



DIGITAL ACCESS TO SCHOLARSHIP AT HARVARD

Pastoral Nomads of the Second and Third Millennia AD on the Upper Tigris River, Turkey: Archaeological Evidence from the Hirbemerdon Tepe Survey

The Harvard community has made this article openly available.
[Please share](#) how this access benefits you. Your story matters.

Citation	Ur, Jason A. and Emily L. Hammer. Forthcoming. Pastoral Nomads of the Second and Third Millennia AD on the Upper Tigris River, Turkey: Archaeological evidence from the Hirbemerdon Tepe Survey. <i>Journal of Field Archaeology</i> 34:37-56.
Published Version	http://www.bu.edu/jfa/
Accessed	February 18, 2015 1:12:50 AM EST
Citable Link	http://nrs.harvard.edu/urn-3:HUL.InstRepos:3219932
Terms of Use	This article was downloaded from Harvard University's DASH repository, and is made available under the terms and conditions applicable to Open Access Policy Articles, as set forth at http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#OAP

(Article begins on next page)

Pastoral Nomads of the Second and Third Millennia AD on the Upper Tigris
River, Turkey: Archaeological Evidence from the Hirbemerdon Tepe Survey

Published in the *Journal of Field Archaeology* 34 (2009), pp. 37-56

Jason Ur

Emily Hammer

Harvard University

Cambridge, MA

Abstract:

The importance of non-sedentary pastoralist groups in the social and political history of Mesopotamia has long been appreciated from the perspective of ancient texts and ethnohistorical sources, but empirical evidence from archaeology has been lacking. In two field seasons, the Hirbemerdon Tepe Survey (HMTS) in Diyarbakır province, SE Turkey, has recovered a variety of sites and landscape features associated with pastoral nomadic occupation during the last two millennia and possibly earlier. In doing so, we targeted non-alluvial areas where feature preservation was likely, and employed pedestrian survey methods more typical of Mediterranean fieldwork. If Mesopotamian archaeology is to investigate the landscapes of pastoral nomads, it must incorporate intensive survey methods and expand coverage beyond alluvial environments.

[A] Introduction

Mesopotamia, the land between the Tigris and Euphrates and their associated basins, was one of the initial foci of survey archaeology and has continued to be one of the most heavily surveyed regions of the world (reviewed in Wilkinson 2000). Although the interpretation of survey data has evolved substantially, Mesopotamian archaeologists continue to use far less intensive survey methods than fieldworkers in the eastern Mediterranean, where tightly spaced transects are the norm (Mattingly 2000; Alcock and Cherry 2004). Mesopotamian survey remains a predominantly vehicular undertaking, with few researchers incorporating an off-site component.

The reason for this methodological difference is that Mesopotamian survey techniques have been successful when used in alluvial landscapes and for the research questions usually considered (Wilkinson, Ur, and Casana 2004). All surveys in southern Mesopotamia, and a majority of those in northern Mesopotamia, have focused on broad alluvial plains, stone-poor environments that encourage the use of mud brick architecture, promoting the growth of mounded sites (variously called *tepes*, *tells*, or *höyüks*) that stand out starkly against the low relief of the plain. Sites that stand from 1 m to 40 m high simply do not require 10 m transect spacing for detection.

Closely related are the research agendas of Mesopotamian surveyors. Although most archaeologists will record sites of all periods, the predominant

focus of research has been on urban origins and state formation in the Late Chalcolithic and Bronze Ages. The relevant sites are the settlements of sedentary agriculturalists, which range from single-hectare villages to urban places of several square kilometers. In northern Mesopotamia, site morphology and this research agenda often coincide, since settlement in the Bronze Age was disproportionately placed atop preexisting mounds (Wilkinson, Ur, and Casana 2004:191-195).

Thus mounded sites are highly obtrusive and Late Chalcolithic and Bronze Age landscapes have high visibility, to use the terminology of Schiffer, Sullivan, and Klinger (1978:6-7), but these sites and landscapes represent only a sample of Mesopotamian history. In recent years the role of mobile groups, particularly pastoral nomads, has moved to the fore (Chang and Koster 1986; Cribb 1991; Barnard and Wendrich 2008; Frachetti and Mar'yashev 2007; Honeychurch, Wright, and Amartuvshin 2007; Rosen 2003). Pastoral nomads were important vectors of political and social change throughout Mesopotamian history, but they have been studied primarily from the vantage of cuneiform texts (Buccellati 1966; Fleming 2004; Szuchman 2008). With some exceptions (e.g., Hole 1974; Danti 2000; Matney, et al. 2007:25-29), archaeologists have inserted them into voids in the settlement pattern, on the assumption that field evidence for nomadic occupation does not survive. The assumption of nomadic invisibility is largely the result of the methods and geographic foci of traditional Mesopotamian survey.

These methods are ill-suited for the recovery of non-mounded sites of low artifact density, and have been practiced in archaeological “zones of destruction,” the agriculturally productive plains that are characterized by high attrition of ephemeral landscape features (Williamson 1998).

A survey that aims to recover the remains of pastoral nomads must adopt more intensive methods and target a region where natural and cultural taphonomic processes are less likely to have removed or obscured them. With the intention of identifying such remains, the Hirbemerdon Tepe Survey (HMTS) was initiated in 2007 in a region of well documented pastoralism in the last millennium (Woods 1999; Cribb 1991:196-207; Hütteroth 1959). At 47 sq km, the survey area is small by Near Eastern standards, which enables more intensive methods to be applied than are generally seen in Mesopotamian research.¹ Furthermore, the survey region straddles two discrete geomorphological zones: a western area of broad river terraces, characterized by sedentary agricultural settlement, and an eastern area of eroded uplands with steep slopes and thin soils. The former has seen a cyclical process of settlement and agricultural expansion and contraction that has been destructive to early landscape features; the latter, having escaped agricultural land use, is far more likely to preserve traces of non-sedentary occupation. By employing a pedestrian field methodology and targeting likely zones of landscape preservation, our first two seasons of survey (2007-2008) recovered campsites, landscape features, and possible cemeteries of mobile

pastoralists in the uplands and also in the agricultural areas where such traces are often thought not to survive.

The description of these field methods as “intensive” requires some elaboration. Survey intensity can be measured in several ways, most commonly by the spacing interval between fieldwalkers or by the person-days per unit of area (Plog, Plog, and Wait 1978; Schiffer, Sullivan, and Klinger 1978:13-14). Survey methods cannot be divided into opposed “intensive” and “extensive” categories, but rather can be placed along a continuum. At the most intensive end of the spectrum are the Mediterranean surveys of recent decades, which feature fieldwalker transects at tight intervals (summarized in Mattingly 2000:6-8). On the other end, Mesopotamian surveys have remained predominantly vehicular and, with a few exceptions, do not include an “off-site” component (Wilkinson 2000:223-229). By the standards of traditional Mesopotamian surveys, which cover hundreds or thousands of sq km in the course of two or three field seasons, our methods are highly intensive. Compared to most contemporary Mediterranean surveys, some components of our stratified approach are of high intensity (e.g., the collection of campsites at 5 m intervals) whereas others are of moderate (25 m interval transects on the cultivated terraces) or low (70-100 m interval transects in the upland zone) intensity. Our claim of intensiveness should be considered within the frame of the Mesopotamian tradition.

