Inland Syrian holemouth form, while those south and west of Homs, such as Nebi Mend produce mainly basalt-tempered, short-necked cooking-pot forms, with parallels to the west and south (Whincop 2007: 205).

Hellenistic Settlement in the Upper Orontes Valley (Figure 14)

The tell-based settlement system continued into the Hellenistic period, although in the southern marls there were also a number of 'flat' sites, perhaps implying a further modification of the organization of landholding and agricultural production. Much of the Hellenistic pottery recovered can be dated only to the Hellenistic period in general. However, when the distribution of those forms that can be dated to either an early or later phase of the period is plotted, an distinct pattern emerges (Figure 15). For the forms that characterize the two phases see Reynolds (2014: 53-54).

In the southern marls ceramic forms falling early in the Hellenistic are distributed across the tells that were occupied in the Iron II-III. However, distinctively Late Hellenistic forms show a particular concentration around Tell Nebi Mend, which, refounded as the Hellenistic settlement of Laodicea-ad-Libanum, is first mentioned in connection with Antiochus III's campaign in 221 BC (Cohen 2006: 116). An increase in military activity in the Beq'a, as the result of wars between the Lagids and Seleucids in the 3rd and first half of 2nd centuries BC (Sartre 2001: 188) may have boosted the significance of the site, which may subsequently have become a major a focus of activity. The appearance of Hellenistic period material on one or two flat (i.e. non-tell) sites in the vicinity of Nebi Mend may bear witness to this development (Figure 15). In the northern marls, Early Hellenistic forms reflect the continuation of the pattern of tells along the Orontes that existed in Iron II-III, while Late Hellenistic forms are less widely distributed (Fig. 15).

There ceramic data suggest that there was a reoccupation of the basalt landscape during the Hellenistic, perhaps connected to the growth of the centre of Arethusa (Rastan) on the Orontes some 10 km to the east, which according to Appian, was founded by Seleukos I Nikator in the 3rd century BC (Cohen 2006: 101). While there was some continuation of tell based settlement, sites of other types were also occupied, including possible square towers (Newson et al. 2008-9: 27).

In short, settlement early in the Hellenistic resembles that of Iron Age in many ways, with a considerable amount of settlement remaining on tells. Later in the period the southern marls appear to witness a concentration of activity in the area around Tell Nebi Mend, perhaps associated with the development of a new foundation there. Although Tate's (1997: 57) suggestion that the region around Emessa contained no sedentary peoples is no longer tenable, the evidence hints at some reduction of settlement, except in areas in the vicinity of major Hellenistic centres. This is consistent with the impression given by the historical sources of instability in southern Syria generally (Sartre 2005: 32-4), and in the area around the Beqʿa and mountains of Lebanon in particular (Sommer 2001: 83). This point is echoed in the comment of Strabo that much of the region from Euphrates to the Beqʿa was under control of *scenitae* (tent-dwelling) tribes, and that even the Kings of Emessa themselves lived in tents. One might imagine a growing contrast between areas controlled by tribal rulers and a patchwork of more effectively Hellenized polities along the Orontes. The river, as a perennial source of water, would have formed a

key route connecting the Seleucid political centre at Apamaea with the Beqʿa Valley, Baalbek and the south, and thus its continued control by Hellenized settlements would have been important both politically and militarily.

Classical and Medieval Settlement in the Upper Orontes Valley

Landscape Reorganization in the Roman period

The Roman period, witnessed a significant shift of settlement away from tells (Figure 16). Most sites that produced Roman period material were low relief 'flat' sites, ranged between 1-4 ha in size, and sometimes bore fragments of masonry or tile on the surface and appear in new locations. These sites are interpreted as the remains of unfortified, agricultural settlements, and when named on Syrian or French maps they are usually associated with toponyms that include the term 'k*hirba*' (ruin) rather than 't*ell'.*

Less obvious to ground reconnaissance than tells, sites of this kind were readily identified by their distinctive reflectance patterns on Corona satellite imagery. This results from an association between settlement debris, and areas of deposit with a surface reflectance that is higher than that of the surrounding /natural' soils. On the ground, settlement debris appears as areas of distinctive light coloured soil. As our project has used scanned Corona negatives rather than positives, however, in our Corona images the areas of high-reflectance soils that characterize sites tend to appear darker, rather than lighter, than their surroundings (Philip et al. 2002b: 113, Figure 3).

It is important to grasp that in the Homs marls at least, virtually the entire Roman and Medieval settlement record is composed of sites of this kind. This is a result of the use of mudbrick as the main building material, and the attrition caused by the long-term exploitation of this region for agriculture. 'Late' settlement is accordingly much less obtrusive in landscapes like those of the Homs marls than is the case in rocky regions where standing architecture is relatively common, and it is possible to identify individual buildings, and even discern entire settlement plans. The basalt landscape west of the Orontes is a case in point (Newson et al. 2008-9: Fig. 4).

The ceramic indicators that we use to define 'Roman' first appear in the region around the mid-1st century AD (Reynolds 2014: 57). A significant number of the new 'flat' settlements have produced material that can be ascribed to the later 1st through the 3rd centuries AD (Figure 17), suggesting that the major reorientation of the landscape took place within that period, that is subsequent to the region's annexation to Roman *Syria*, an event that Sartre (2005: 77) places between 72 and 78 BC. The absence from rural sites in the Homs region of the range of imported amphorae that were recovered at the port of Beirut during the 1st to mid-3rd centuries AD, and the limited evidence for connections with the littoral (Reynolds 2014: 57-58), might suggest that rural sites in the Homs region, were orientated towards agricultural production, rather than the consumption of non-local products. Some indication as to the orientation of traffic may be taken from ceramic connections with Baalbeck and the Beqʿa (Reynolds 2014: 57).

A number of these sites reveal one or more areas of topographic depressions on the surface (Fig. 18). The latter were frequently noted in the Syrian 1:25,000 map series,

and when plotted, the depressions were often on, or located close to, areas of high reflectance, suggesting an association between depressions and 'late' settlements, although by no means all depressions are directly associated with sites of specifically Roman date (Figure 19). These we interpret as underground cisterns, most probably clay-lined, that are in the process of collapsing as a result of increasingly intensive agricultural practices.

Also of note is the presence of a meandering channel, which in the more southerly part of its course revealed evidence for a bank on either side (Figure 20). This feature runs roughly south-north, a direction that differs from that of the tributary watercourses of the Orontes, which run from south-east to north-west and along which the tell sites are located. In addition, the wadi systems follow a marked downward gradient (in the region of 10 meters of altitude per kilometre of length), while the height of the channel drops less than 5 m along its entire course of just under 10 km. This very gentle gradient is confirmed by the presence of meanders and, along its northern extent, multiple channels. The channel also appears to have been directed to run around the obstacle represented by the Bronze Age settlement of SHR 14, and must therefore post-date the construction of the ramparts. A section excavated across the channel a short way south of SHR 14, produced freshwater mussel shells within the silty-grey channel fill, indicating that its water was derived from the Orontes, presumably by a dam located around 2.2 km south of Nebi Mend (Philip et al. 2002b, 116-7, Fig. 6). Unfortunately the channel cannot be traced back to its exit point from the river, either using Corona imagery, or on the ground, because the relevant area has undergone massive alteration in recent decades.

As the channel terminates close to a Roman-Byzantine settlement (SHR 332), and other sites located along the channel are generally of Graeco-Roman date (Fig. 20), it makes sense to view it as having been constructed during the Roman period. Related is a faint linear shadow, which runs in NE-SW direction, between 0.5 and 0.8 km south of the channel, and which swings around to the west to intersect with the channel at a location some 0.6 km south of SHR 014 (Figure 20). The Corona imagery shows several small (but unidentifiable) features at the intersection of the road and channel. While these could not be identified in the field as the area has been massively altered since the 1960s, fieldwalking close to the point where the two features cross recovered a broken section of a rough cylindrical column, which we interpret as part of a milestone. This suggests that we have evidence, on the Corona imagery for both an artificial water channel and a road, presumably that from Emessa to Laodicea-ad-Libanum and onwards to Baalbeck,.

Agricultural Intensification and the Development of Infrastructure in the Roman period

Taken as whole, the Roman period demonstrates a very major reorientation of the landscape. In addition to the shift in settlement, and the construction of the channel and road noted above, the Roman period witnessed the development of numerous cisterns for onsite water storage, the construction of the dam at Qatina (Abdulkarim 1997; Kamash 2006: 70), and the appearance in the landscape for the first time of significant numbers of both stone rotary mills and weights for large oil-presses.

The Roman period also witnessed a degree of intensification of activity in the basalt landscape (Newson *et al*. 2009-10), thus representing the second such 'boom' for the region. As in the Chalcolithic / EB I-III (Philip and Bradbury 2010), Roman period

developments in the basalt appear to be related to a phase of expanded connectivity with the wider region (Horden and Purcell 2000: 5). Here, the most visible Roman feature is the well-preserved evidence for cadastration (Abdulkarim and Olesti-Vila 2007: 265). The walls of the latter appear to relate to a number of stone-built villages, suggesting that their development formed part of a Roman-period restructuring of the agricultural landscape. So, while the initial reoccupation of the basalt region in the Hellenistic period might have initiated by the development of the city of Rastan, and interest in the Orontes as a strategic communications route, we suggest that it may have been subsequently driven by demand for agricultural products by the city of Emessa and the occupants of the Roman military base of Raphanea. The latter was in use during the later 1st - mid-3rd centuries AD (Gschwind et al. 2009) and was located only 36 km north-west of Homs, that is less than 20 km distant from many villages in the Homs basalts. The region west of Lake Qatina also demonstrates a marked increase in settlement during the Hellenistic, Roman and Byzantine periods (Haidar-Boustani et al 2005-06: 14).

In light of all these developments, we feel that Abdulkarim and Olesti-Vila (2007: 265) are probably correct to ascribe the construction of the dam at the north end Lake Qatina, the major expansion of Homs as an urban centre, and the cadastration discussed above, to a period between late1st and the end of 2nd centuries BC, although Kamash (2006: 70) favours a date in the 3rd century AD for construction of the dam. These activities would certainly constitute a logical development of the Roman annexation of the city and region. The changes in settlement seen during the Roman period, may be the most visible symptom of a wider reorganization of agricultural production. We might suspect, for example, that the move away from tells would also have involved changes to the system of land-ownership and tenure. Sartre (2005: 210) has drawn attention to the existence of imperial estates in Syria, and suggests that we should consider the status of areas such as Emessa, where local dynasties had been suppressed and the lands annexed by the empire. Such a scenario might well have provided the political and economic context for the investment that would have been necessary to support the kind of large-scale infrastructural projects outlined above. Another interesting feature of this period is the presence, for the first time, of clay tiles on the surface of many sites in the southern marls. This surely implies the adoption of new forms of architecture – presumably mudbrick houses with sloping tiled roofs and walls reinforced by timber to support the weight.

We have suggested above that the consolidation of EBA settlement in the Orontes Valley provided a necessary prerequisite for the expansion of activity into the steppe in EB IV. One might ask, then, whether the intensification of activity around Homs in the early part of the Roman period, and in particular the explicit recognition of the relationship between investment in infrastructure, and increased agricultural productivity, did not in some way underpin the massive expansion of settlement to the east in the Byzantine period that has been identified by the *Marges Arides* project, and to which as Geyer (2009: 37-40) has demonstrated, successful water management was essential. In this context the apparent decrease in site numbers between the Roman and Byzantine period and the subsequent increase in the Early Islamic period may reflect the success of expansion to the east (Figures 17, 21, 22) during the Byzantine period in particular.

Byzantine and Islamic Period Activity – broad continuity

Depressions do not only plot close to Roman period settlements. They also show a clear association with sites producing Byzantine (Figure 21) and Early through Middle Islamic period material (Figure 23), down to the mid-10th century AD at least. In fact, while ceramic roof tiles occur regularly on sites of Roman-Byzantine date, they were also recovered from some sites that produced mainly early Islamic material. For example, a sounding at SHR 477 (Khirbet Hattouni) undertaken by Dr Stephen McPhillips revealed a considerable quantity of roof tile in contexts where the ceramics were predominantly of early Islamic (Umayyad- Abbasid) types. This suggests that buildings with pitched and tiled roofs continued to be used and maintained (and probably constructed) until at least– the 10th century AD. Of course, there is no reason to believe that all such buildings were constructed in this way. However, this form of roof is not typical of Ottoman period domestic architecture in the region, while the low levels of tile reported from sites where the surface material is predominantly of Ayyubid-Mamluk or later date (e.g. SHR 505, SHR 521), suggests that there was an eventual reversion to mudbrick architecture with flat roofs made of timber and clay.

With a few exceptions, settlement does not appear to have returned to tells, even during the Mamluk period, and there are many elements of continuity in settlement form, location and size, from the Roman period through to the end of the 1st millennium AD. While the situation may have changed somewhat during the Mamluk period, when clay roof tiles appear less common, the evidence suggests that the changes in the rural economy that took place in the Roman period proved highly resilient,. We can now begin to see the extent to which the reorganization of settlement during the Roman period, set the tone for subsequent developments in rural settlement in the Homs region.

Conclusion

As in the Amuq (Casana 2007), settlement in the study area can be divided into three successive phases: an initial period of dispersed settlement, a nucleated landscape of tells, and a landscape of undefended villages. Prior to the 4th millennium BC, settlement was relatively dispersed, although the presence of what appear to have been extensive Neolithic occupations in the basal levels of Tell Nebi Mend, and subsequently at Arjoune, suggest the existence of a regional centre. A number of smaller Neolithic settlements is also documented, some by the presence of limited quantities of Neolithic material at later tell sites. A number of sites that did not develop into tells, and a scatter of material along wadi margins, points to activity dispersed across the landscape.

Settlement increased in intensity during the 4th– early 3rd millennia BC, with virtually all later tells now occupied. However, the nucleated tell landscape appears to crystalize during the EB IV period. It is probably no coincidence that this is the period during which we see the emergence of elite-dominated, state-like polities in western Syria, the prime example being the Kingdom of Ebla. It is not clear at what point tells were first systematically walled, although the EB IV period is an obvious candidate. That said, the first *unequivocal* evidence for a defensive wall at Tell Nebi Mend dates to the beginning of the MBA.

