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The Neolithic on the Move: High Resolution Settlement Dynamics Investigations and Their Impact on Archaeological Landscape Studies in Southwest Azerbaijan

Azerbaijan; landscape; Neolithic; mobility; Caspian Sea.

Since summer 2009, a joint German—Azerbaijani research project has been investigating early sedentism in the Mil Steppe of south-western Azerbaijan (Ağcabədi Rayon). The study region stretches between the confluence of the Kura and Aras Rivers and the Qarabakh Mountains, and forms the north-western extension of the better-known Iranian Mughan Steppe. Intensive survey and geoarchaeological studies are coupled with archaeological on-site investigations to understand early settlement developments and human-environment dynamics. Satellite imagery provides the basic framework for the archaeological landscape studies. In particular, CORONA images from the late 1960s and early 1970s play a key role for the preliminary detection of both archaeological sites and landscape features.[1] Ground checking is conducted to verify the imagery's signal but a combination of survey techniques—from low to intensive surface collection—is also applied to document the whole archaeological landscape signature and record archaeological sites and features for the entire course of the Holocene. Hand-held GPS and field computers enable site recording and features location, whereas a Geographical Information System (GIS) makes rigorous record integration and statistical analysis possible at different spatio-temporal levels.[2] In this paper, by briefly presenting the data gathered during the 2010 and 2011 field seasons of the Mil Plain Survey (MPS), we address the question regarding the degree of mobility of the late Neolithic 6th mill. BCE communities in this region.

Along the Kara Çay River, the major natural water course in the area, a stable "landscape of survival"[3] has preserved numerous archaeological sites and features.[4] Here, the survey has documented a total of 46 sites (Fig. 1) dated from the Neolithic to the late Medieval times. In particular, a dense pottery Neolithic occupation occurs at 18 sites. These are often situated along the margins of the modern river valley on low natural ridges or river terraces that slope down towards the floodplain. They are found every 1 to 1.5km, but clusters of sites at a very close distance to each other also occur. Most of

1 Beck et al. 2005; Galiatsatos et al. 2009; Parcak 2009, 52–57; Ur 2003.
2 See Ricci (in press) for a more detailed description of the archaeological landscape investigation techniques and more detailed presentation of the 2010–2011 survey results.
3 Taylor 1972.
4 Helwing, Aliyev, and Ricci 2012, 70.

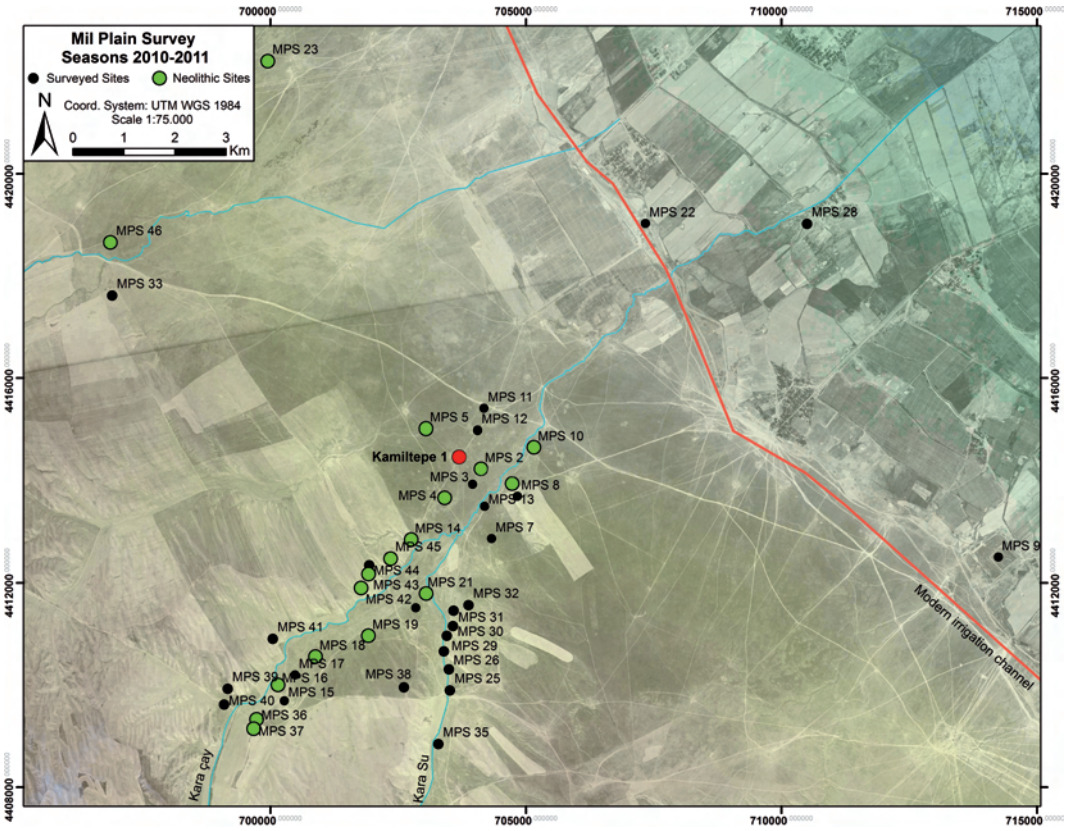

Fig. 1 | The Neolithic sites documented during the MPS 2010 and 2011 seasons mapped over a combined CORONA (CORONA 1110-1057DA111; 24 May 1970) and SRTM DEM 2002 images (courtesy of the USGS), copyright A. Ricci

the sites are small, ranging between 0.5 and 1ha in size, and abundant Neolithic artefacts are often recorded on extended flat areas or low mounds with shallow deposits. This is the case, for example, of Sites MPS 4 and MPS 5, where excavations have brought to light mud brick domestic structures, dated respectively at the first half and the mid-second half of the 6th Mill. BCE.[5] Site MPS 18 is located on a low natural ridge and appears to be composed of a series of small low mounds which form a large, multi-mounded complex with pottery and lithics fragments spreading over an area of more than 8ha. Both magnetometric investigations[6] and cleaning of exposed sections[7] confirm the presence of built structures at this site. In contrast, at Site MPS 36 another exposed section evidences the lack of architectural features, and the presence of several ashy deposits suggests that ephemeral or short-living occupations took place at least in that part of the site.