[A] The Upper Tigris Valley

The Upper Tigris region of Diyarbakır province in southeastern Turkey has until recently been on the periphery of archaeological exploration in the Near East. The imminent completion of the Ilisu dam downstream, part of the Güneydoğu Anadolu Projesi (GAP) development project, has brought a flood of new excavation and survey projects. Guillermo Algaze's initial survey of the Batman-Bismil area (1989; Algaze, et al. 1991) established the positions and scale of the major mounded settlements and has now been followed up by further surveys of mounds (Ay 2001), Classical sites (Barın, Akın, and Şahin 2003), and Paleolithic remains (Taşkiran and Kartal 2004). In the last ten years, excavations have begun at many of these sites, and a preliminary picture of the history of the Upper Tigris region is emerging (see recent reports in Tuna, Greenhalgh, and Velibeyoğlu 2004). One such site is the Middle Bronze Age settlement at Hirbemerdon Tepe, excavated since 2003 (Laneri, et al. 2006; Laneri, et al. 2008). The HMTS region is defined by an arbitrary 5 km radius circle around this site on the right bank of the Tigris.

Hirbemerdon lies at the eastern edge of the broad Batman-Bismil stretch of the Tigris valley, at the point of confluence of the Tigris and the Batman Çay (Fig. 1). Below Bismil, the Tigris has cut several terraces through time (Kuzucuoğlu 2002; Doğan 2005). At present, the lower terraces are heavily cultivated, often with both winter and summer crops, and cultivation extends onto the higher terraces to the south with the aid of diesel pumping of Tigris water.

At the eastern end of this stretch, immediately below its confluence with the Batman Çay, the Tigris valley narrows to run between sheer cliffs. Here the Tigris is flanked by the Ramandağ mountains to the north and elevated eroded uplands to the south. The terrain takes its form through a combination of bedrock folding and erosion, which has resulted in an uneven zone of deep seasonal drainages (wadis) and high hills with patches of exposed bedrock (Fig. 2). Areas of sediment accumulation are limited to wadi bottoms and small pockets where aeolian debris has settled. Surface drainage flows from south to north into the Tigris via three main wadis. Land suitable for cultivation is minimal and generally limited to recent low and narrow terraces immediately adjacent to the present course of the Tigris. The long-term pattern of land use has been, and appears to still be, one of sheep and goat pastoralism.

The HMTS region (Fig. 3) straddles the interface between broad river terraces to the west and the narrow Tigris valley downstream to the east. It is also an interface between sedentary agriculture and a predominantly pastoral way of life.

[A] Survey in the Eastern Uplands

Because the uneven terrain precluded regular, evenly-spaced transects, the HMTS adopted a stratified approach. The eastern uplands were divided into 1 sq km squares and investigated via teams of 2-3 surveyors walking at 70-100 m intervals. We attempted to adhere to a cardinal axis (i.e., N-S or E-W transects),

but in practice it was easier and more effective to allow the topography to dictate the direction of our transects. Therefore teams walked along wadis, along the ridges above them, and along the slopes in between.

Of the campsites identified in this manner, several were chosen for intensive surface collection to test the often implicit assumption that pastoral nomadic sites contain little material culture. Two were of 20th-21st century date but with earlier occupation as well. Two others showed no signs of recent use. At intensively sampled sites, the settled area was first divided by GPS into 25 x 25 m squares, and walked at 5 m intervals by surveyors. All cultural material (pottery, lithics, bone, metal, fabric, wood, glass, and plastic) was marked with nylon flags. Positions were then recorded using a Trimble GeoXT GPS-enabled mobile computer, which allowed instant integration of spatial and attribute data. The total upland area is approximately 17.9 sq km; in 2008 the HMTS was able to investigate half of this area. The area is far from archaeologically vacant; a great variety of sites, features, and artifacts were recovered, dating from the Middle Paleolithic to the early 21st century AD.

[B] Campsites and Enclosures of Pastoral Nomads, Ancient and Recent

From historical records, the Diyarbakır region is known to have been the winter pasturelands (*kıslak*) of transhumant sheep and goat pastoral nomads for at least two millennia and possibly much longer. Pastoral groups enjoyed periods of political dominance, for example during the time of the Akkoyunlu tribal

confederation of the 15th century AD (Woods 1999), but in recent years they are much reduced in size and economic strength. In the 20th century, small households of pastoralists have migrated from the Erzurum and Van regions of the Taurus Mountains on an annual basis, beginning around the end of November or early December (Hütteroth 1959; Cribb 1991:185-211). During their five-month stay, most rent harvested land on which to graze their animals. These rental arrangements last for only one year and a different group arrives each year. Unlike in the uplands areas discussed below, these groups make few or no investments in the land or in their campsites.

The HMTS found three classes of campsites, grouped according to aspects of site taphonomy which are tied to the amount of time since they were last abandoned. Campsites of the first group were occupied recently, within the last decade and in the case of Site 36, within the last year. Site 36 is a complex of tent spaces, animal enclosures, and other features for at least five family groups, arranged on both sides of the particularly verdant northern end of the easternmost wadi in the survey region (Fig. 4). The materials and condition of the tent sites and enclosures make it clear that the area had been recently occupied, and local villagers claim that these people left the area in April 2008. Site 36 therefore provides an opportunity to view a campsite immediately after its abandonment but before taphonomic processes have rendered it difficult to interpret. Close examination of such recent sites produced a baseline spatial template with which

older and more fragmentary campsites could be compared. The area of Site 36 has probably been used by pastoral nomads for a long time, but the structures visible there today are very recent. The present structures do not appear in a 2004 QuickBird satellite image and are therefore less than five years old.

The structures and their spatial arrangement within household groups at Site 36 were remarkably consistent, and demonstrate a considerable investment in the construction and maintenance of animal enclosures. They range in size from 10 sq m to 134 sq m and show a variety of materials and construction techniques including dry stone walls, tightly woven brush bundles, reed screens, and various hybrid arrangements (Fig. 5A). Almost all enclosures have stone foundations, many of which are surrounded by earth-filled nylon sacks for stability. Several of the smaller enclosures have stick or brush gates. Most have accumulated a thick layer of dung, but several had carefully laid floors of prepared brush. In several cases, the upslope walls were constructed of stone while the downslope walls were of sticks; this arrangement protects the structure from runoff and allows it to be cleaned out more easily from the side. In the four years or less during which these enclosures have been in use, up to 20 cm or more of dung has accumulated within them. A further element of the animal infrastructure was a set of parallel feeding troughs made of intertwined stakes and brush atop a stone foundation (Fig. 5B).

The labor investment in the human living areas, on the other hand, was limited to surface clearance and the digging of shallow trenches around the tent edges (Fig. 5A foreground), and the construction of low stick walls around external cooking areas. This complex of tent area and associated cooking area, various enclosures, and feeding troughs was repeated at least four times at Site 36 and could be recognized in fragmentary form at several of the older 20th century campsites.

Campsites of the second group have been used within the past few decades but not in recent years. For example, Site 18 is composed of stone built animal enclosures and tent footings. As with the more recent Site 36, much effort was invested in animal enclosures. The close mapping of artifacts (Fig. 6) revealed a broad scatter of materials in front of Structure 2. Unlike the others, Structure 2 was dung-free and therefore was probably a tent footing. The abundance of plastic, fabric, and glass makes it clear that this campsite was in use in the latter half of the 20th century AD, but based on the disrepaired condition of the structures, they have not been occupied by in many years. Unlike the preservation at Site 36, no organic architectural elements survived; only structures with stone walls remained. Furthermore, these walls had collapsed in many places.