The marked continuity of settlement on individual tells, the long duration of the tell landscape, the scale of fortification undertaken at what were quite small sites, and the limited evidence for non-tell occupations during the Bronze Age, combine to suggest that from the EB IV period onwards, these sites were intimately connected with control over land and agricultural production. Such control, we argue, was vested not in the resident communities but distant elites. However, the presence of Neolithic material on many tells suggests to us that, in contrast to the situation in the arid zone where the EB IV witnessed the appearance of many new settlements (Geyer and Calvet 2001; Wilkinson et al. 2014), emergent states did not create a new settlement landscape in the agricultural cores, but simply assumed control of, and presumably modified, the existing villages.

The very different histories of sites in the northern and southern marls during the LBA, we attribute to the decline of Qatna on the one hand, and the continuing importance of Kadesh on the other. This points-up the extent to which tell landscapes, as 'place-markers' and points of control could be tied to the fortunes of regional polities. The paucity of post 14th century material from the line of tells along the Orontes north of Homs, may reflect the declining importance of what had once been a major political boundary.

Despite the apparent gap in occupation during Iron I, the pre-existing tells continued to provide the core of the settlement system during the Iron II-III and Hellenistic periods, which testifies to their longevity as symbols that embodied a set of ideas around land and production. That said, the appearance of a small number of new settlements in both periods might suggest a degree of modification of the Bronze Age landholding patterns, perhaps related to changes in regional power structures. The concentration of activity around Laodicea-ad-Libanum during the Late Hellenistic period appears consistent with the strategic importance of the Orontes and Beq'a Valleys, and once again reveals the way in which settlement activity could be significantly influenced by political imperatives.

In contrast to the Amuq, where a major shift in settlement has been identified during the Hellenistic period (Casana 2007: 204), in the Homs region, the Roman period witnessed a major reorganization of the landscape. This we suggest began following the annexation of the Kingdom of Emessa to the empire, and was intended to enhance agricultural production, and thus revenues. This involved not just the foundation of a number of new settlements, away from the previous tell locations, but also the construction of a new agricultural infrastructure, including a land cadastration, hydrological systems, and the appearance donkey mills and large olive presses. The result was to change completely the distribution of population across the landscape. Although individual sites come and go, the overall system of unfortified settlements spread across the landscape, many making the use water cisterns, appears to have continued into the Islamic period. While roof tile may have gone out of regular use by the 9th or 10th centuries AD, the settlement structure of the Ayyubid-Mamluk periods, retained many of the characteristic of the pattern of dispersed agricultural communities created under Roman rule.

Finally, the basaltic landscape west of the Orontes appears to have run according a very different temporal rhythm. The two major episodes of settlement expansion, the Chalcolithic-EBA and Roman-Byzantine, we believe, relate to points in time during which when communities in the region were able to engage effectively with larger-

scale regional economies. These are separated by periods (MBA, LBA, Iron Age in particular) when activity was at a fairly low level, suggesting that the basaltic region – which was difficult to move around in – was not core to the wider Bronze and Iron Age regional economy. Inasmuch as it did engage with the former, this may have taken the form of the provision of livestock or human labour, rather than the systems of intensive agricultural production and storage that the landscape of tells in the Homs marls appears to represent.

Site ID	Area (ha)	Location
SHR_14	**22.6**	SM
SHR_49	**1**	B
SHR_65	**3**	B
SHR_81	**1.2**	B
SHR_83	**2.5**	NM
SHR_88	**1.1**	NM
SHR_90	**1.3**	NM
SHR_94	**7.8**	NM
SHR_97	**3.7**	NM
SHR_173	**2.1**	SM
SHR_183	**1.1**	SM
SHR 190	**1.8**	SM
SHR_191	**4.2**	SM
SHR_206	**2.1**	SM
SHR_207	**1.8**	SM
SHR_210	**2.2**	SM
SHR_212	**2.4**	SM
SHR_216	**0.6**	SM
SHR_229	**0.7 (estimate: site in military area)**	SM
SHR_251	**1.5**	SM
SHR_254	**9.3**	SM
SHR_255	**1.1**	SM
SHR_256	**2.3**	SM
SHR_264	**1.5**	SM
SHR_265	**0.4 (estimate: site in military area)**	SM
SHR_268	**0.6**	NM
SHR_270	**4**	NM
SHR_275	**0.7 (by lake, extensive fluvial erosion,)**	SM
SHR_286	**1.4**	SM
SHR_312	**3.7**	NM
SHR_315	**9**	SM
SHR_358	**Tell = 0.2 ha; lower settlement 7.3 ha**	B
SHR_668	**1.2**	B
SHR_670	**Just outside study area, below modern settlement; original size unknown**	B
SHR_860	**1.2**	B
SHR_866	**0.5**	B

SHR_880	**Size uncertain as extent obscured by modern settlement**	B
SHR_888	**0.8**	B
SHR_1038	**0.5**	SM
SHR_1102	**3.1**	B
SHR_1300	**4.7**	NM
SHR_1301	**4**	NM
SHR_1302	**7.5**	SM
TOTAL	**120.4**	

Table 1.List of tells with evidence for Bronze and/or Iron Age occupation, showing extent of the site and its location in the Southern Marls, Northern Marls or Basalt.

Site ID	Area (ha)	Hellenistic	Roman	Byzantine	Early-Middle Islamic
SHR_18	**2.7**	0	1	1	0
SHR_197	**3.5**	0	0	0	1
SHR_213	**2.9**	0	0	1	1
SHR_252	**0.6**	0	0	0	1
SHR_259	**2.9**	0	0	1	1
SHR_266	**3.4**	0	1	0	1
SHR_271	**5.4**	0	0	1	1
SHR_279 Tile Abundant	**1.8**	0	0	0	1
SHR_308	**3.2**	0	0	1	1
SHR_318 Tile	**1.7**	0	0	0	1
SHR_339	**1.2**	0	0	1	1
SHR_341	**n/a**	0	1	0	0
SHR_345	**2.9**	0	1	0	1
SHR_427 Tile	**0.1**	0	0	0	1
SHR_454	**3.1**	1	1	1	1
SHR_458	**1.4**	1	1	0	1
SHR_459	**3.6**	0	1	0	0
SHR_475	**0.9**	0	0	0	1
SHR_477	**5.2**	0	1	1	1
SHR_480	**1.1**	1	0	0	0
SHR_481	**n/a**	0	1	1	1
SHR_487 Tile	**n/a**	0	0	0	1
SHR_495	**n/a**	0	0	0	1
SHR_498	**0.5**	1	0	0	1
SHR_505	**n/a**	0	0	0	1
SHR_507	**n/a**	0	1	0	0
SHR_508	**4.0**	0	0	1	1
SHR_509	**n/a**	0	0	0	1
SHR_521	**1.6**	0	0	0	1
SHR_602 Tile	**1.6**	0	0	0	1
SHR_758	**1.1**	0	1	0	0
SHR_951	**2.5**	0	1	0	0
SHR_1000	**1.6**	0	1	0	1
SHR_1036	**1.9**	1	1	0	1
SHR_1039	**4.8**	0	1	0	0
TOTAL	**67.6**	**5**	**15**	**10**	**27**

Table 2. Flat Sites (NSA and SSA) with occupation dating to Hellenistic-end of Mamluk period

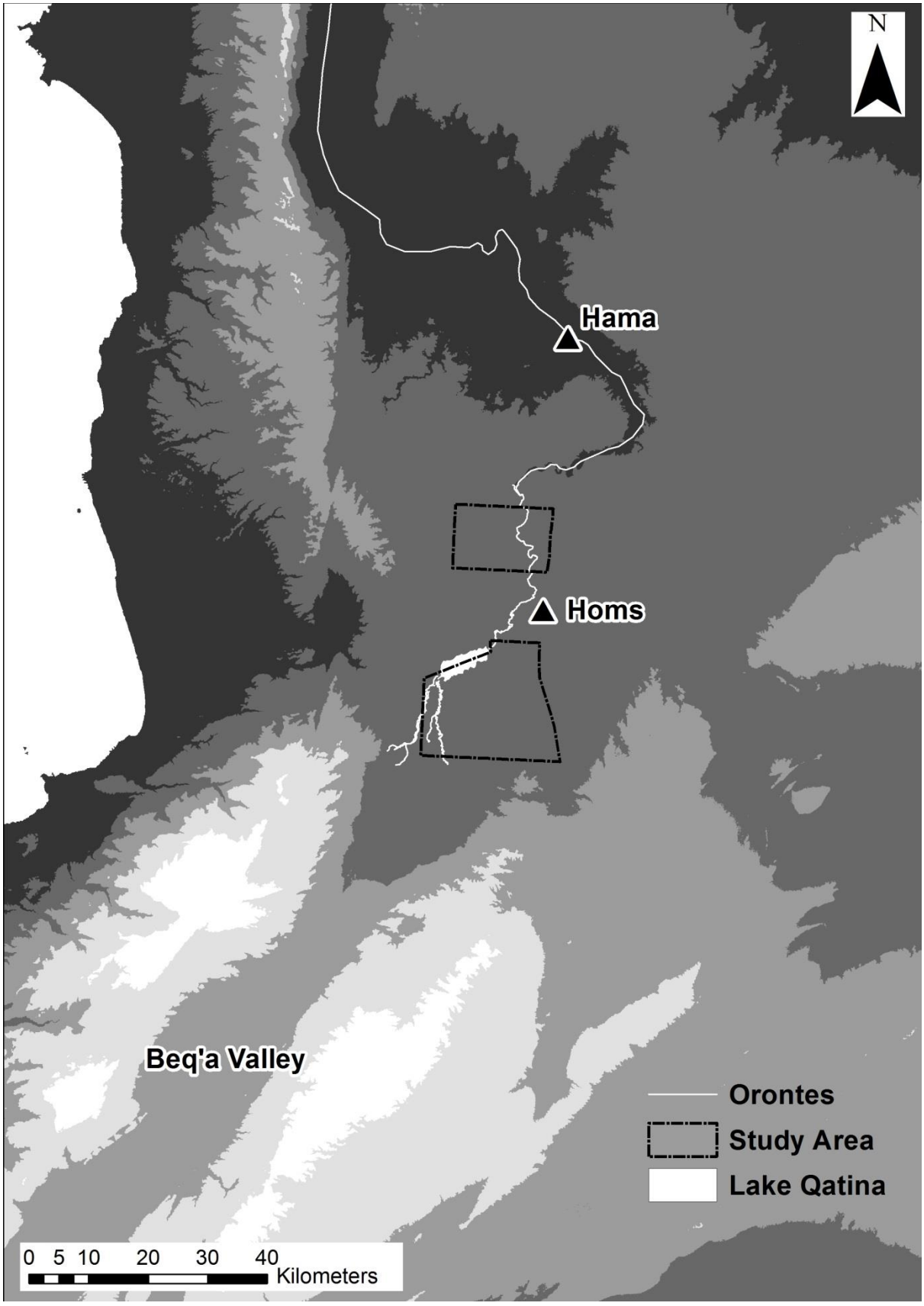

Figure 1 General map of western Syria showing the location of the Northern and Southern Study Areas

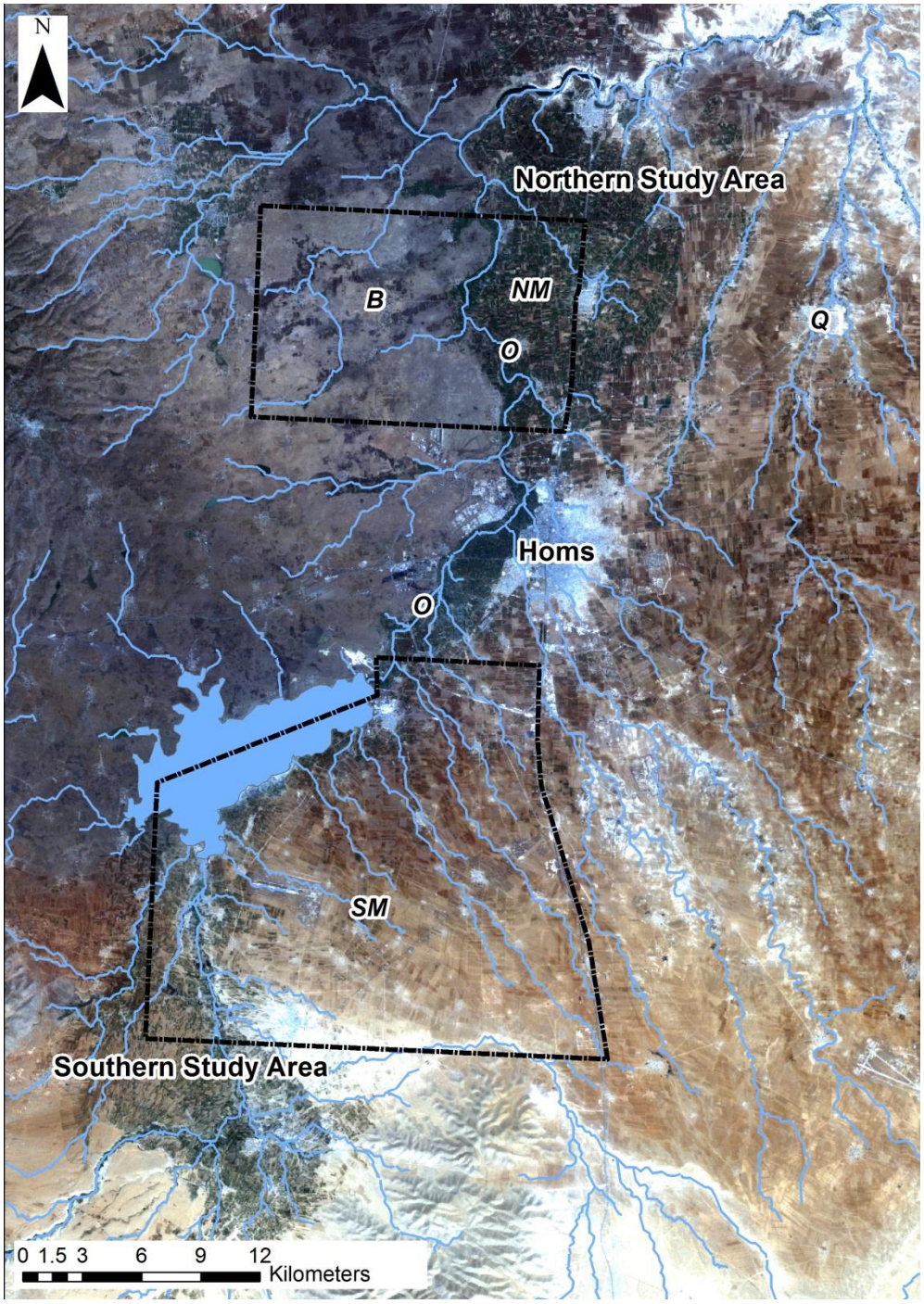

Figure 2 The Orontes Valley in the vicinity of Homs, showing geology and drainage. Abbreviations: B (Basalt), NM (Northern Marls), SM (Southern Marls), H (city of Homs) and O (River Orontes), Q (Qatna). Backdrop Landsat Natural Colour Composite, Bands 3,2,1. The drainage is reconstructed using a Digital Elevation Model. Because of the extent of landscape change in recent decades, we believe that this offers a better representation of probable past hydrology than can be obtained by plotting the pebble trails of the 20th century systems from 1960s Corona satellite photography.