Along the lower course of the Kara Çay, several erosion surfaces affected the Holocene fluvial terrace formations. The variability of the depositing or incising phases of the Kura tributaries seems to closely follow the eustatic variations of the Caspian Sea.[8] The low declivity piedmont morphology of the area with high siltation, low solid transport and difficult drainage capacity caused intensive shifts of the Kura River tributaries, such as the Kara Çay, which split into numerous meanders and swampy areas.[9] The slightly higher topographic location of Kamiltepe provided protection against flooding and frequent shifts in the river courses and, during the mid 6th Mill. BCE, the spot was selected for

5 Helwing (in press).
6 Fassbinder et al. (in press).
7 Ricci (in press).
8 Ollivier et al. (in press).
9 Bebermeier, Schlütz, and Goren (in press); Ollivier et al. (in press).

Fig. 2 | The massive mud brick platform of Kamiltepe, (copyright: DAI).

building a massive sub-circular platform (Fig. 2).[10] Unfortunately, the upper part of this mud brick construction no longer existed prior to the beginning of excavation in 2009 but, on the basis of the micromorphological analysis of thin sections, it can be assumed that one or more built structures made of mud and vegetal materials had been erected on top of it.[11] Located in the rather flat landscape of the lower Kara Çay Valley, Kamiltepe was a monumental landmark visible from a distance. For multi-sited, highly mobile groups with loose physical borders, Kamiltepe might have acted as an anchoring place to which the 6th millennium BCE communities felt attached and where they gathered to perform communal rituals. The latter might have also included commensal events or 'feasting,'[12] as suggested by large quantities of bones of domesticated and wild animals recovered in several dumping ashy layers around the platform.[13] The variety of ceramic vessels used for eating and drinking[14] as well as the botanical remains[15] and use-wear analysis on stone tools[16] found in these contexts also provide evidence for intense and varied activities of food preparation and cooking directly linked to practices of food consumption. These forms of recurrent community social anchoring practices might have tightened up relations among dispersed but integrated small social groups.[17]

The Kara Çay 6th millennium BCE landscape was dotted with a high number of small camps or ephemeral occupations that resulted in a large Neolithic landscape palimpsest. It is difficult to believe that all these Neolithic presences were contemporaneously occupied. Shallow tells and short stratigraphic sequences suggest that the "life cycle" of

10 Aliyev and Helwing 2009; Helwing, Aliyev, and Ricci 2012.
11 Shillito (in press).
12 Dietler and Hayden 2001.
13 Helwing, Aliyev, and Ricci 2012, 69; Benecke (in press).
14 D'Anna (in press).
15 Decaix (in press).
16 Hamon (in press).
17 Pollock 2012.

these Neolithic sites was rather short. Habits of inhabiting and using structures, sites and landscapes comprise practices of frequent abandonments and the re-establishing of occupations not exactly on the same location. Possibly the same area was repeatedly visited for a short time, perhaps on a seasonal basis: it was occupied, abandoned and newly reoccupied afterwards. Only a few more stable sites seem to have been inhabited and in use for longer periods of time: Kamiltepe with its massive platform and its possibly "special" social function, and maybe Site MPS 18, with built structures but with shifting on-site occupations that formed distinct small mounds. The landscape of highly mobile Neolithic communities with incipient recognition of pivotal sites neither led to the merging of single sites nor to tell formation. At first glance, this practice might appear unstable, but possibly the system itself "functioned" successfully within this continuous settlements' shifting. The vulnerability to floods or water resource accessibility (ultimately the fluctuations of the Caspian Sea) might have influenced the distribution of human occupations. However, was it the only driving factor for practising mobility as a condition for the exploitation of a highly dynamic and changing environment, or did other socio-economic variables play a role in shaping this practice of life? Mobility might have considerable adaptive advantages in terms of subsistence, but it also had substantial socio-economic implications. And, in fact, multi-sited constitution of mobile communities seems to have been a way of settling the landscape by other late Neolithic groups, as for example in Syria along the Balikh River,[18] or in Southern Turkey on the banks of the Euphrates River,[19] where there is no sign that mobility was forced by major disruptions or shortages in natural resources.

This preliminary model necessitates additional investigation. Further surveys will be conducted to determine the area and extent of community mobility and to possibly identify different phases of the apparently short-period Neolithic occupations. Excavations on both focal sites and smaller camps might provide materials to address the temporal scale of a community's movements. Eventually this will allow an understanding of whether mobility occurred on a seasonal basis or in the long run, and if the entire community or only one part of it moved out, possibly with herds, during certain periods of the year, while others remained in the hamlet all year round.

18 Akkermans 1993, 163–165; Akkermans (submitted); Akkermans et al. 2006.
19 Bernbeck et al. 2003; Bernbeck 2008.

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