A third category includes several campsites that have far more degraded and collapsed architecture, lower surface artifact density, and lack glass, metal,

and plastic. For these reasons, they are far more difficult to interpret and to date. For example, Site 26 consists of a linear stone feature in association with two or three collapsed rectangular structures. Intensive surface collection of 5000 sq m at the site recovered four lithics and a single non-diagnostic sherd. Sites 39 and 42 are composed of dispersed concentrations of stones that are interpreted as the remains of bedding platforms (raised areas within tents for the storage of bedding materials and other objects that should be kept off the ground surface). The surface assemblage of Site 39 was almost entirely composed of sherds from a single vessel of probable Medieval date; Site 42 was not collected. Because of the lack of chronologically sensitive artifacts, campsites in this third category are difficult to date, but the lack of modern materials hints at a pre-20th century date.

The uplands contained many isolated enclosure or corral features with no closely associated tent emplacements. Most consisted of a single course of rough stones set on edge to a height of about 1 meter, arranged in one or two circles or rounded rectangles (Fig. 7). The walls were heavily collapsed and the vegetation and soils in the interiors of these enclosures did not differ visibly from the surrounding terrain, which suggest that they have been long out of use.

[B] Cairn Fields

Some ubiquitous features of upland and lowland areas of the HMTS are piles of stones, generally circular, often mounded, but occasionally simply flat localized concentrations. Initially, we interpreted any concentration of stones on

the terraces as the deliberate clearance of stones from agricultural fields to promote plant growth and to remove impediments to the plow. In many cases this interpretation is likely to be correct, especially when stone piles appear at the edges of contemporary fields. Many of these stone agglomerations, however, cannot be explained in terms of agriculturally-oriented behavior. In several places in the uplands, stone concentrations exist in places that are not cultivated today, and are likely never to have been cultivated on account of high slopes, thin soils, or both. These cairns averaged 2 m in diameter and 0.5 m in height and were constructed of natural stones with variable quantities of lichen. These occur sometimes in seeming isolation, but far more frequently in discrete clusters and in large fields.

Cairns were mapped and described at two sites at the interface between the cultivated and non-cultivated zones. Site 16 consists of at least 172 stone cairns in various states of preservation and disturbance, arrayed along the northeastern slopes of a long low ridge (Fig. 8A). A preliminary spatial assessment indicates that a minimum spacing was maintained between cairns and that in several cases they were arranged linearly and at a constant elevation. Furthermore, they were associated with a set of linear stone features. A single alignment stretched some 685 m along the top of the ridge, and several shorter alignments ran perpendicular to it, parallel to the slope to the northeast. This cairn field was probably originally

larger, but agricultural fields have pressed up against this ridge on both sides, likely destroying many low lying cairns.

The 188 cairns in Site 53 covered 11 hectares atop a broad plateau that extended east from the edge of cultivation to overlook the uplands (Fig. 8B). The cairns were morphologically similar to those of Site 16 in size, volume, and condition. In the mapped area of this extensive site, cairns fell into several discrete clusters; two small concentrations at the eastern end of the plateau, and an extensive field with several local concentrations within it. Clearance of the agricultural fields southwest of the site probably removed more cairns.

Without any associated artifactual material, it is difficult to date these features. The majority of cairns at Sites 16 and 53 were heavily lichen-coated, but whether this signifies a century, a millennium, or more is unknown at present. Lichens are not found on the stones at the edges of the modern fields. A further issue is the interpretation of these fields. They might mark the burials of the historically known pastoral nomadic groups who wintered in the area over the last millennia, but without excavation some caution is required. In cases where pastures are owned, nomadic groups have been known to improve them via stone clearance into similar cairns (Chang and Koster 1986:112-113). Excavation of cairns in extensive fields in the Negev and Mongolia found few that contained human remains (Haiman 1992; Wright 2007:352, 356).

[B] Check Dams, Terraces, Cisterns, and other Landscape Features

The point is often made that nomadic pastoral landscapes are composed of more than just cairns and campsites, and that a broader landscape approach is required (see recently Frachetti 2008). The eastern uplands contain abundant traces of human activities, mostly related to water retention for human and animal consumption.

The most common isolated features are check dams, often little more than a line of stones across a small drainage that arrests surface runoff and impounds sediments on the upslope side (Fig. 9). In some cases, the dams may be multiple courses of stones high, and incorporate earth and stones together. The purpose of these features can be to trap water for watering animals or to catch sediments to create small agricultural plots or areas of pasture. Many have trapped sediments behind them, but others have been washed out during particularly heavy rains. Few if any of these features would have retained water for very long, and were probably only intended for use during the winter rainy season.

Other water catchment features are less ambiguously related to water retention. For example, some dams were constructed with curved downslope barriers and channels to evacuate overflow in case of dangerously abundant surface runoff. In at least three cases, circular stone features were constructed within wadis to entrap wadi flow. Some survive to six or more courses and may have been domed.

The greatest investment went toward the construction and maintenance of cisterns (*sarnıç*), large subterranean water holding tanks filled via surface runoff. There is a large range of variation in construction and size, but all have several features in common. They have a small opening generally less than 1 m wide, often with carved stairs leading into the tank, and the interior is generally rectangular with clear evidence for the use of metal chisels. Cisterns are fed by channeling surface runoff into the tank. In the eastern uplands, this was generally done via carved channels of less than 10 cm width, which redirect flow across exposed bedrock (Fig. 10). In a few cases, earthen embankments diverted flow over compacted sediment. Cisterns within or on the edge of the cultivated zone tended to be large and associated with sedentary sites near Mesüdiler/Merdani Köy and Güzel Köy (Site 34; see Fig. 3). The cisterns in the eastern uplands were smaller and seemingly isolated (e.g., Sites 45, 47, and 67) or in rough proximity to campsites in the uplands (Site 37).

All of the features predicted by Chang and Koster (1986:112-115) for pastoral nomadic landscapes are found in abundance in the eastern uplands. Like the isolated animal enclosures, these check dam and cistern features often lack associated surface artifacts and are therefore very difficult to date. It is likely that many were created by the inhabitants of nearby campsites, but empirical data to establish such an association is absent.

[A] Survey on the Western Cultivated Terraces

The western portion of the HMTS area is similar to the terrain traditionally the focus of Near Eastern surveys: productive agricultural land in proximity to water sources (the Tigris) and rich alluvial sediments. Earlier reconnaissance projects (Algaze 1989; Algaze, et al. 1991; Ay 2001) recovered typical Near Eastern mounded sites in this region.

Because of the dramatic landscape impact of mechanized agriculture, cultivated terraces demand a different set of survey methods. With the intention of documenting sites of all morphologies, we adopted a stratified survey procedure, with two primary goals. For the mounded sites we employed traditional targeted or opportunistic methods of site identification (for northern Mesopotamia see, e.g., Wilkinson and Tucker 1995:15-18; Ur 2002:58-62). In these cases, sites' boundaries were identified using topographic changes or qualitatively perceived declines in artifact density or architectural remains. The Chalcolithic and Bronze Age sites at Kavusak Tepe (Site 4) and Güzel Köy (Site 34) were recorded in this manner.