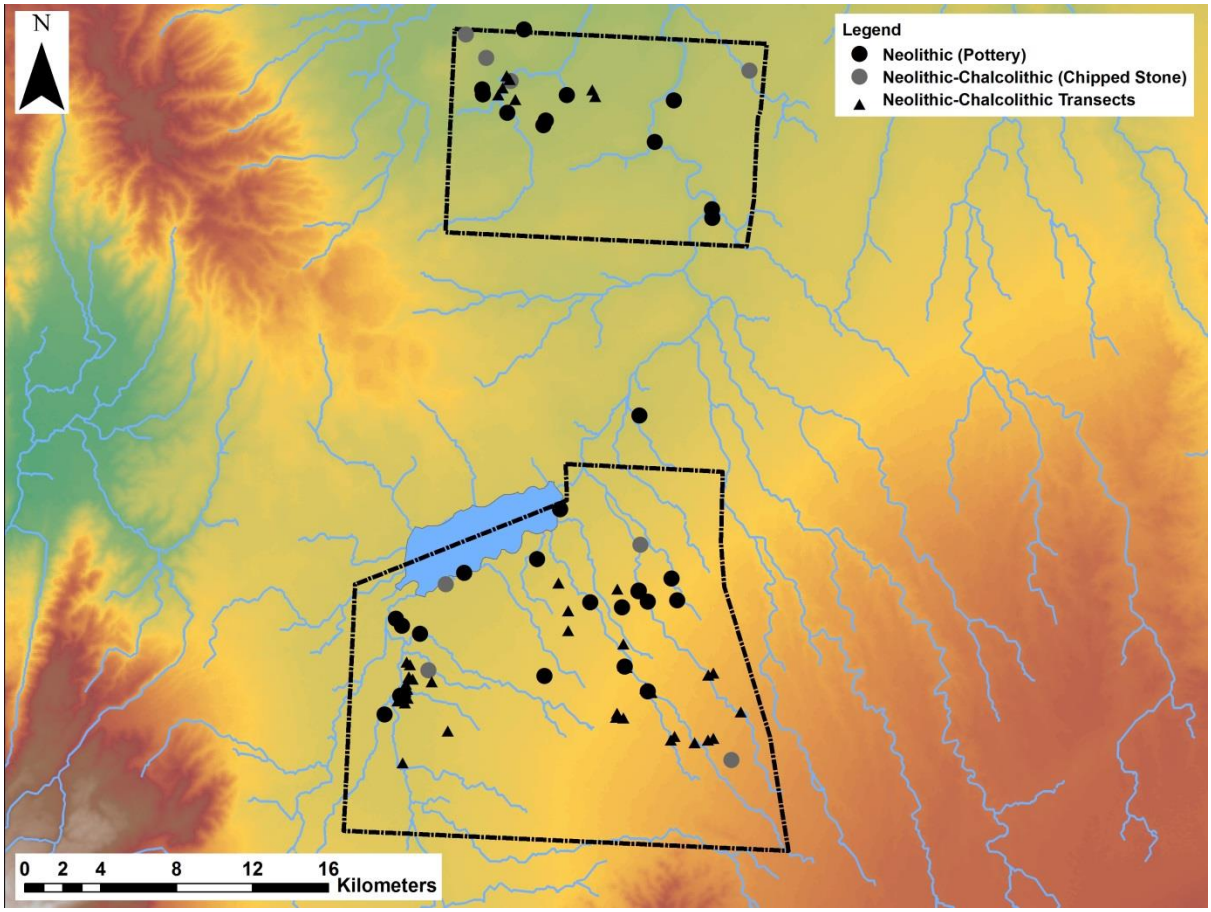

Figure 3 Distribution of Neolithic-Early Chalcolithic activity (i.e. 7th through 5th millennia BC). Where the identification is based on the presence of diagnostic chipped stone forms rather than pottery this is indicated by a grey circle. Triangles indicate offsite collection units that have produced material, usually chipped stone, of this date. The concentration along the tributary wadis of the Orontes is clear.

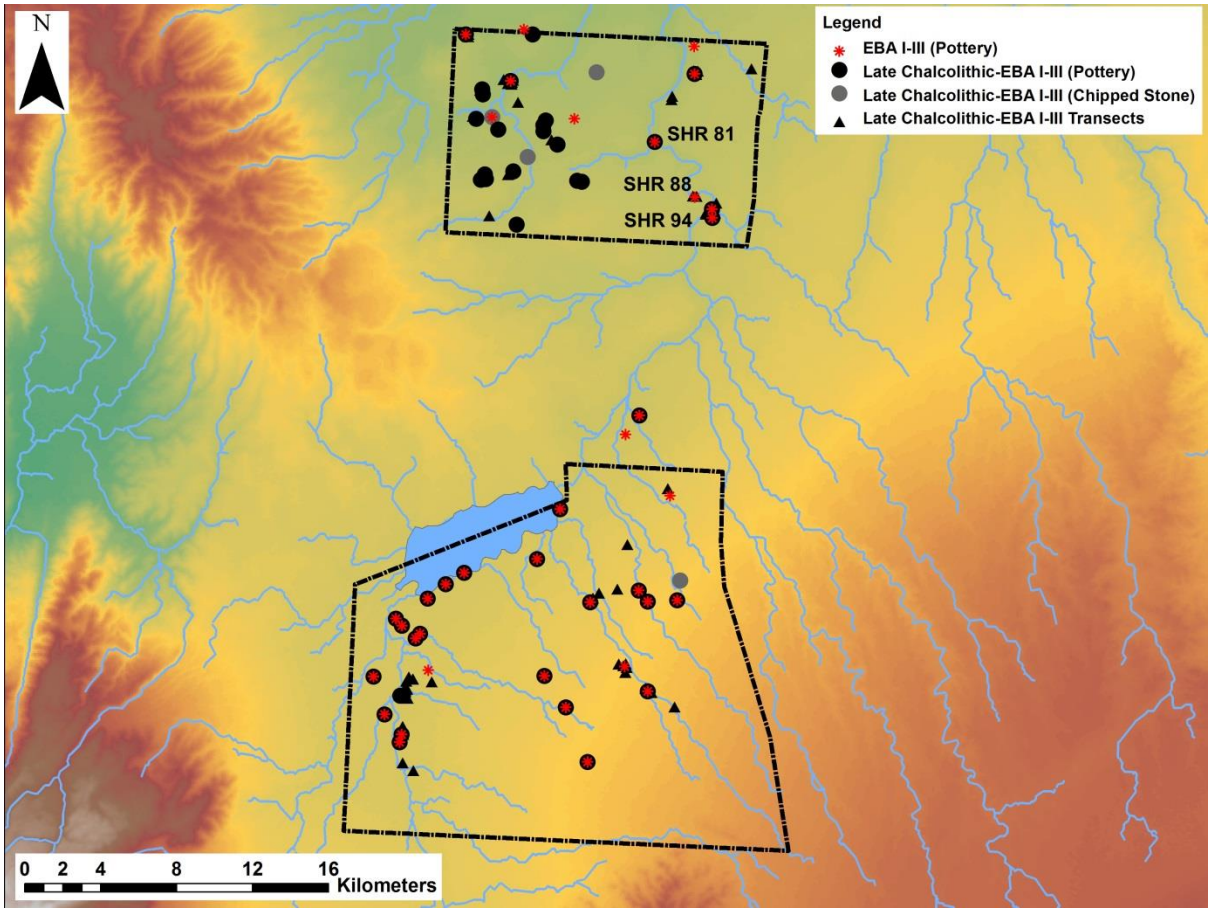

Figure 4 Distribution of Local late Chalcolithic and EBA 1-3 activity. Black Circles indicate sites that have produced material that can be dated no more precisely than to the 4th and earlier 3rd millennia BC. Red Stars indicate material that would conventionally be termed EBA 1-3 (later 4th and earlier 3rd millennia BC). Triangles indicate offsite collection units.

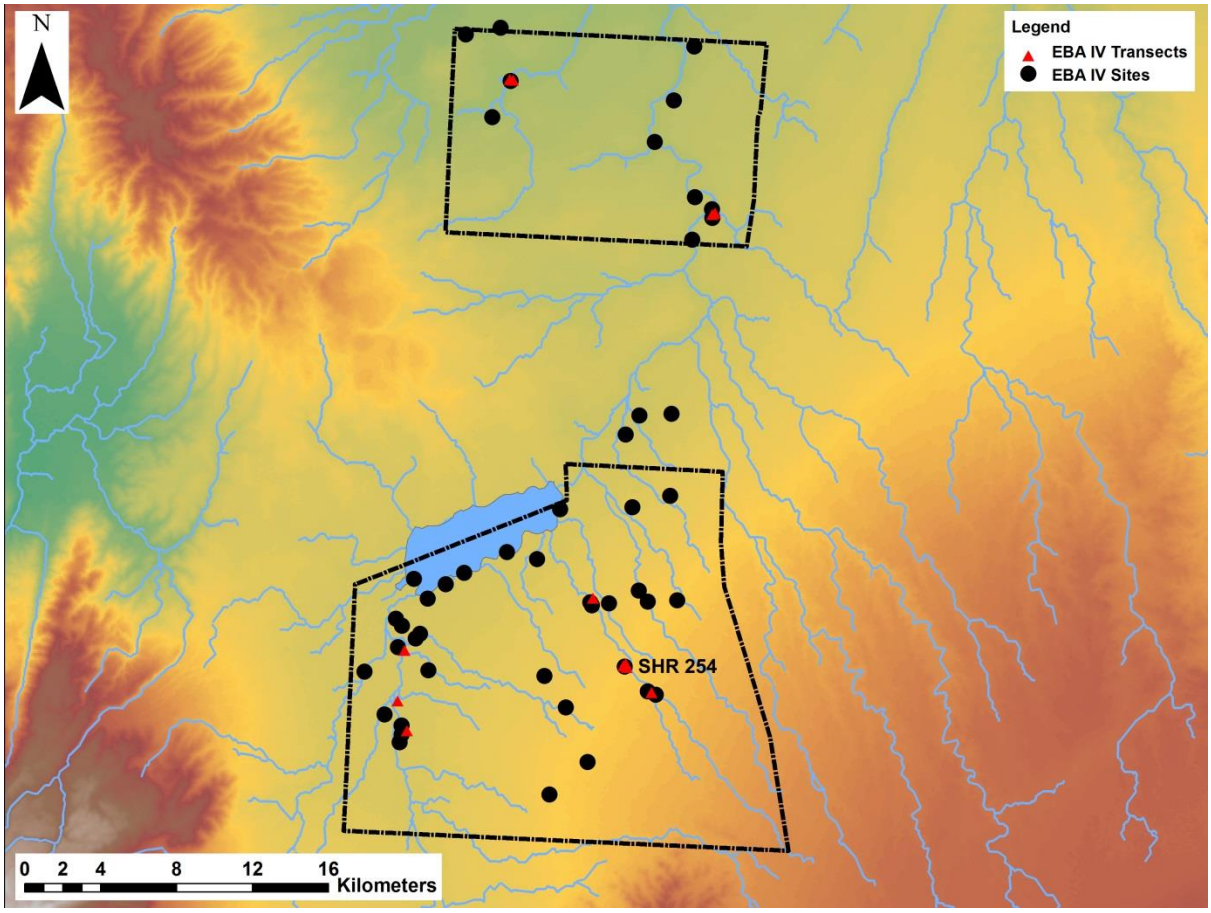

Figure 5 Distribution of EB IV period activity. Triangles indicate offsite collection units that have produced material.

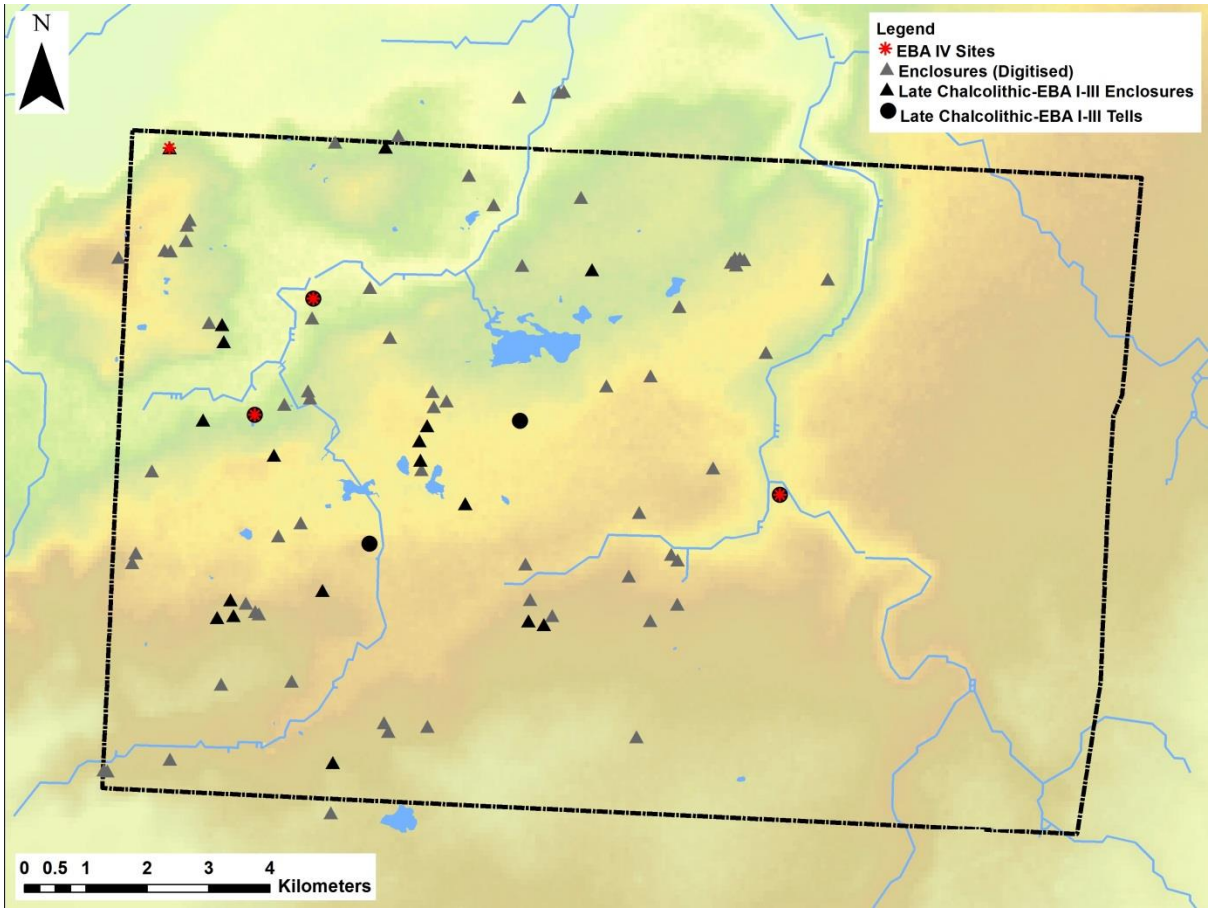

Figure 6 Chalcolithic through EB IV activity in the basalt region. Tells marked as circles. Black triangles indicate enclosures that have produced datable material, grey triangles enclosures that have been identified through satellite imagery but have either not been visited or are no longer extant. Red stars indicate sites that have produced ceramics of probable EB IV date.