Beyond the edges of the mounded sites, we applied transect-walking methods typical of North America and the Mediterranean, but rarely used in the Near East. Agricultural fields were digitized from a georeferenced Ikonos satellite image and served as transect boundaries. Within each field, survey team members walked transects at intervals of 25 m, restricting their observations to a swath of 2 m on either side of the transect. Unlike most Mediterranean methods,

that aggregate transects counts and artifacts at the level of the transect or field, the HMTS plotted individual artifacts. Their positions were marked with a color-coded flag (blue for ceramic, red for lithic, etc.) and were collected. Subsequently, these positions were recorded with a Trimble GeoXT GPS/mobile computer (Fig. 11A). Under normal conditions of satellite coverage, GPS positions in this area of Turkey have an absolute positioning error of 4-5 m. However, this error was uniform, so that the error in relative positioning (i.e., the spatial relationship between any two positions) was 1 m or less. Thus the distribution of artifacts within a scatter was mapped accurately, although the absolute position of that scatter on the earth's surface might be off by as much as 5 m. Only after collection, using density interpolation methods in a GIS database, did we define "sites" as bounded concentrations of artifact scatters (Fig. 11B). This component of the survey was thus "siteless" in the sense that we mapped individual artifacts and used their distribution to define site boundaries (Dunnell 1992; Dunnell and Dancey 1983). In two field seasons (2007-2008), HMTS team members have walked 412 transects covering 66,990 meters (including transects across Hirbemerdon's outer town), and have recovered 7,051 potsherds, 907 lithics, and 33 pieces of ground stone.

Transect walking in the area immediately around Hirbemerdon Tepe revealed several elevated concentrations of artifacts, four of which were given site designation (Fig. 12). Two (Sites 19 and 22) are scatters of Medieval Islamic

pottery, including distinctive green glazed sherds. A third area west of Hirbemerdon (Site 2) consisted of chaff-tempered handmade sherds of Neolithic or Chalcolithic date. A fourth area immediately NE of Hirbemerdon, on the opposite side of a wadi, contained MBA and Iron Age sherds, and is probably to be considered a suburb of Hirbemerdon itself. Further to the south, a scatter of Hellenistic sherds (Site 8) has been traced over 8 ha in the area of Tepekonak. None of these sites were visible in CORONA or Ikonos satellite imagery, nor would any have been identified via vehicular survey.

Mounded sites, the archetypical settlement form in the Near East, are small and uncommon in the HMTS region. Two such sites were Hirbemerdon Tepe itself (Site 1) and Kavuşak Tepe (Site 4, 1.3 ha); both had already been identified by Algaze's survey (Algaze, et al. 1991 Fig. 2 nos. 71 and 25). Hirbemerdon and Kavuşak are the only two MBA sites recovered in the HMTS area, which again demonstrates the effectiveness of traditional survey techniques in approaching the settlement patterns of the Bronze Age in the Near East. Other nearby MBA sites such as Salat Tepe (Ökse and Görmüş 2006), Kavuşan Tepe (Kozbe, Köroğlu, and Sağlamtemir 2004), and Kenan Tepe (Parker and Swartz Dodd 2003) have the same high mounded morphology (see Fig. 1).

[A] Discussion

With the exception of the MBA pattern discussed above, it is not yet possible to discuss synchronic settlement systems across the entire survey region.

Given the nature of the surface remains, this will require additional seasons of survey and even then may be difficult to obtain without innovations in dating that are less tied to chronologically sensitive material culture. The majority of surface sherds are very small and badly weathered. At the present stage of research, however, the survey results offer new perspectives on issues concerning pastoral nomadic landscapes, particularly with regard to the spatial distribution of different types of past activities and the effectiveness of archaeological survey methods in recovering them.

[B] Pastoral Nomads in the Eastern Uplands

The assessment of most of these sites as belonging to pastoralists revolves around the substantial investment in animal infrastructure, in particular enclosures, feeding troughs, and various features designed to impound surface runoff for a limited time. The 20th century campsites have thick dung deposits and a substantial component of veterinary artifacts such as syringes and small medicine bottle fragments. The absence of agricultural features such as field systems, terraces, and runoff irrigation, in combination with the generally unsuitable landscape, argues for pastoralism as the primary economic focus of the past inhabitants of the eastern uplands.

The assessment of the occupants as non-sedentary is based on the nature of the architectural remains. At Sites 18 and 38, some of the stone walled structures were probably inhabited by humans, as evidenced by artifact scatters in

the spaces in front of them, internal hearths and holes for tent poles, and above all a lack of animal dung. In all of these cases, however, the reconstructed height of the walls is about one meter. These walls were not intended to support a roof but rather served as the base of a multi-poled tent, an arrangement documented ethnographically (e.g., Cribb 1991:189). Stone tent footings occur at the same campsites as cleared rectangular spaces, which far outnumber them. These more elaborated tent spaces were probably for headmen (Hütteroth 1959:66-67).

We do not assume a sharp division between pastoral nomads and sedentary agriculturalists, however. Mobile pastoralists are highly variable in their mobility, their degree of dependence on pastoral products, and their relationships with settled groups (Khazanov 1984; Salzman 2002; Porter 2002). While pastoral nomads in the region in the 1950's did some farming and owned small plots in their winter pastures (Hütteroth 1959:55-56), the marginality of the eastern uplands for agriculture makes it likely that they would have traded with local cultivators for cereals. On the other hand, their isolated location, mostly well beyond the catchments of sedentary sites on the terraces, argues for a degree of autonomy, unlike in recent years when pastoral groups rented and lived on harvested fields near the villages. In fact, the degree to which they invested in their winter pastures through tent and corral footings and carved cisterns suggests that they held some sort of title to the land.

The recognition of the variability of pastoral nomadic adaptations fits well with the variability of pastoral remains in the survey area. It is difficult to compare the possible campsite traces from the present zone of cultivation, which have been disarticulated and homogenized by the plow, with the better-preserved remains in the eastern uplands, but even within the uplands the campsites are highly variable in scale, structure, and components. It would be inappropriate to use the later 20th century campsites at Sites 18 and 36 as strict templates for interpreting older sites. Rather they should serve to create one model against which the others can be contrasted. For example, the effort expended in constructing stone enclosures for animals appears not to be characteristic of the older campsites. It seems certain that the variability in campsite structure is related to differences in pastoral nomadic society, economy, and external relations at various times in the past. A deeper understanding of this variation is a goal of future research.

One generalization about the nomadic pastoralists in the eastern uplands, ancient and recent, is that they were economically and probably politically marginalized. In times of political ascendancy by pastoral nomadic groups, one would expect the tribes to assert their rights to the abundant and reliable pasture found on the river terraces; groups pasturing in the uplands would have been relatively poor. Under strong state government, for example since the founding of the Turkish Republic in 1923, only impoverished groups would be unable to pay

to rent harvested fields. Rather than offering a representative sample of pastoral nomadic campsites, the uplands are a window of preservation onto the more marginal end of the continuum.

In terms of their impact on archaeological landscapes, mobile pastoralists are regarded as rather benign, compared to the transformative potential of sedentary agriculturalists. An unexpected result of our survey was discovery of evidence for the impact of the pastoral presence on earlier landscapes. The uplands have abundant traces of Palaeolithic hunting and flintknapping, and many caves and rockshelters are found within the HMTS region (see Fig. 3). All have been used in recent centuries for animal shelters, and resulting dung deposits obscured (and substantially raised) their floors and the talus slopes in front of them. The eastern uplands also include Site 38, an extensive complex of multi-room cave dwellings carved into the sides of a steep valley (Fig. 13). Such cave dwellings are best known from the Medieval city of Hasankeyf, 30 km downstream from the HMTS, where carved cliffs extend for three miles along the Tigris banks (Taylor 1865:33-35; Sinclair 1989:230-239). The 20 cave dwellings at Site 38 have sheltered animals in recent centuries, blanketing both their interiors and the open spaces in front of their entrances with dung. The intensive HMTS collections of the site produced only a handful of medieval sherds. Animals thus have the centripetal effect of moving organic materials from sites' catchments inward toward the campsites, and because nomadic groups often

choose to reoccupy areas of former human occupation, the result is the obscuring of earlier surfaces and artifacts. Still to be evaluated is the impact of grazing, the erosional products of which may have filled wadi bottoms, clogged cisterns and check dams, and obscured earlier sites.

[B] Problems of Chronology in Pastoral Nomadic Landscapes

A further bias of traditional Near Eastern survey methods in the recovery of pastoral nomadic remains stems from a reliance on ceramics for dating. Instead of heavy ceramic vessels, pastoral nomads have often used containers of lighter, more ephemeral materials that do not survive in the archaeological record. They tend to carry small numbers of belongings on migrations, and their campsites often have short spans of inhabitation. These factors mitigate against the accumulation of substantial chronologically sensitive surface assemblages. These dating difficulties are even greater for landscape features such as terraces, check dams, and cisterns. Faced with these difficulties and the corresponding problems of relating campsites and features to broader settlement systems, many researchers have opted to disregard them.

Even if the campsites and landscape features in the HMTS region are difficult to date with precision, they are worthy of archaeological attention given that our empirical knowledge of pastoral nomadic physical remains is so disproportionately low when compared to their economic and historical importance as revealed in ancient texts and ethnohistorical records. The results of

the HMTS cannot yet contribute to the elucidation of a particular historical situation, but they add substantially to a general understanding of the organization and placement of campsites, modifications of the surrounding environment through the construction of cairns and water collection features, and the taphonomic processes involved in the preservation of campsites. The chronological challenges for a processual understanding are substantial and not to be downplayed; in future seasons, we intend to explore alternative dating methods via soil coring and measurements of lichen growth on stones.

[B] “Continuous Landscapes” in Mesopotamia

As landscape approaches to the past are integrated into archaeological research, it is apparent that artifacts are not limited to discrete places but are distributed widely across the landscape at variable density. The “continuous landscape” concept is particularly applicable in the Mediterranean and Near East, where climatic conditions promote visibility of surface artifacts (Cherry 1983:394-397; Bintliff and Snodgrass 1988). The alluvial plains of northern Mesopotamia are covered by a carpet of small and abraded potsherds that are particularly dense in the immediate hinterlands of Early Bronze Age sites; these scatters are interpreted as the results of manuring, the deliberate deposition of settlement debris onto agricultural fields (Wilkinson 1989; 1994:491-492).

The continuous landscape of the Upper Tigris terraces presents a different picture. Instead of densities that decline steadily with distance from mounded

sites, these scatters are characterized by small low density concentrations amidst the general “background” density. These concentrations are more likely to be sites for which two interpretations are possible. They may have been small villages or isolated farmsteads that were disassembled at some point after their abandonment for the expansion of agricultural fields; the stones that line the edges of the present field system argue for this possibility. Alternatively, these places may have marked seasonal campsites with little or no permanent architecture. The low density of surface materials, compared to the mounded sites along the Tigris terraces and on the alluvial plains elsewhere in northern Mesopotamia, underscores this possibility. Such campsites or isolated farmsteads existed on the alluvial plains of northern Mesopotamia, but are barely visible, if at all, within the denser and more continuous scatter that resulted from EBA manuring practices.

[B] Visibility, Preservation and Destruction of the Landscape

Ultimately, our ability to assess the history and development of settlement and land use in the Upper Tigris region will depend on our ability to control for two variables: landscape visibility and the degree of preservation or destruction through time. The western HMTS region is highly developed for agriculture at present, which reduces the visibility of archaeological landscapes. The irrigation of cereal crops with Tigris water means higher yields and more dense stands of chaff following the harvest; the relatively low population of sheep and goat herds simply cannot graze it all, and therefore in the majority of fields the surface, and

any artifacts upon it, is obscured or completely obstructed. Furthermore, the prevalence of summer crops (cotton, various vegetables, and watermelon) further reduces the number of high visibility fields in which we can conduct intensive transect survey.

This modern intensification not only reduces visibility, it also has transformed the surviving record in ways that make sites increasingly difficult to identify. In all periods, most residential structures in this area were constructed with stone foundations and lower wall courses, and in some cases were constructed entirely of stone. These structures will remain highly visible, even if collapsed, unless the stones are taken away for reuse. It is probable that recycling of stones has occurred continually throughout the Holocene. Perhaps more destructive is the expansion of agricultural fields to former areas of sedentary settlements. Architectural stones are damaging to plows and therefore will be removed by farmers, whether in a single planned event or opportunistically through time. In either case, these actions will relocate the most visible aspect of abandoned settlements and cairn fields, often shifting the stones into reworked linear arrangements at the ends of fields. The flat sherd scatter sites that are interpreted as possible campsites might have had stone architectural remains that have now been removed. All such unmounded sites around Hirbemerdon Tepe were found within cultivated fields, and all of these fields had abundant stones at their fringes. It is hard to say when these field clearances might have happened,

but since agriculture has formed the subsistence base of the sedentary villages for millennia, it is unlikely to be a purely modern phenomenon. Bronze Age farmers may have dismantled Neolithic sites, Hellenistic farmers could have dismantled Bronze Age sites, and so on.

This hypothesized recycling process would suggest that the most easily identified sites, the high mounded *tepes*, have been preserved because their settlement histories took them over a morphological threshold beyond which later settlers found it easier to ignore them (or continue to settle on them) than to dismantle them for other purposes. The most likely way this might happen is through continuous settlement, such as that which appears to characterize the later Early and Middle Bronze Ages at places like Hirbemerdon Tepe (Site 1), Kavuşak Tepe (Site 4), Güzel Köy (Site 34), and others in the region. Short-lived or low-density settlements present less challenges to stone recycling; because they now survive disproportionately as flat sherd scatters, they are less likely to be recovered using traditional survey methods.

The most short-lived and low density of all settlement types are of course the campsites of semi- or non-sedentary pastoralists. Field clearance processes easily remove their relatively ephemeral walls. Where agriculture is not renewed, such sites are likely to survive for a long time. The survey of the eastern uplands, where agriculture is rare even during this current phase of intensification, shows that campsites can be found, as can other elements of pastoral landscapes like

cisterns and check dams. We must bear in mind this spatial patterning of survival and destruction (Wilkinson 2003:7-10) and not assume that the absence of campsites from presently cultivated areas means that they were never there in the past; this misinterpretation has been demonstrated elsewhere with historical records and satellite imagery (Alizadeh and Ur 2007).