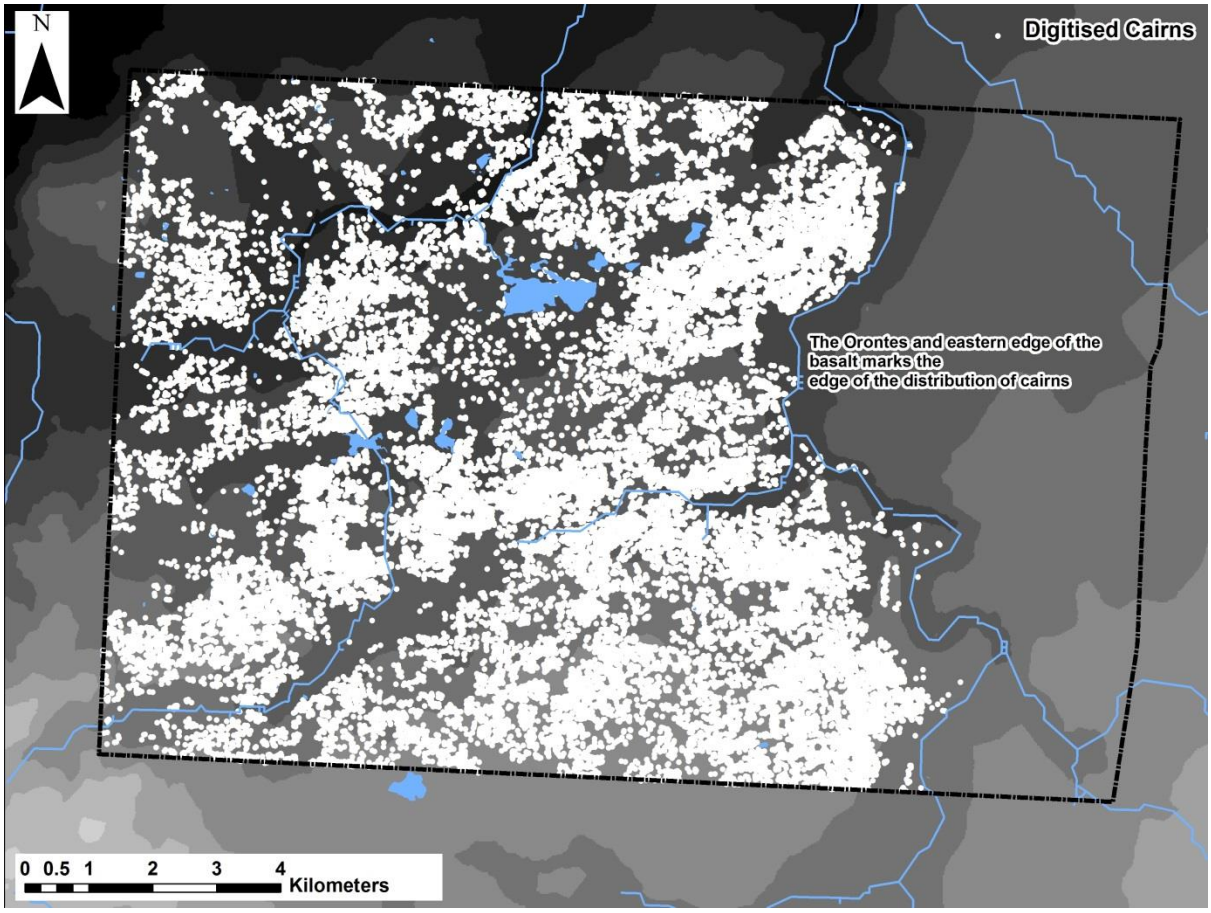

Figure 7 Distribution of cairns in the basaltic area.

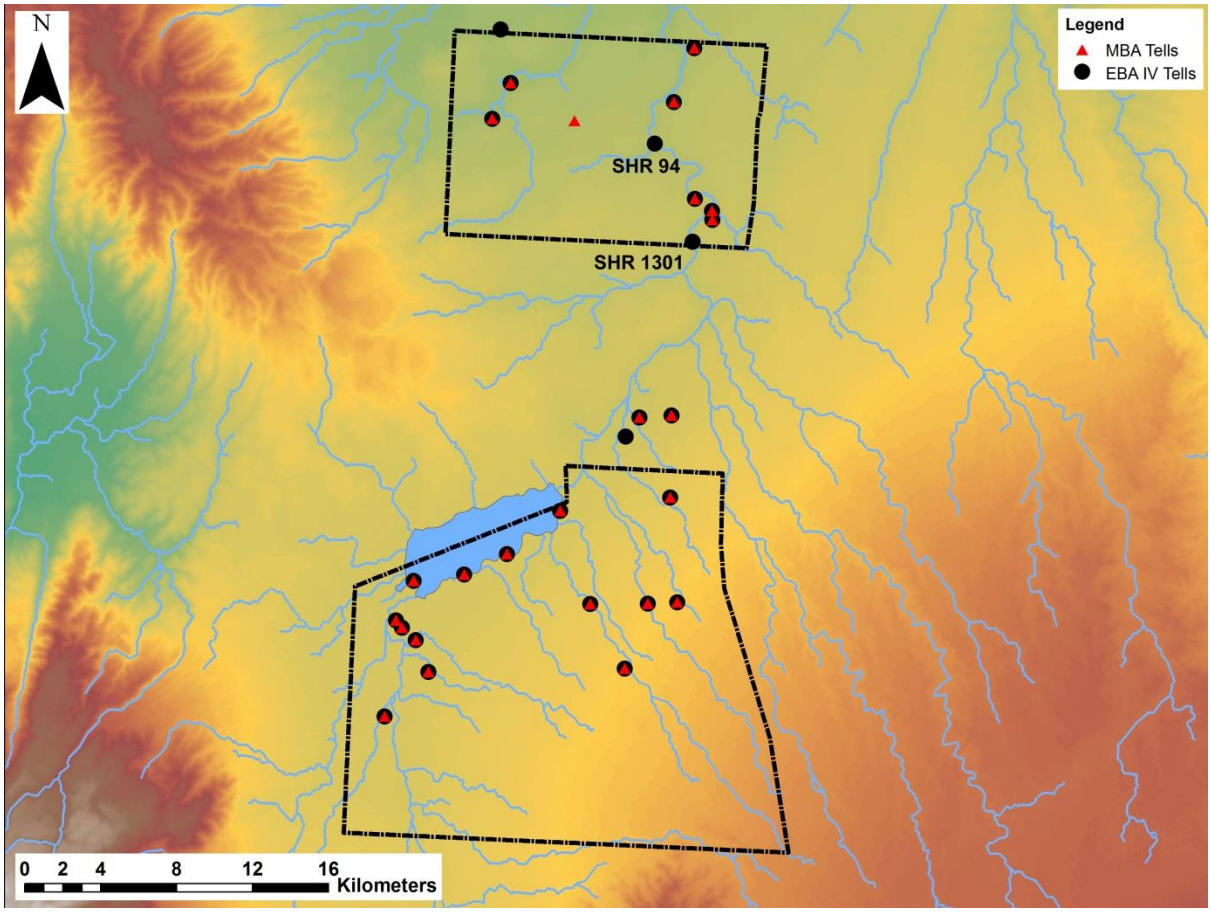

Figure 8 Tells with evidence of MBA activity, showing degree of continuity with EB IV occupations.

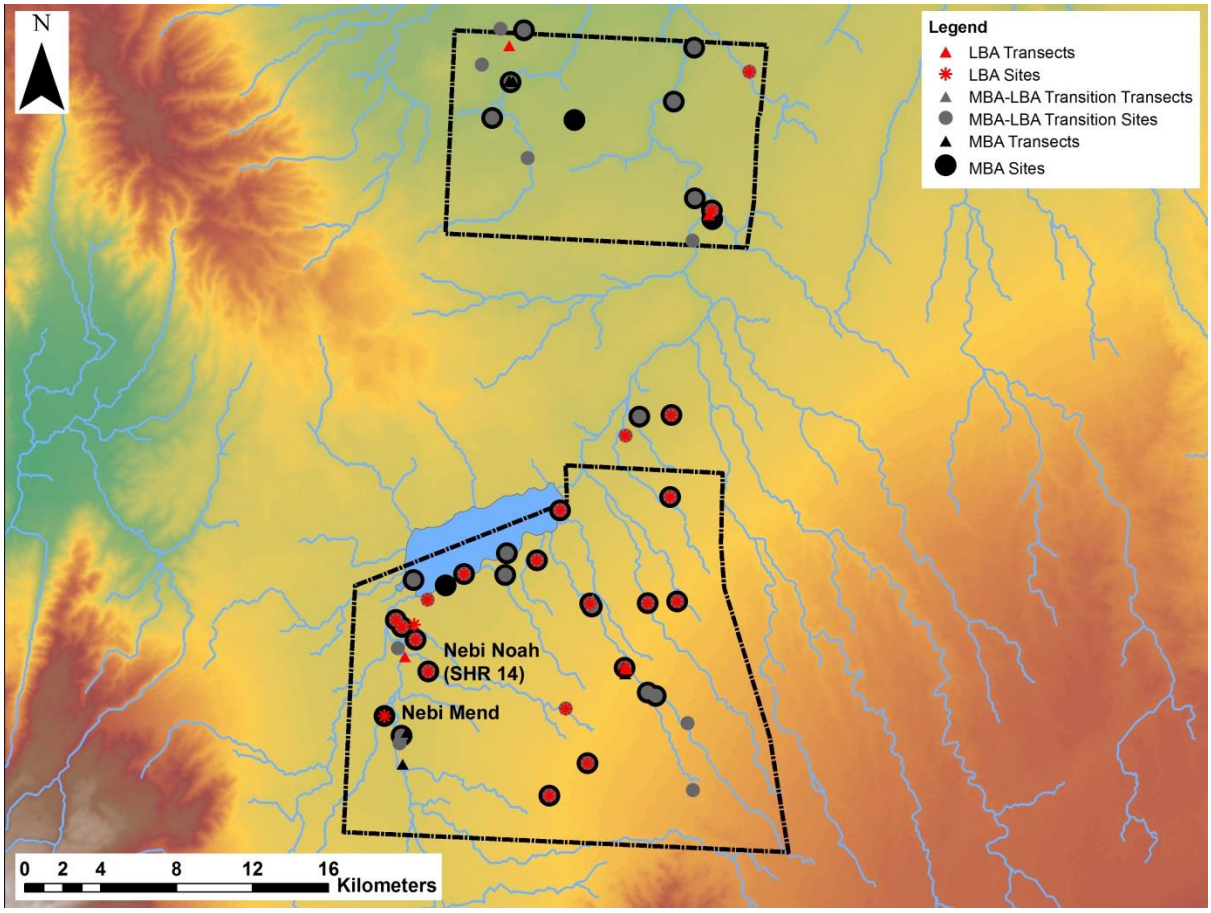

Figure 9 Distribution of activity MBA, MB-LB transition and LBA activity. The decline in site numbers through these three periods is particularly marked in the Northern marls. The small quantity of off-site activity may be indicative of an increasingly nucleated, even controlled environment.

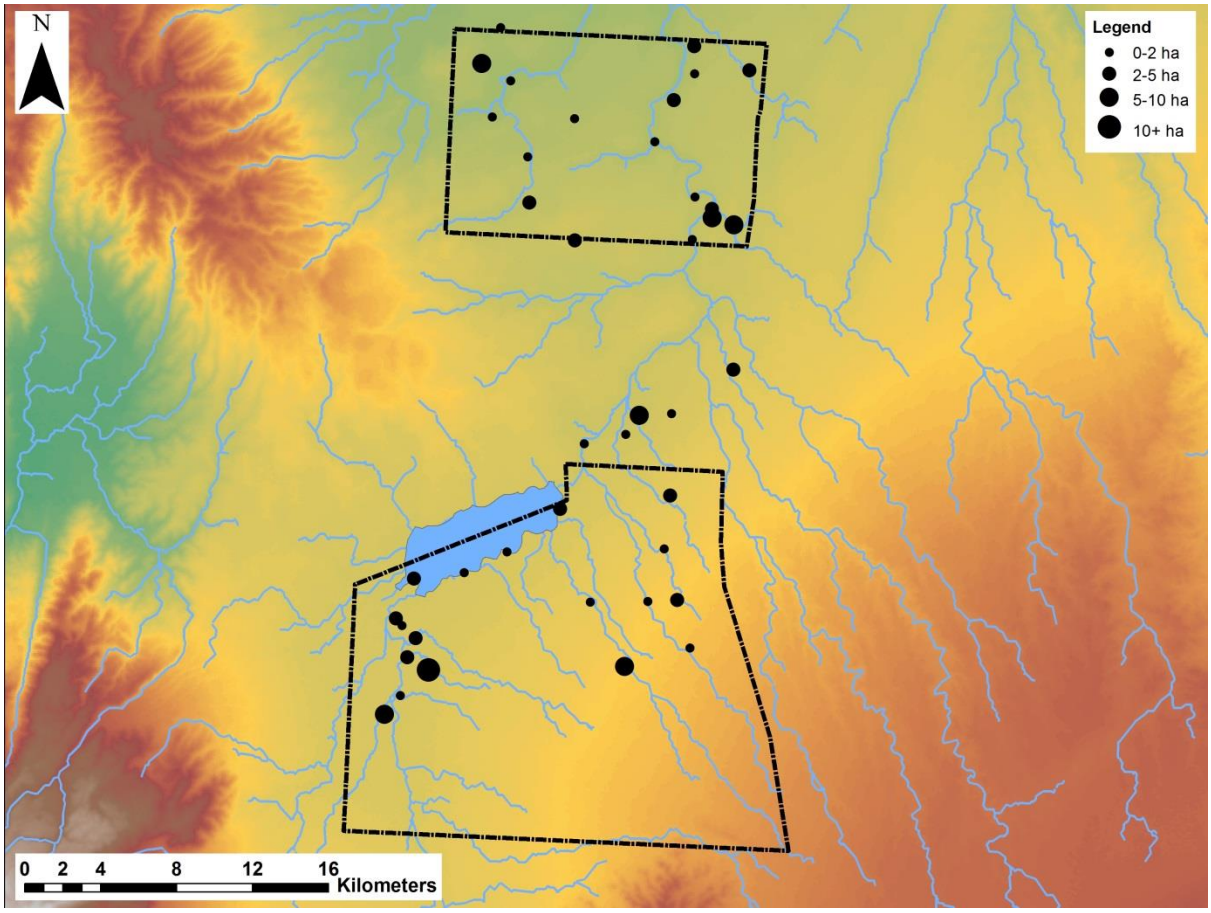

Figure 10 Distribution of tells across the Study Area. This map includes several sites that could not be visited as they were within military zones (indicated in Table 1). In such cases, sizes were established using satellite imagery. As no artefactual material was collected they do not appear on the 'period' maps, but are included here for completeness.

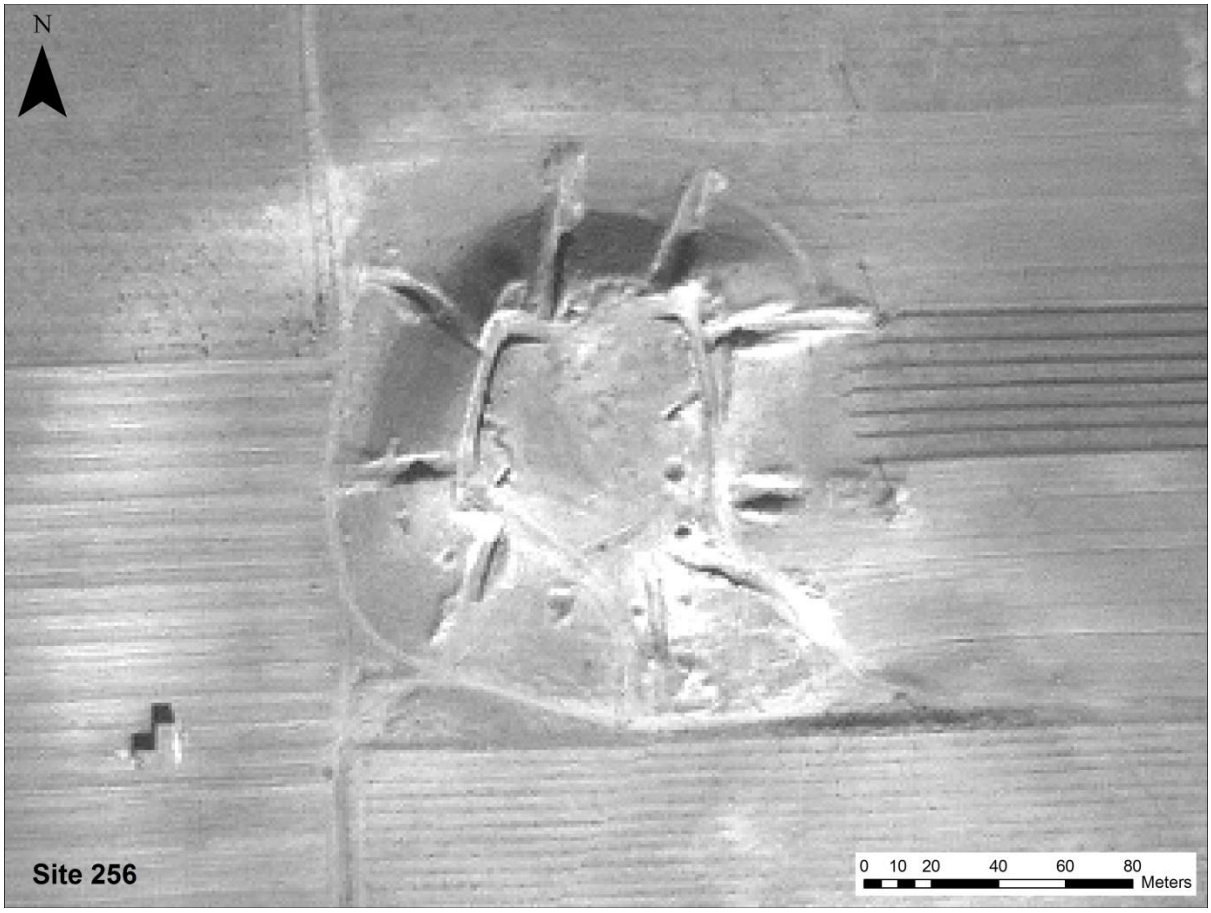

Figure 11 SHR 256 a typical example of a small, steep-sided tell. Ikonos Panchromatic image February 2002.

Figure 12a SHR 14 Inspection of spoil heaps from tree-pits revealed very distinctive concentrations of foundation stones.

Figure 12b SHR 14 Inspection of spoil heaps from tree-pits revealed very distinctive concentrations of ceramics.

Figure 12c SHR 14 Inspection of spoil heaps from tree-pits revealed very distinctive concentrations of plaster.

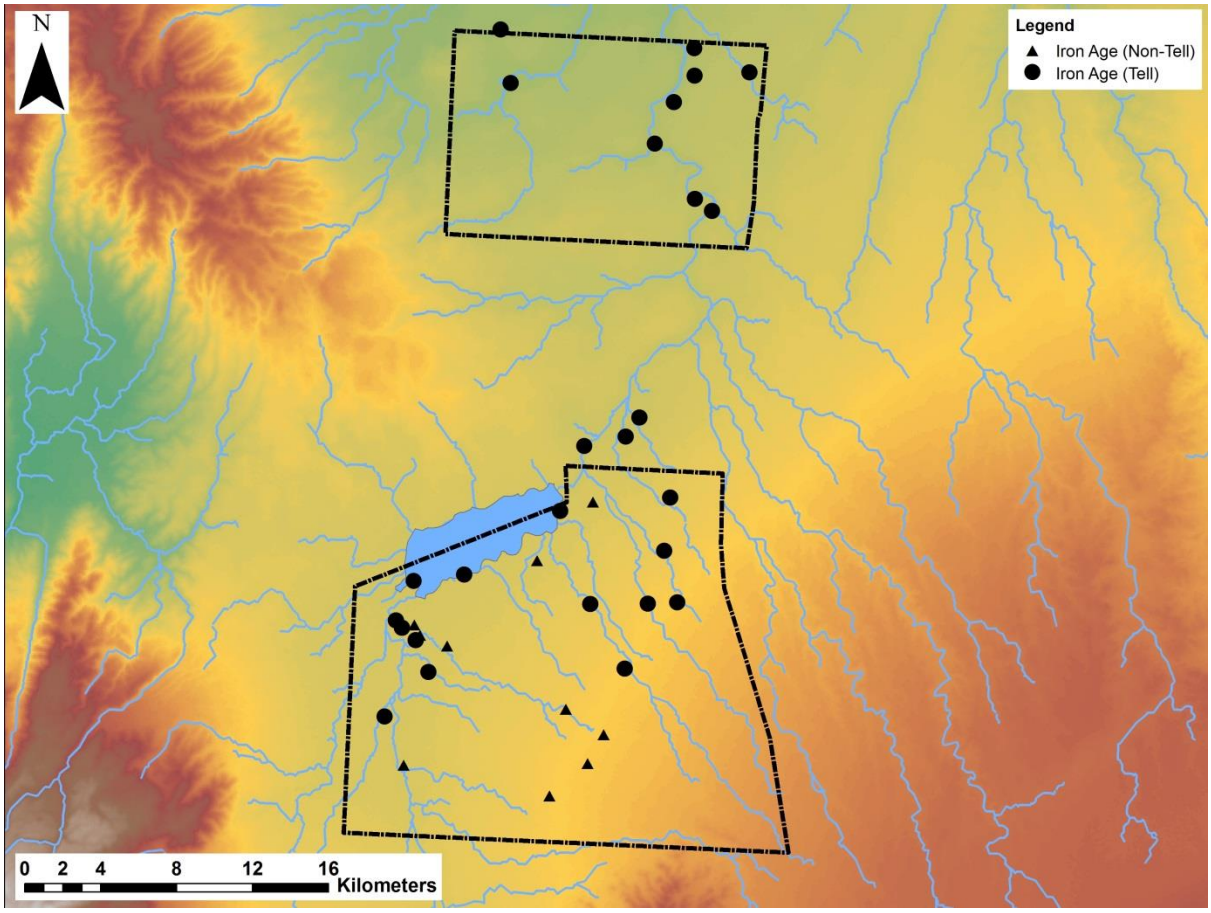

Figure 13 Distribution of Iron Age activity, circles denote tells, triangles ‘flat’ sites.

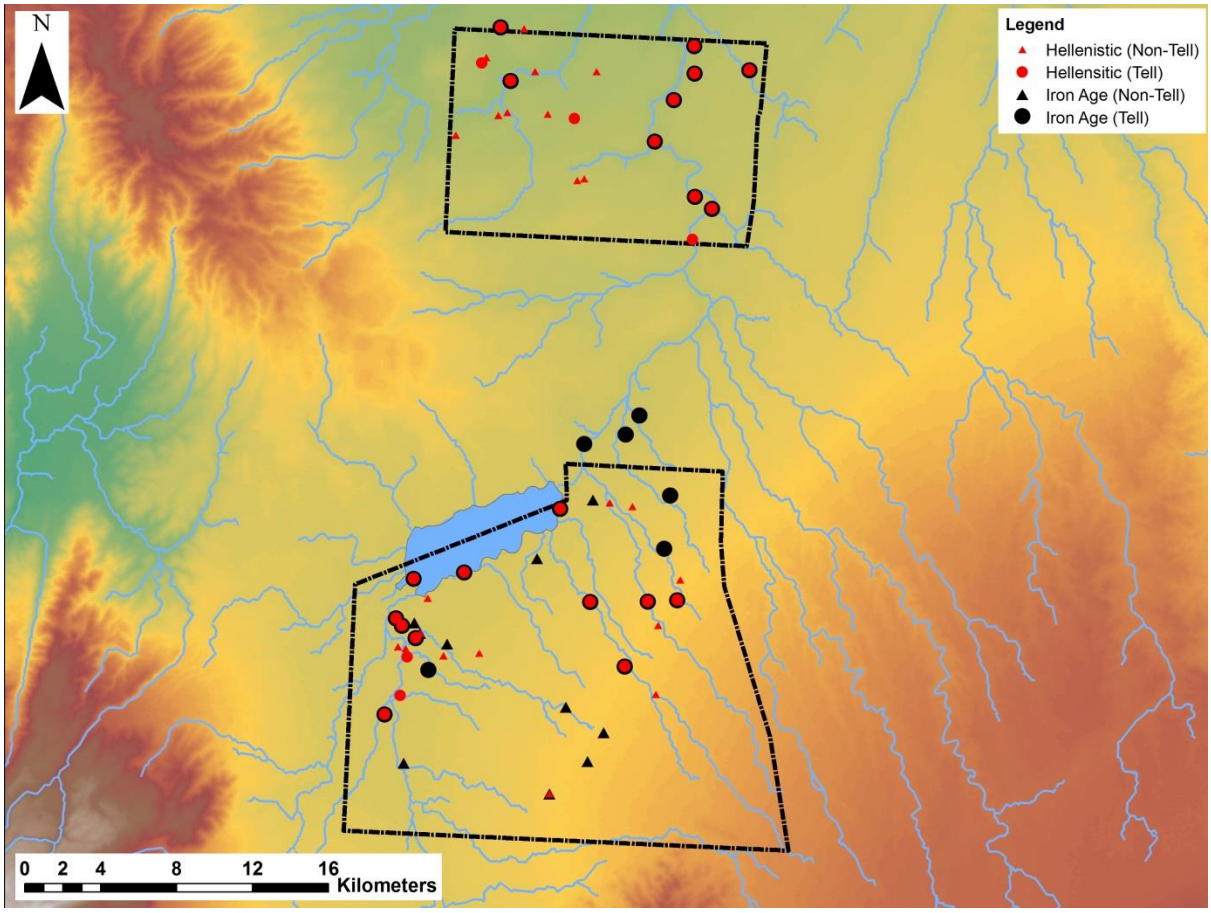

Figure 14 Distribution of Hellenistic period activity, red triangles represent non-tell occupations. Iron Age sites are shown for comparison.