[A] Conclusions

Intensive survey along the Upper Tigris River in southeastern Turkey demonstrates that the remains of pastoral nomadic campsites and landscape features survive and can be recovered. Doing so requires an assessment of landscape taphonomic processes for a given region, with particular attention to the geomorphological contexts likely to preserve them. In Mesopotamia, such traces are far more likely to survive in areas that are only of marginal use for cultivation.

When it is possible to propose dates for long-abandoned camps and landscape features, they can be placed in the Medieval period (11th-15th centuries AD) or in the 20th century AD. Many other sites and features simply lack a robust surface assemblage, an all too common problem in landscape archaeology.

It is unwise to assume that the remains recovered in these zones of preservation are widely representative of past mobile groups, however. An analogy can be drawn with the distribution of modern foraging and hunting groups. These peoples' traditions survive because they occupy landscapes of low productivity for sedentary agriculture, and one must be cautious about

reconstructing prehistoric societies by analogy with them (Sahlins 1972:1-39).

Relatively high visibility pastoral nomadic landscapes, such as that of the eastern uplands, are the products of groups who were, for one reason or another, unable to exploit richer or more reliable pastures elsewhere.

Pastoral nomadic campsites in areas of high agricultural potential will almost certainly be transformed by cultivation to the degree that traditional low intensity methods of Mesopotamian survey cannot identify them. The intensive “siteless” methodology employed by the HMTS has recovered ephemeral scatters of possible pastoral nomadic origins, but at the cost of reduced spatial extent. Such scatters probably exist on the surveyed alluvial plains of northern Mesopotamia but cannot be recognized within the dense carpet of EBA manuring debris. If we are to account for the fullness and diversity of Mesopotamian cultural landscapes, we will need to change our survey methods. We do not to advocate a new “Mesopotamian Myopia” in which microregions are targeted at the expense of true regional analysis (see Blanton 2001). If Mesopotamian survey archaeology is to move beyond the origins of cities and states and to investigate issues of non-sedentary and low density settlement and land use, however, we must adopt a multiscalar approach that includes pedestrian techniques.

[A] Acknowledgements

The Hirbemerdon Tepe Survey project gratefully acknowledges the support and encouragement of the Directorate General of Monuments and

Museums of the Republic of Turkey, the staff of the Diyarbakır Museum (especially Nevin Sokuyaka), and our representatives Nilüfer Babacan, Ümit Yarıcı, and Fatma Timur. The HMTS is a component of the Hirbemerdon Tepe Archaeological Project, and we thank its director Nicola Laneri, its co-director Mark Schwartz, and team members Stefano Valentini, Anacleto D'Agostino, and Francesca Gulli. In addition to the authors, the core field team in 2007-2008 consisted of Dr. Joshua Wright, Dr. Güner Coşkunsu, Guido Guarducci, Serdar Ona, Umut Parlıtı, and Lauren Santini. We were also assisted in the field by Dr. Mark Schwartz, Rémi Berthon, Nate Hansen, Mary Bagazinski, and Nilüfer Akdağ. We are most appreciative of the efforts of the team's driver Mehmet Kaya and our cook Necmi Yaşar. The 5m contour interval topographic data was generously supplied by Devin White, and we thank Guillermo Algaze for his encouragement and the use of his Batman-Bismil survey maps. This paper benefited from critical comments by Rowan Flad, Joshua Wright, Nicola Laneri, and three anonymous reviewers.

Author Names and Biographies:

Jason Ur received his PhD in Near Eastern Languages & Civilizations from the University of Chicago in 2004. He is currently Assistant Professor in the Anthropology Department at Harvard University. His research interests are landscape archaeology, early urbanism and pastoral nomadism, and complex societies of the ancient Near East. Mailing address: Department of Anthropology, Harvard University, 11 Divinity Avenue, Cambridge, MA 02138 USA. Email: jasonur@fas.harvard.edu.

Emily Hammer is a PhD student in Archaeology in the Anthropology Department at Harvard University. Her dissertation will focus on nomadic pastoralists in northern Mesopotamia.

Bibliography:

Alcock, Susan E. and John F. Cherry, editors

2004 *Side-By-Side Survey: Comparative Regional Studies in the Mediterranean World*. Oxford: Oxbow Books.

Algaze, Guillermo

1989 "A New Frontier: First Results of the Tigris-Euphrates Archaeological Reconnaissance Project, 1988," *Journal of Near Eastern Studies* 48: 241-281.

Algaze, Guillermo, R. Breuninger, C. Lightfoot and M. Rosenberg

1991 "The Tigris-Euphrates Archaeological Reconnaissance Project: A Preliminary Report of the 1989-1990 Seasons," *Anatolica* 17: 175-240.

Alizadeh, Karim and Jason A. Ur

2007 "Formation and Destruction of Pastoral and Irrigation Landscapes on the Mughan Steppe, North-Western Iran," *Antiquity* 81: 148-160.

Ay, Eyyüp

2001 "Upper Tigris Valley Survey: 1999 Season," In Numan Tuna, Jean Öztürk and Jâle Velibeyoğlu, eds., *Salvage Project of the Archaeological Heritage of the Ilisu and Carchemish Dam Reservoirs, Activities in 1999*. Ankara: Middle East Technical University, 715-728.

Barın, Gürol, Enver Akin and Feridun Suha Şahin

2003 "İlisu Klâsik Yüzey Araştırmaları 200221. *Araştırma Sonuçları Toplantısı, 1. Cilt.* Ankara: T.C. Kültür ve Turizm Bakanlığı Yayınları, 127-138.

Barnard, Hans and Willeke Wendrich, editors

2008 *The Archaeology of Mobility: Old World and New World Nomadism.* Los Angeles: Cotsen Institute of Archaeology.

Bintliff, John L. and Anthony M. Snodgrass

1988 "Off-Site Pottery Distributions: A Regional and Interregional Perspective," *Current Anthropology* 29: 506-513.

Blanton, Richard E.

2001 "Mediterranean Myopia," *Antiquity* 75: 627-629.

Buccellati, Giorgio

1966 *The Amorites of the Ur III period.* Naples.

Chang, Claudia and H.A. Koster

1986 "Beyond Bones: Towards an Archaeology of Pastoralism," In Michael B. Schiffer, ed., *Advances in Archaeological Method and Theory* vol. 9. New York: Academic Press, 97-148.

Cherry, John F.

1983 "Frogs Round the Pond: Perspectives on Current Archaeological Survey Projects in the Mediterranean Region," In Donald R. Keller and

David W. Rupp, eds., *Archaeological Survey in the Mediterranean Area*.
BAR International Series 155. Oxford: Oxford University, 375-416.

Cribb, Roger

1991 *Nomads in Archaeology*. Cambridge: Cambridge University Press.

Danti, Michael

2000 "Early Bronze Age Settlement and Land Use in the Tell es-Sweyhat Region, Syria," Ph.D. dissertation, University of Pennsylvania.

Doğan, Uğur

2005 "Holocene Fluvial Development of the Upper Tigris Valley (Southeastern Turkey) as Documented by Archaeological Data," *Quaternary International* 129: 75-86.

Dunnell, Robert C.

1992 "The Notion Site," In Jacqueline Rossignol and LuAnn Wandsnider, eds., *Space, Time, and Archaeological Landscapes*. New York: Plenum, 21-41.

Dunnell, Robert C. and William S. Dancey

1983 "The Siteless Survey: A Regional Scale Data Collection Strategy," *Advances in Archaeological Method and Theory* 6: 267-287.

Fleming, Daniel E.

2004 *Democracy's Ancient Ancestors: Mari and Early Collective Governance*. Cambridge and New York: Cambridge University Press.

Frachetti, Michael D.

2008 "Variability and Dynamic Landscapes of Mobile Pastoralism in Ethnography and Prehistory," In Hans Barnard and Willeke Wendrich, eds., *The Archaeology of Mobility: Old World and New World Nomadism*. Los Angeles: Cotsen Institute of Archaeology, 366-396.

Frachetti, Michael D. and Alexei N. Mar'yashev

2007 "Long-Term Occupation and Seasonal Settlement of Eastern Eurasian Pastoralists at Begash, Kazakhstan," *Journal of Field Archaeology* 32: 221-242.

Haiman, Mordechai

1992 "Cairn Burials and Cairn Fields in the Negev," *Bulletin of the American Schools of Oriental Research* 287: 25-45.

Hole, Frank

1974 "Tepe Tula'i, an Early Campsite in Khuzistan, Iran," *Paléorient* 2: 219-242.

Honeychurch, William, Joshua Wright and Chunang Amartuvshin

2007 "A Nested Approach to Survey in the Egiin Gol Valley, Mongolia," *Journal of Field Archaeology* 32: 339-352.

Hütteroth, Wolf-Dieter

1959 *Bergnomaden und Yaylabauern im mittleren kurdischen Taurus.*
Marburger Geographische Schriften 11. Marburg: Geographischen
 Institutes der Universität Marburg.

Khazanov, Anatoly M.

1984 *Nomads and the Outside World.* Cambridge: Cambridge University
 Press.

Kozbe, Gülriz, Kemalettin Köroğlu and Haluk Sağlamtemir

2004 "2001 Excavations at Kavuşan Höyük," In Numan Tuna, Jean
 Greenhalgh and Jale Velibeyoğlu, eds., *Salvage Project of the*
Archaeological Heritage of the Ilisu and Carchemish Dam Reservoirs:
Activities in 2001. Ankara: Middle East Technical University, 494-503.

Kuzucuoğlu, Catherine

2002 "Preliminary Observation on the Tigris Valley Terraces between
 Bismil and Batman," In Numan Tuna and Jale Velibeyoğlu, eds., *Salvage*
Project of the Archaeological Heritage of the Ilisu and Carchemish Dam
Reservoirs: Activities in 2000. Ankara: Middle East Technical University,
 766-771.

Laneri, Nicola, Mark Schwartz, A. D'Agostino, S. Valentini and G. Pappalardo

2006 "A Preliminary Report of the Archaeological Excavations at
 Hirbemerdon Tepe, Southeastern Turkey," *Anatolica* 32: 153-188.

Laneri, Nicola, Mark Schwartz, Jason A. Ur, Stefano Valentini, Anacleto

D'Agostino, Rémi Berthon and Mette Marie Halde

2008 "The Hirbemerdon Tepe Archaeological Project 2006-2007: A Preliminary Report on the Middle Bronze Age 'architectural complex' and the Survey of the Site Catchment Area," *Anatolica* 34: 177-240.

Matney, Timothy, Lynn Rainville, Kemalettin Köroğlu, Azer Keskin, Tasha

Vorderstrasse, Nursen Özkul Fındık and Ann Donkin

2007 "Report on Excavation at Ziyaret Tepe, 2006 Season," *Anatolica* 33: 23-74.

Mattingly, David

2000 "Methods of Collection, Recording and Quantification," In Riccardo Francovich and Helen Patterson, eds., *Extracting Meaning from Ploughsoil Assemblages. Archaeology of Mediterranean Landscapes* 5. Oxford: Oxbow, 5-15.

Ökse, A. Tuba and A. Görmüş

2006 "Excavations at Salat Tepe in the Upper Tigris Region: Stratigraphical Sequence and Preliminary results of the 2005-2006 Seasons," *Akkadica* 127: 167-198.

Parker, Bradley J. and Lynn Swartz Dodd

2003 "The Early Second Millennium Ceramic Assemblage from Kenan Tepe, Southeastern Turkey: A Preliminary Assessment," *Anatolian Studies* 53: 33-69.

Plog, Stephen, Fred Plog and Walter Wait

1978 "Decision Making in Modern Surveys," In Michael B. Schiffer, ed., *Advances in Archaeological Method and Theory Volume 1*. New York: Academic Press, 384-421.

Porter, Anne

2002 "The Dynamics of Death: Ancestors, Pastoralism, and the Origins of a Third-Millennium City in Syria," *Bulletin of the American Schools of Oriental Research* 325: 1-36.

Rosen, Steven A.

2003 "Early Multi-Resource Nomadism: Excavations at the Camel Site in the Central Negev," *Antiquity* 77: 749-760.

Sahlins, Marshall

1972 *Stone Age Economics*. New York: Aldine de Gruyter.

Salzman, Philip Carl

2002 "Pastoral Nomads: Some General Observations Based on Research in Iran," *Journal of Anthropological Research* 58: 245-264.

Schiffer, Michael B., Alan P. Sullivan and Timothy C. Klinger

1978 "The Design of Archaeological Surveys," *World Archaeology* 10: 1-28.

Sinclair, T.A.

1989 *Eastern Turkey: An Architectural and Archaeological Survey III*.
London: Pindar Press.

Szuchman, Jeffrey J.

2008 "Mobility and Sedentarization in Late Bronze Age Syria," In Hans Barnard and Willeke Wendrich, eds., *The Archaeology of Mobility: Old World and New World Nomadism*. Los Angeles: Cotsen Institute of Archaeology, 397-412.

Taşkıran, Harun and Metin Kartal

2004 "2001 Palaeolithic Survey in the Ilisu Dam Region," In Numan Tuna, Jean Greenhalgh and Jale Velibeyoğlu, eds., *Salvage Project of the Archaeological Heritage of the Ilisu and Carchemish Dam Reservoirs: Activities in 2001*. Ankara: Middle East Technical University, 725-737.

Taylor, J.G.

1865 "Travels in Kurdistan, with Notices of the Sources of the Eastern and Western Tigris, and Ancient Ruins in their Neighborhood," *Journal of the Royal Geographic Society of London* 35: 21-58.

Tuna, Numan, Jean Greenhalgh and Jale Velibeyoğlu, editors

2004 *Salvage Project of the Archaeological Heritage of the Ilisu and Carchemish Dam Reservoirs: Activities in 2001*. Middle East Technical University, Ankara.

Ur, Jason A.

2002 "Settlement and Landscape in Northern Mesopotamia: The Tell Hamoukar Survey 2000-2001," *Akkadica* 123: 57-88.

Wilkinson, T. J., Jason Ur and Jesse Casana

2004 "From Nucleation to Dispersal: Trends in Settlement Pattern in the Northern Fertile Crescent," In Susan E. Alcock and John F. Cherry, eds., *Side-By-Side Survey: Comparative Regional Studies in the Mediterranean World*. Oxford: Oxbow Books, 189-205.