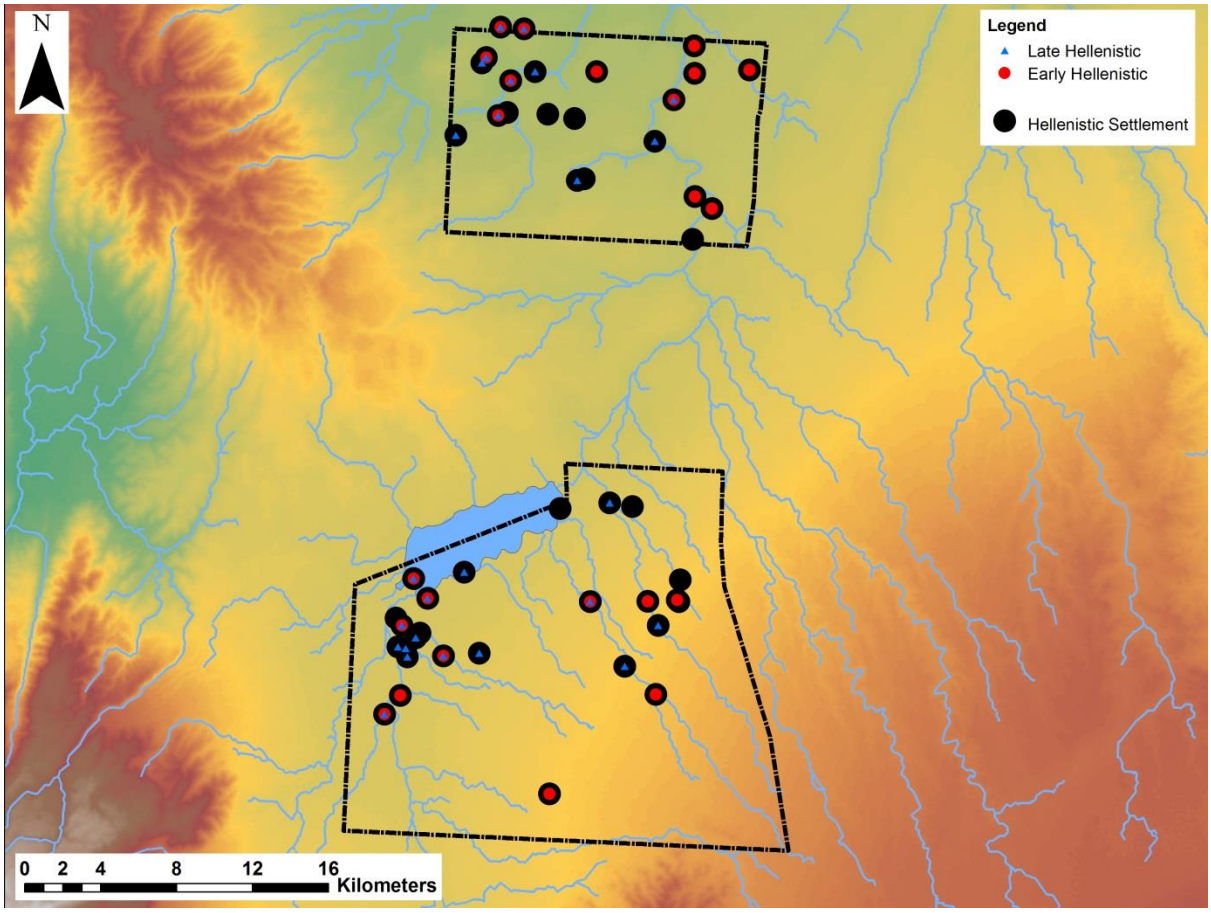

Figure 15 Chronological breakdown of Hellenistic period activity. Black circles indicate the presence of ceramic forms of ‘generic; Hellenistic date, red circles the presence of material forms that can be dated to the earlier part of the period, blue triangles forms that can be dated to the later part of the period.

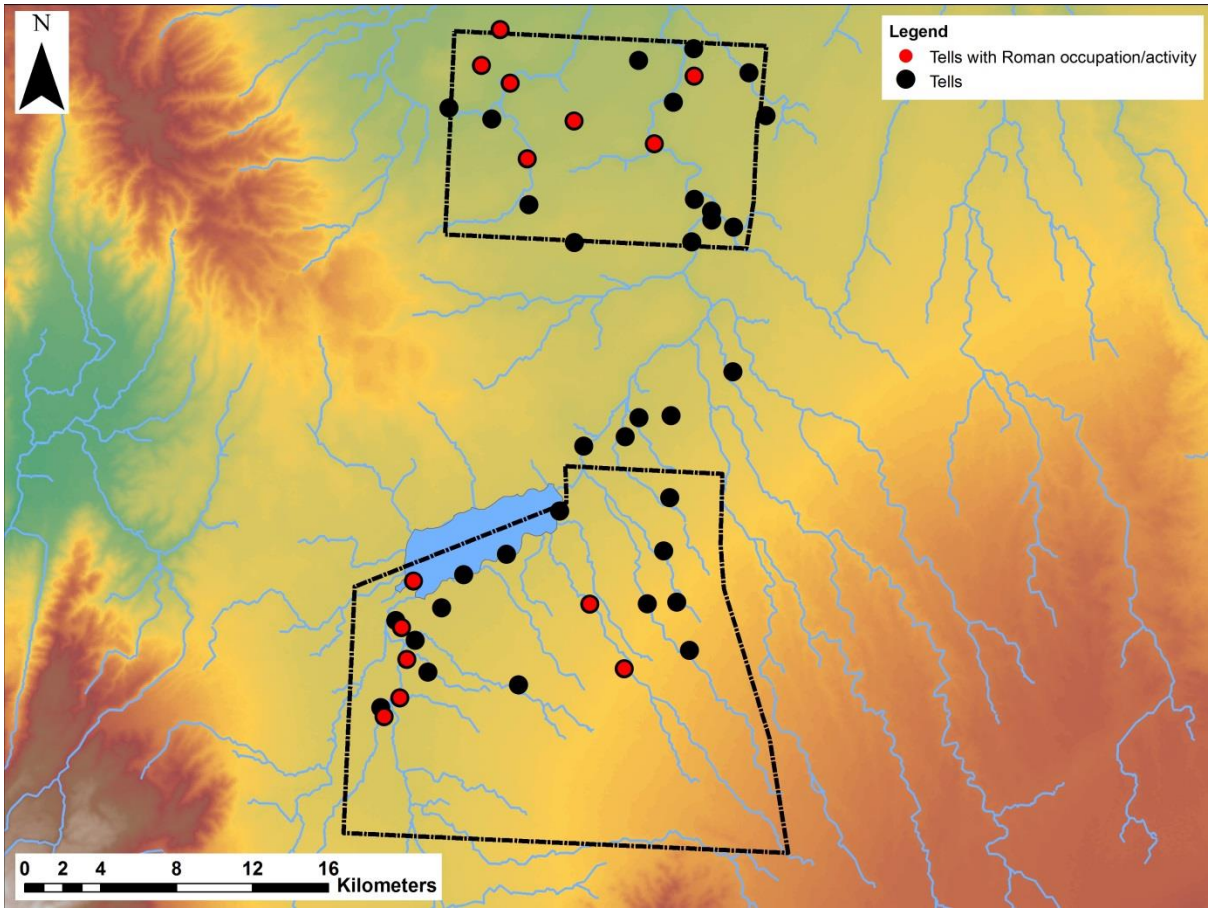

Figure 16 Tells with Roman period activity (red circles) compared to all tell sites (black circles).

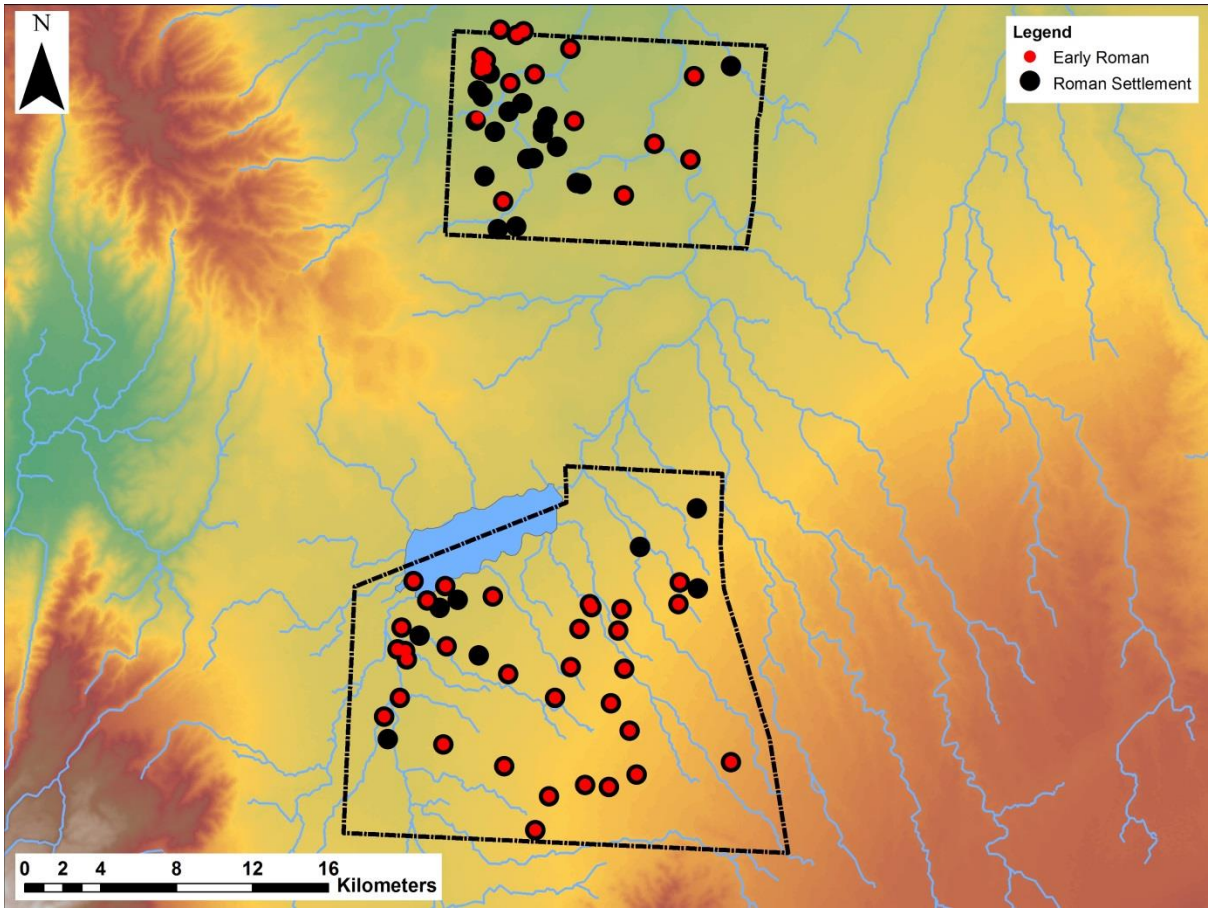

Figure 17 Sites with 'generic' Roman period occupation, and those with material that appears likely to fall between the 1st and earlier 3rd centuries AD. The predominance of black circles in parts of the basalt region may reflect issues of sample size.

Figure 18 Example of a depression.

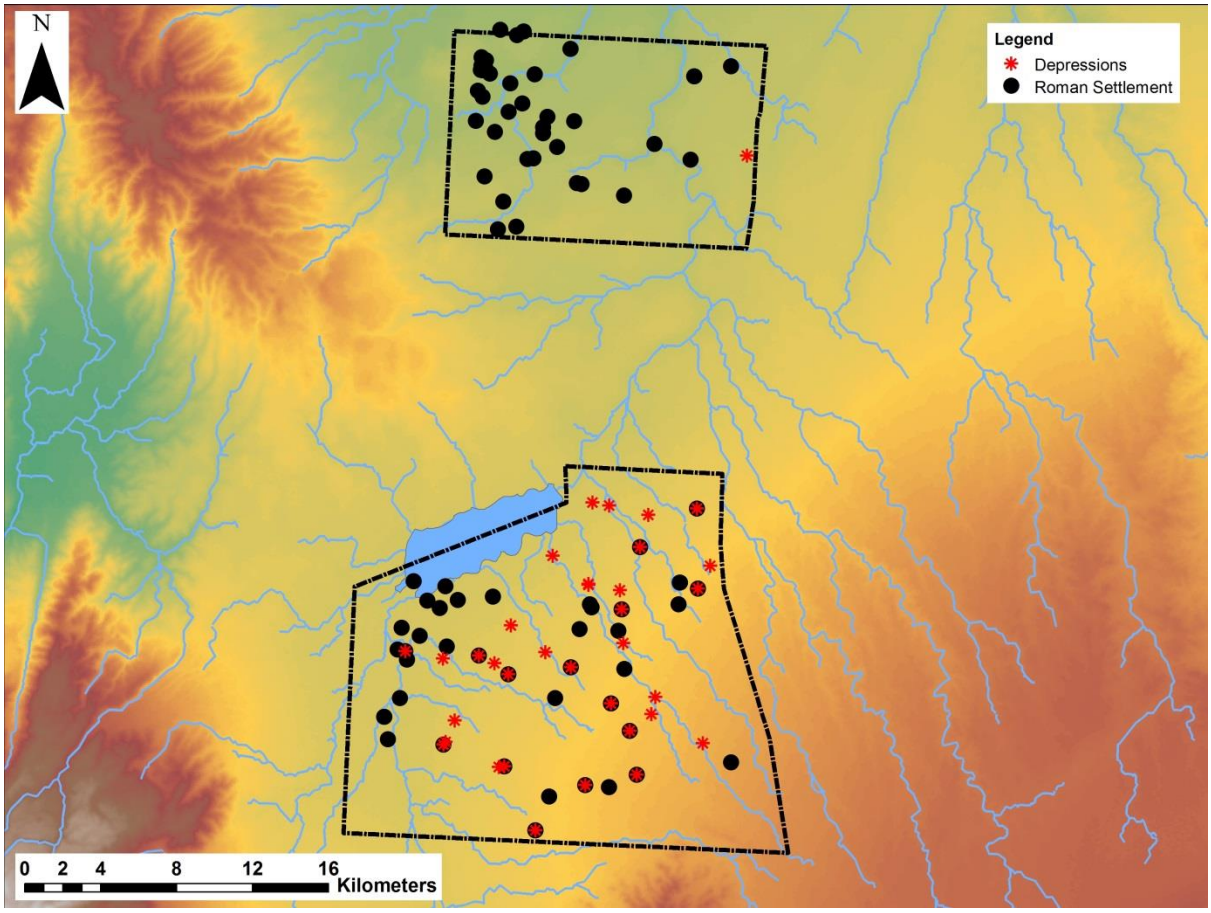

Figure 19 Position of depressions and sites with Roman period activity. While there is clearly a correspondence this is by no means one-to-one.

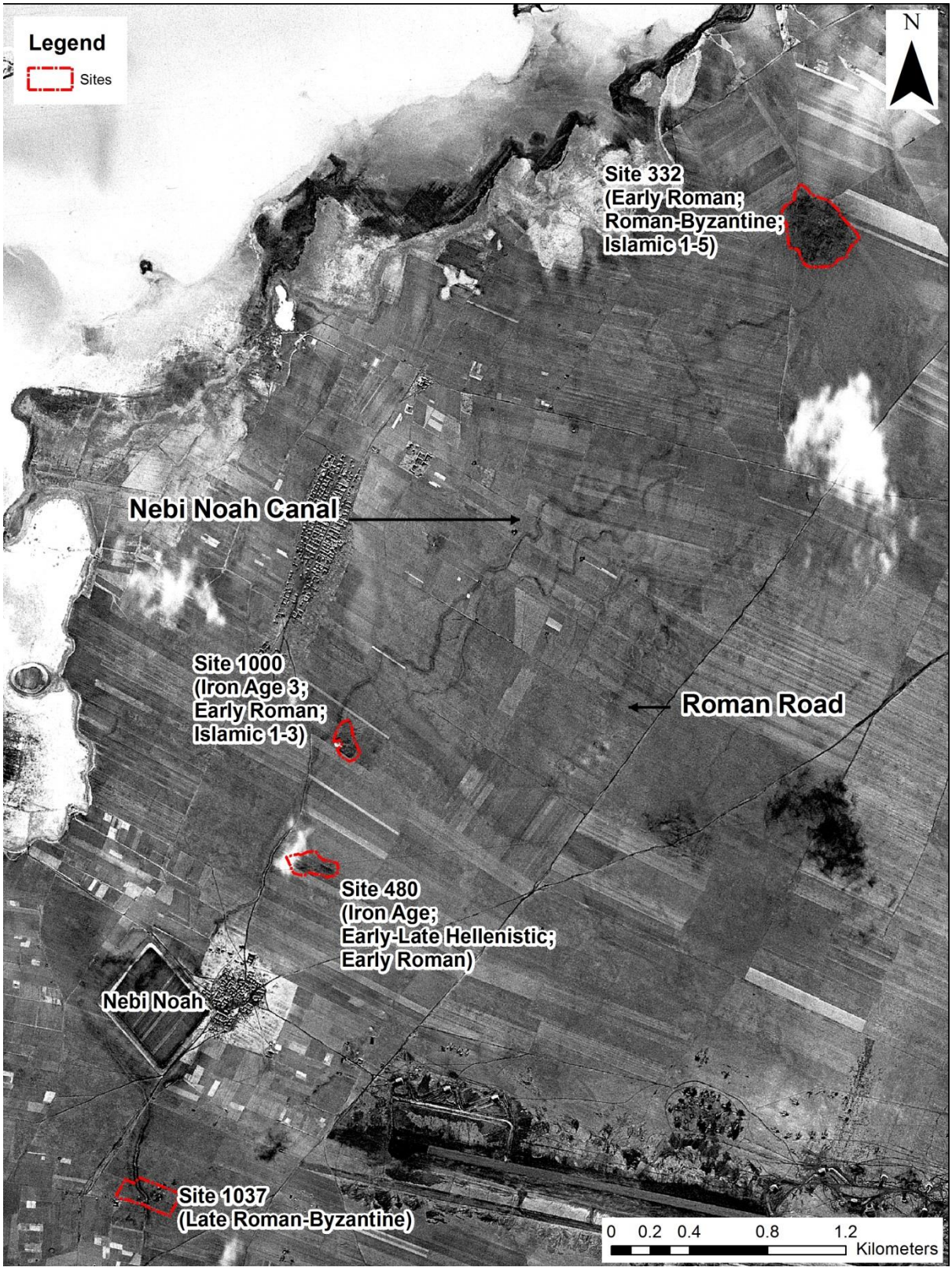

Figure 20 Map showing line of canal and road. Both are suggested here to date to the Roman period. Corona 1108 image (1969).

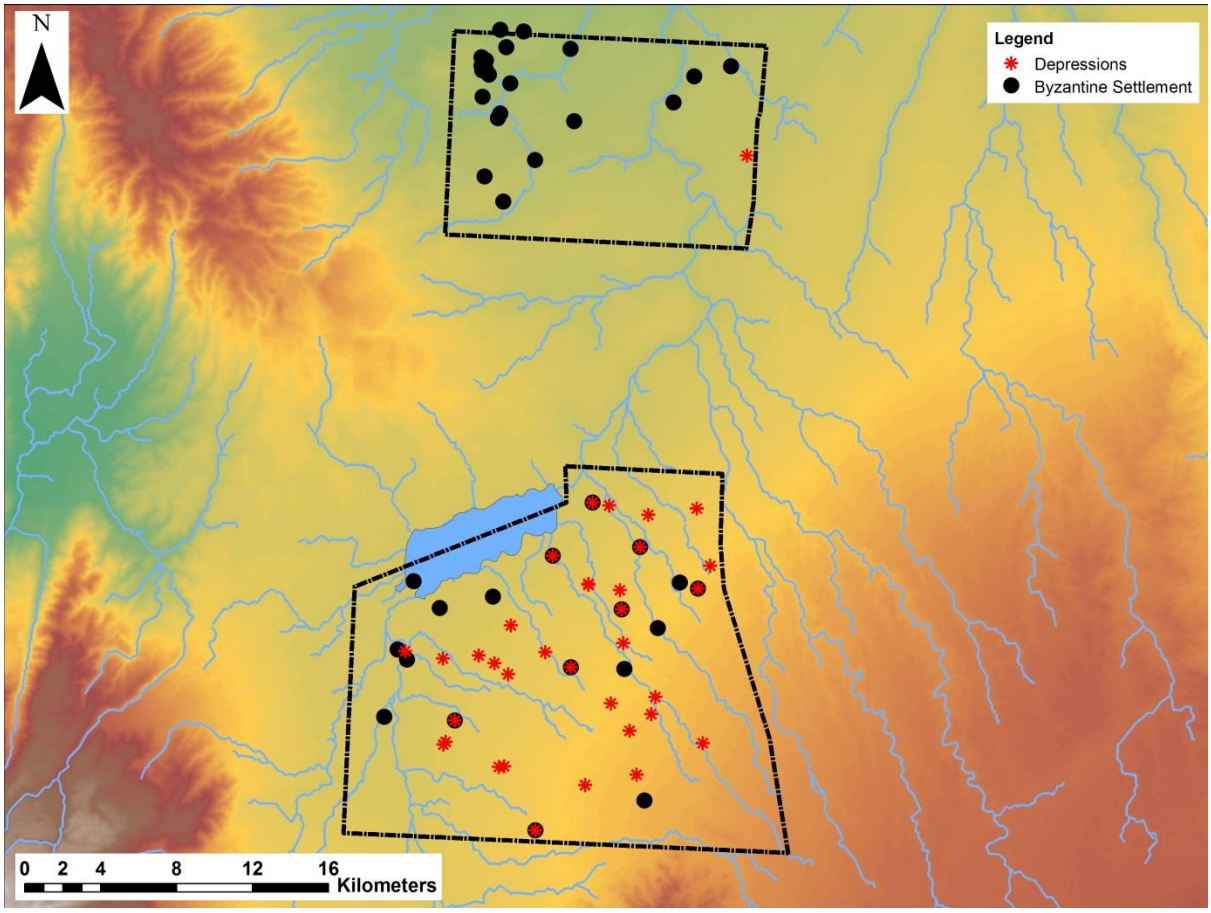

Figure 21 Position of depressions and sites with Byzantine period occupation.

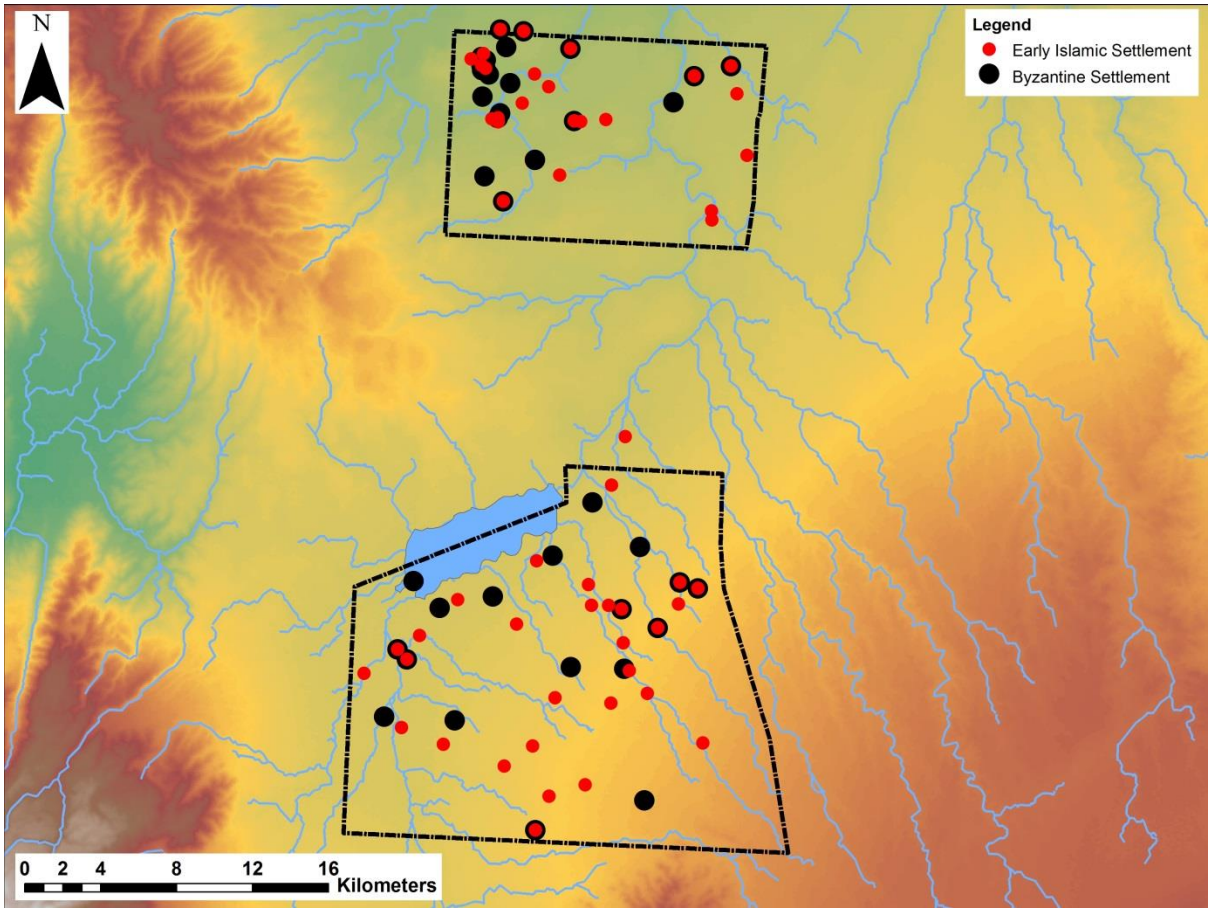

Figure 22 Byzantine and Early Islamic settlement compared.

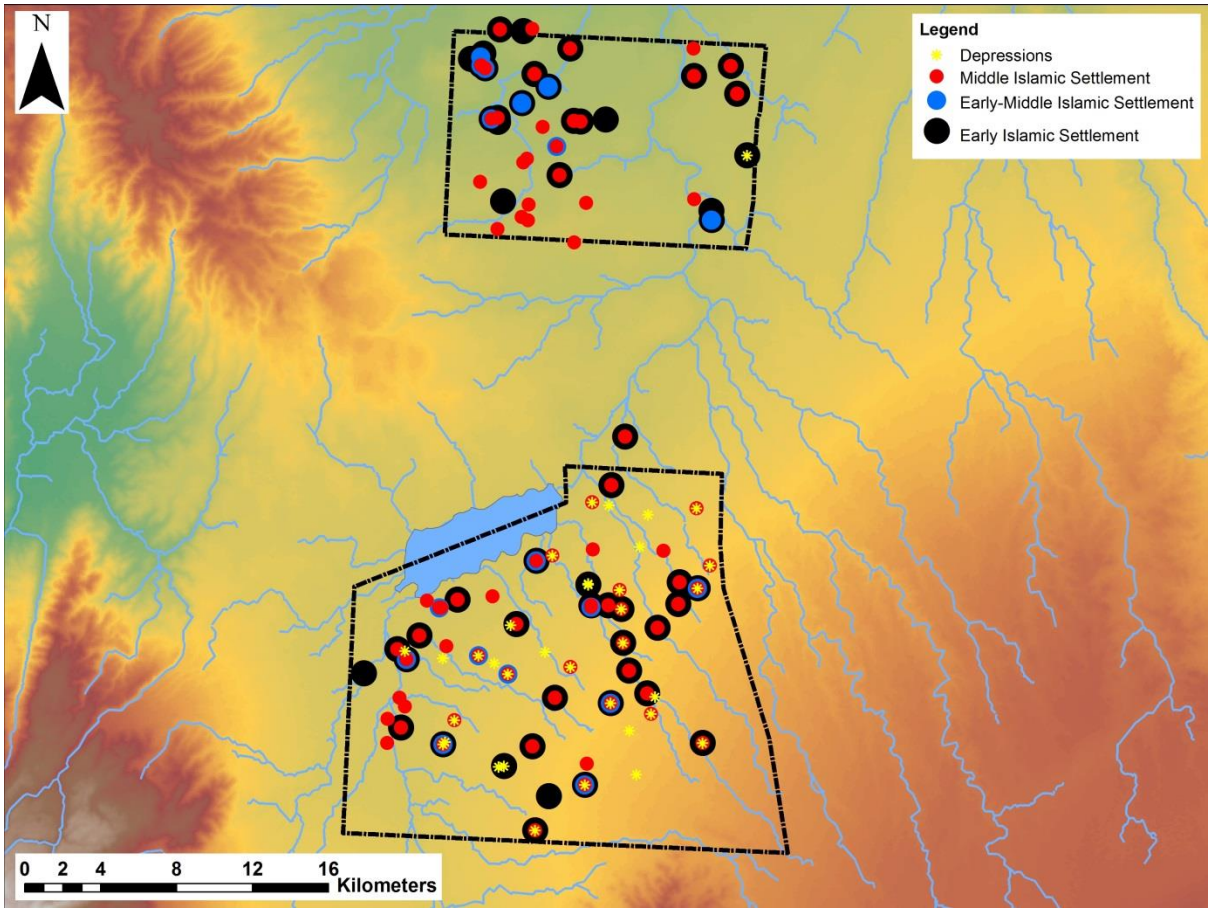

Figure 23 Position of depressions and sites showing Early and Middle Islamic period occupation.

References

ABDULKARIM, M. (1997) *Recherches sur la cité d'Émèse a l'époque romaine*. Doctoral Thesis, Université de Versailles.

ABDULKARIM, M. & OLESTI-VILA, L. (2007) Les *centuriationes* dans la province romaine de Syria: nouvelles perspectives d'étude. *Syria,* 84**,** 249-276.

AL-MAQDISSI, M. (2008) Matérial pour l'étude de la ville ancienne en Syria. *Studia Orontica,* 4**,** 5-10.

AL-MAQDISSI, M. (2010) Matériel pour l'étude de la ville en Syrie (deuxième partie) Urban planning in Syria during the second urban revolution (mid-third millennium BC). *al-Rāfidān*.31: 131-146.

ARMENDARIZ, A., IBÁÑEZ, J. J., AL MAQDISSI, M., HAIDAR-BOUSTANI, M., TEIRA, L. & URQUIJO, J. G. (2011) The Megalithic Necropolises to the west of Homs (Syria). IN STEIMER-HERBERT, T. (Ed.) *Standing Stones, Anthropomorphic Stelae and Dolmens*, 55-65. BAR International Series 2317 Oxford, Archaeopress.

BAGG, A. M. (2011) *Die Assyrer und das Westland. Studien zur historischen Geographie und Herrschaftspraxis in der Levante im 1 Jt. v.u. Z.* Orientalia Lovanenis Analecta 216. Leuven, Peeters.

BRADBURY, J. & PHILIP, G. (2011) The world beyond the tells: pre-classical activity in the basalt landscape of the Homs region, Syria. IN STEIMER-HERBET, T. (Ed.) *Maison de l'Orient Méditerranéen Pierres levées, stèles anthropomorphes et dolmens / Standing stones, anthropomorphic stelae*, 169-179. BAR International Series 2317. Oxford, Archaeopress.

BRIDGLAND, D. R., WESTAWAY, R., ABOU ROMIEH, M., CANDY, I., DAOUD, M., DEMIR, T., GALIATSATOS, N., SCHREVE, D. C., SEYREK, A., SHAW, A. D., WHITE, T. S. & WHITTAKER, J. (2012) The River Orontes in Syria and Turkey: Downstream variation of fluvial archives in different crustal blocks. *Geomorphology,* 165**,** 25-49.

BRYCE, T. (2012) *The World of the Neo-Hittite Kingdoms. A Political and Military History,* Oxford, Oxford University Press.

CALVET, Y. & GEYER, B. (1992) *Barrages Antiques de Syria,* Collection de la Maison de l'Orient Méditerranéen No 21. Lyon.

CASANA, J. (2007) Structural transformations in settlement systems of the Northern Levant. *American Journal of Archaeology,* 111**,** 195-222.

CASANA, J. (2009) Alalakh and the Archaeological Landscape of Mukish: The Political Geography and Population of a Late Bronze Age Kingdom. *Bulletin of the American Schools of Oriental Research,* 253**,** 7-37.

CASTEL, C. (2007) Stratégies de subsistance et modes d'occupation de l'espace dans la micro-région d'Al-Rawda au Bronze ancien final (Shamiyeh). IN MORANDI BONACOSSI, D. (Ed.) *Urban and Natural Landscapes of an Ancient Syrian Capital. Settlement and Environment at Tell Mishrifeh/Qatna and in Central-Western Syria. Proceedings of the International Conference held in Udine, 9-11 December 2004*, 283-294. Udine, Forum Editrice.

CASTEL, C. (2008) Al-Rawda, a town in the steppe (Central Syria, Early Bronze Age IV). IN KÜHNE, H., CZICHON, R. M. & JANOSCHA, K. F. (Eds.) *Proceedings of the 4th International Congress of the Archaeology of the Ancient Near East.* Wiesbaden, Harrassowitz.

CHARPIN, D. (1998) Toponymie amorrite et toponymie biblique: la ville de Sibat/Sobah. *Révue Assyriologique,* 92**,** 79-82.

COHEN, G. M. (2006) *The Hellenistic settlements in Syria, the Red Sea Basin, and North Africa,* Berkeley ; London, University of California Press.

CREMASCHI, M. (2007) Qatna's Lake: A Geoarchaeological Study of the Bronze Age Capital. IN MORANDI BONACOSSI, D. (Ed.) *Urban and Natural Landscapes of an Ancient Syrian Capital. Settlement and Environment at Tell Mishrifeh/Qatna and in Central-Western Syria. Proceedings of the International Conference held in Udine, 9-11 December 2004*, 93-104*.* Udine, Forum Editrice.

GEYER, B. (2007) The arid margins of Northern Syria: occupation of the land and modes of exploitation in the Bronze Age. IN MORANDI BONACOSSI, D. (Ed.) *Urban and Natural Landscapes of an Ancient Syrian Capital. Settlement and Environment at Tell Mishrifeh/Qatna and in Central-Western Syria. Proceedings of the International Conference held in Udine, 9-11 December 2004,* 269-281.Udine, Forum Editrice.

GEYER, B. (2009) Practiques d'acquisition de l'eau et modalités de peuplement dans les marges arides de la Syrie du nord. IN MOUTON, M. & AL-DBIYAT, M. (Eds.) *Stratégies d'acquisition de l'eau et société au Moyen-Orient depuis l'Antiquité : études de cas*, 25-44. Beyrouth, Institut Francais du Proche-Orient.

GEYER, B. & CALVET, O. (2001) Les steppes arides de la Syrie du Nord au Bronze Ancien ou <<la première conquête de l'est>>. IN GEYER, B. (Ed.) *Conquête de la steppe et appropriation des terres sur les marges arides du Croissant fertile,* 55-67. Lyon, Maison de l'Orient Méditerranéen.

GSCHWIND, M., HASSAN, H. & HÜBNER, W. (2009) Raphaneae. Report on the 2005 and 2006 Survey. *Zeitschrift für Orient-Archäologie,* 2**,** 234-289.

HAIDAR-BOUSTANI, M., IBANEZ, J. J., AL-MAQDISSI, M., ARMENDARIZ, A., URQUIJO, J. G. & TEIRA, L. (2005) Prospections archéologiques a l'ouest de la ville de Homs: rapport préliminaire campagne 2004. *Tempora, Annales d'Historie et d'Archéologie,* 14-15**,** 59-90.

HAIDAR-BOUSTANI, M., IBANEZ, J. J., AL-MAQDISSI, M., ARMENDARIZ, A., URQUIJO, J. G. & TEIRA, L. (2008) Prospections archéologiques a l'ouest de la ville de Homs: rapport préliminaire campagne 2005. *Tempora, Annales d'Historie et d'Archéologie,* 16-17**,** 9-38.

HORDEN, P. & PURCELL, N. (2000) *The corrupting sea: a study of Mediterranean history* Oxford, Blackwell.

KAMASH, Z. (2006) Water Supply and Management in the Near East 63 BC – AD 636. *Institute of Archaeology.* Oxford, University of Oxford.

LIVERANI, M. (2014) *The ancient Near East : history, society and economy,* London: Routledge.

MARFOE, L. (1998) *Kamid el-Loz. 14 Settlement history of the Biq'aa up to the Iron Age,* Bonn, R Habelt.

MATHIAS, V. T. (2000) The Early Bronze Age pottery of Tell Nebi Mend in its regional setting. IN PHILIP, G. & BAIRD, D. (Eds.) *Ceramics and Change in the Early Bronze Age of the Southern Levant*, 411-427. Sheffield: Sheffield Academic Press.

MORANDI BONACOSSI, D. (2007) Qatna and its hinterland during the Bronze and Iron Ages. A preliminary reconstruction of urbanism and settlement in the Mishrifeh region. IN MORANDI BONACOSSI, D. (Ed.) *Urban and Natural Landscapes of an Ancient Syrian Capital. Settlement and Environment at Tell Mishrifeh/Qatna and in Central-Western Syria. Proceedings of the International Conference held in Udine, 9-11 December 2004,* 65-93*.* Udine, Forum Editrice.

MORANDI BONACOSSI, D. & IAMONI, M. (2012) The Early History of the Western Palmyra Desert Region. The Change in the Settlement Patterns and the Adaptation of Subsistence Strategies to Encroaching Aridity: A First Assessment of the Desert-kite and Tumulus Cultural Horizons. *Syria,* 89**,** 31-58.

MORANDI BONACOSSI, D. (2013) The Crisis of Qatna at the Beginning of the Late Bronze Age II and the Iron Age II Settlement Revival. A Regional Trajectory Towards the Collapse of the Late Bronze Age Palace System in the Northern Levant. In YENER, K. A. (Ed.) *Across the border : Late Bronze-Iron Age relations between Syria and Anatolia : proceedings of a symposium held at the Research Center of Anatolian Studies, Koç University, Istanbul, May 31 - June 1, 2010*, 113-146. Leuven, Peeters.

NEWSON, P., ABDULKARIM, M., MCPHILLIPS, S., MILLS, P., REYNOLDS, P. & PHILIP, G. (2008-09) Landscape Study of Dar es-Salaam and the Wa'ar basalt region north-west of Homs, Syria. *Berytus,* 51-52**,** 1-35.

PARR, P. J., MARFOE, L. & PHILLIPS, C. S. (2003) The Site and its Excavation. IN PARR, P. J. (Ed.) *Excavations at Arjoune, Syria,* 11-21. Oxford: Archaeopress.

PARR, P. J. (Ed.) (in press) *Excavations at Tell Nebi Mend Syria Volume I: Part I: General Introduction, Part II The Pottery Neolithic Occupation, Part III The Enclosure* CBRL Monographs Oxford: Oxbow.

PHILIP, G., JABOUR, F., BECK, A., BSHESH, M., GROVE, J., KIRK , A. & MILLARD, A. R. (2002a) Settlement and Landscape Development in the Homs Region, Syria: Research Questions, Preliminary Results 1999-2000 and Future Potential. *Levant,* 34**,** 1-23.

PHILIP, G., DONOGHUE, D. N. M., BECK, A. & GALIASTATOS, N. (2002b) CORONA Satellite Photography: An Archaeological Application from the Middle East. *Antiquity,* 76**,** 109--118.

PHILIP, G., ABDULKARIM, M., NEWSON, P., BECK, A. R., BRIDGLAND, D., BSHESH, M., SHAW, A., WESTAWAY, R. & WILKINSON, K. (2005) Settlement and landscape development in the Homs region, Syria: report on work undertaken 2001-2003. *Levant,* 37**,** 21-42.

PHILIP, G. (2007) Natural and cultural aspects of the development of the marl landscape east of Lake Qatina during the Bronze and Iron Ages. IN MORANDI BONACOSSI, D. (Ed.) *Urban and Natural Landscapes of an Ancient Syrian Capital.*

Settlement and Environment at Tell Mishrifeh/Qatna and in Central-Western Syria. Proceedings of the International Conference held in Udine, 9-11 December 2004, 218-226*.* Udine, Forum Editrice.

PHILIP, G. & BRADBURY, J. (2010) Pre-classical activity in the basalt landscape of the Homs region, Syria: the implications for the development of “sub-optimal” zones in the Levant during the Chalcolithic and Early Bronze Age. *Levant* 42**,** 136-169.

PHILIP, G., BRADBURY, J. & JABBUR, F. (2011) The Archaeology of the Homs Basalt, Syria: the main site types. *Studia Orontica* 9**,** 38-55.

REYNOLDS, P. (2014) The Homs Survey (Syria): Contrasting Levantine trends in the regional supply of fine wares, amphorae and kitchen wares (Hellenistic to early Arab periods). IN FISCHER-GENZ, B., GERBER, Y. & HAMEL, H. (Eds.) *Roman Pottery in the Near East. Local Production and Regional Trade Proceedings of the round table held in Berlin, 19-20 February 2010,* 53-65. Roman and Late Antique Mediterranean Pottery. Oxford, Archaeopress.

ROLLEFSON, G. O., ROWAN, Y. M. & WASSE, A. M. R. (in press) The Late Neolithic Colonization of the Eastern Badia of Jordan. *Levant,* 46*/*2.

ROSEN, S. A. (2011) Desert chronologies and periodization systems. IN LOVELL, J. & ROWAN, Y. (Eds.) *Culture, Chronology and the Chalcolithic: Transitions in the Late Prehistory of the Southern Levant*, *71-83.* Levant Supplementary Series Oxford, Oxbow.

SARTRE, M. (2001) *D'Alexandre à Zénobie : histoire du Levant antique, IVe siècle avant J.-C., IIIe siècle après J.-C.,* Paris, Fayard.

SARTRE, M. (2005) *The Middle East under Rome* Cambridge, Mass. ; London, Belknap Press of Harvard University Press.

SOMMER, M. (2001) The Beqa Valley in Antiquity: a Regional Historic Survey. *Baal,* 5**,** 71-91.

THALMANN, J.-P. (2007) Settlement patterns and agriculture in the Akkar Plain during the Late Early and Early Middle Bronze Ages. IN MORANDI BONACOSSI, D. (Ed.) *Urban and Natural Landscapes of an Ancient Syrian Capital. Settlement and Environment at Tell Mishrifeh/Qatna and in Central-Western Syria. Proceedings of the International Conference held in Udine, 9-11 December 2004*, 219-232.Udine, Forum Editrice.

WHINCOP, M. R. (2007) The Iron Age II at Tell Nebi Mend: Towards an Explanation of Ceramic Regions. *Levant,* 39.

WILKINSON, T. J. (2010) The Tell: Social Archaeology and Territorial Space. IN BOLGER, D. & MAGUIRE, L. C. (Eds.) *The Development of Pre-State Communities in the Ancient Near East: Studies in Honour of Edgar Peltenburg*, *55-62.* Oxford, Oxbow.

WILKINSON, T. J., GALIATSATOS, N., LAWRENCE, D., RICCI, A., DUNFORD, R. & PHILIP, G. (2012) Late Chalcolithic and Early Bronze Age Landscapes of Settlement and Mobility in the Middle Euphrates: A Reassessment. *Levant,* 44**,** 139-185.

WILKINSON, T. J., PHILIP, G., BRADBURY, J., DUNFORD, R., DONOGHUE, D., GALIATSATOS, N., LAWRENCE, D., RICCI, A. & SMITH, S. L. (2014)

Contextualizing Early Urbanization: Settlement Cores, Early States and Agro-pastoral Strategies in the Fertile Crescent During the Fourth and Third Millennia BC. *Journal of World Prehistory,* DOI 10.1007/s10963-014-9072-2.

ZIEGLER, N. (2007) Les donnés des archives royales de Mari sur le mileu naturel et l'occupation humaine en Syrie centrale. IN MORANDI BONACOSSI, D. (Ed.) *Urban and Natural Landscapes of an Ancient Syrian Capital. Settlement and Environment at Tell Mishrifeh/Qatna and in Central-Western Syria. Proceedings of the International Conference held in Udine, 9-11 December 2004,* 311-318.Udine, Forum Editrice.