Wilkinson, T.J.

1989 "Extensive Sherd Scatters and Land-Use Intensity: Some Recent Results," *Journal of Field Archaeology* 16: 31-46.

1994 "The Structure and Dynamics of Dry-Farming States in Upper Mesopotamia," *Current Anthropology* 35: 483-520.

2000 "Regional Approaches to Mesopotamian Archaeology: The Contribution of Archaeological Surveys," *Journal of Archaeological Research* 8: 219-267.

Wilkinson, T.J. and D.J. Tucker

1995 *Settlement Development in the North Jazira, Iraq*. Warminster:
Aris & Phillips, Ltd.

Williamson, Tom

1998 "Questions of Preservation and Destruction," In Paul Everson and
Tom Williamson, eds., *The Archaeology of Landscape: Studies Presented
to Christopher Taylor*. Manchester and New York: Manchester University
Press, 1-24.

Woods, John E.

1999 *The Aqquyunlu: Clan, Confederation, Empire*. 2nd ed. Salt Lake
City: University of Utah.

Wright, Joshua Saint Clair

2007 "Organizational Principles of Khirigsuur Monuments in the Lower
Eggin Gol Valley, Mongolia," *Journal of Anthropological Archaeology* 26:
350-365.

List of Figures

Figure 1. The Upper Tigris region of Diyarbakır province, with the HMTS area, excavated sites, and modern towns indicated. Topography shading at 50 m intervals. Inset: Eastern Turkey, with the Bismil-Batman region indicated.

Figure 2. Terrain of the eastern upland zone of the HMTS.

Figure 3. Topography and sites in the Hirbemerdon Tepe Survey region. Contours at 25 m intervals. Dashed line indicates the survey limits.

Figure 4. Site 36, a recent pastoral nomadic campsite in the eastern upland area.

Figure 5. Elements of pastoral architecture at Site 36. A. Cleared tent space with hybrid dry stone and brush enclosures in background; B. Brush and stone feeding trough.

Figure 6. Distribution of animal enclosures (white rectangles), tent sites (gray rectangles), and artifacts at Site 18. Contours at 5 m intervals.

Figure 7. Stone walled double enclosure at Site 50, facing north. The larger enclosure is 17 m in diameter.

Figure 8. Cairn fields in the HMTS region. Cultivated fields are shown in gray. A) Cairns and linear features at Site 16; B) Cairn field at Site 53.

Figure 9. A small earthen check dam at Site 91. The reservoir is 1.5 m in diameter.

Figure 10. The large cistern at Site 37, facing east. The entrance to the tank is near the figures at center; the feeder channel runs diagonally from the upper left down to the tank.

Figure 11. An example of transect walking on the cultivated terraces. Polygons represent the modern field system. A) Field boundaries, transects, and plotted artifacts (sherds, lithics, and ground stone artifacts); B) Interpolated artifact density.

Figure 12. Field scatters and artifact concentrations in the area around Hirbemerdon Tepe. Polygons represent the modern field system. Numbers indicate concentrations designated as sites.

Figure 13. Medieval cave dwellings reused as animal shelters by later pastoral nomadic groups at Site 38. Note the dry stone enclosures at right.

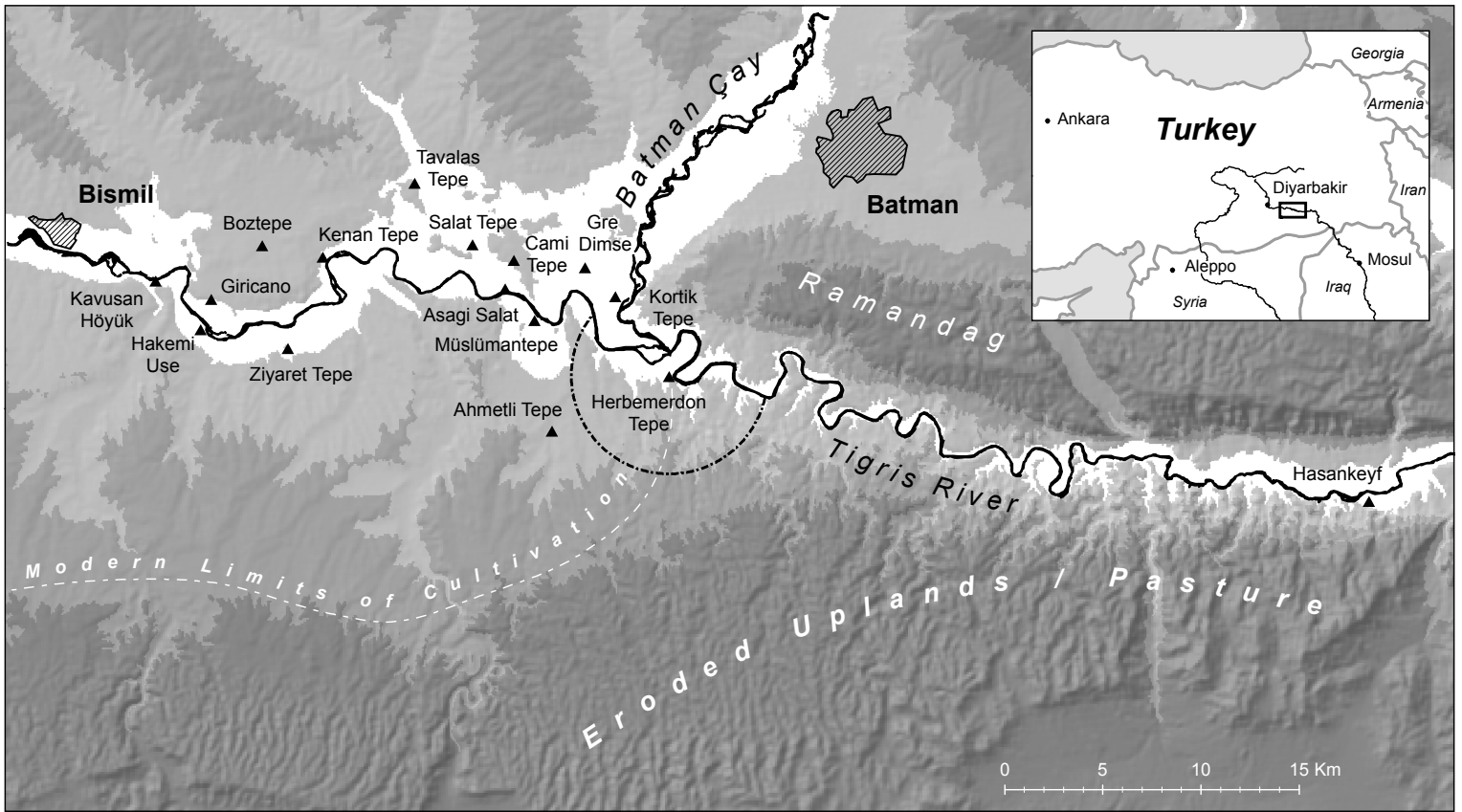


Figure 1. The Upper Tigris region of Diyarbakir province, with the HMTS area, excavated sites, and modern towns indicated. Topography shading at 50 m intervals. Inset: Eastern Turkey, with the Bismil-Batman region indicated.



Figure 2. Terrain of the eastern upland zone of the HMTS.

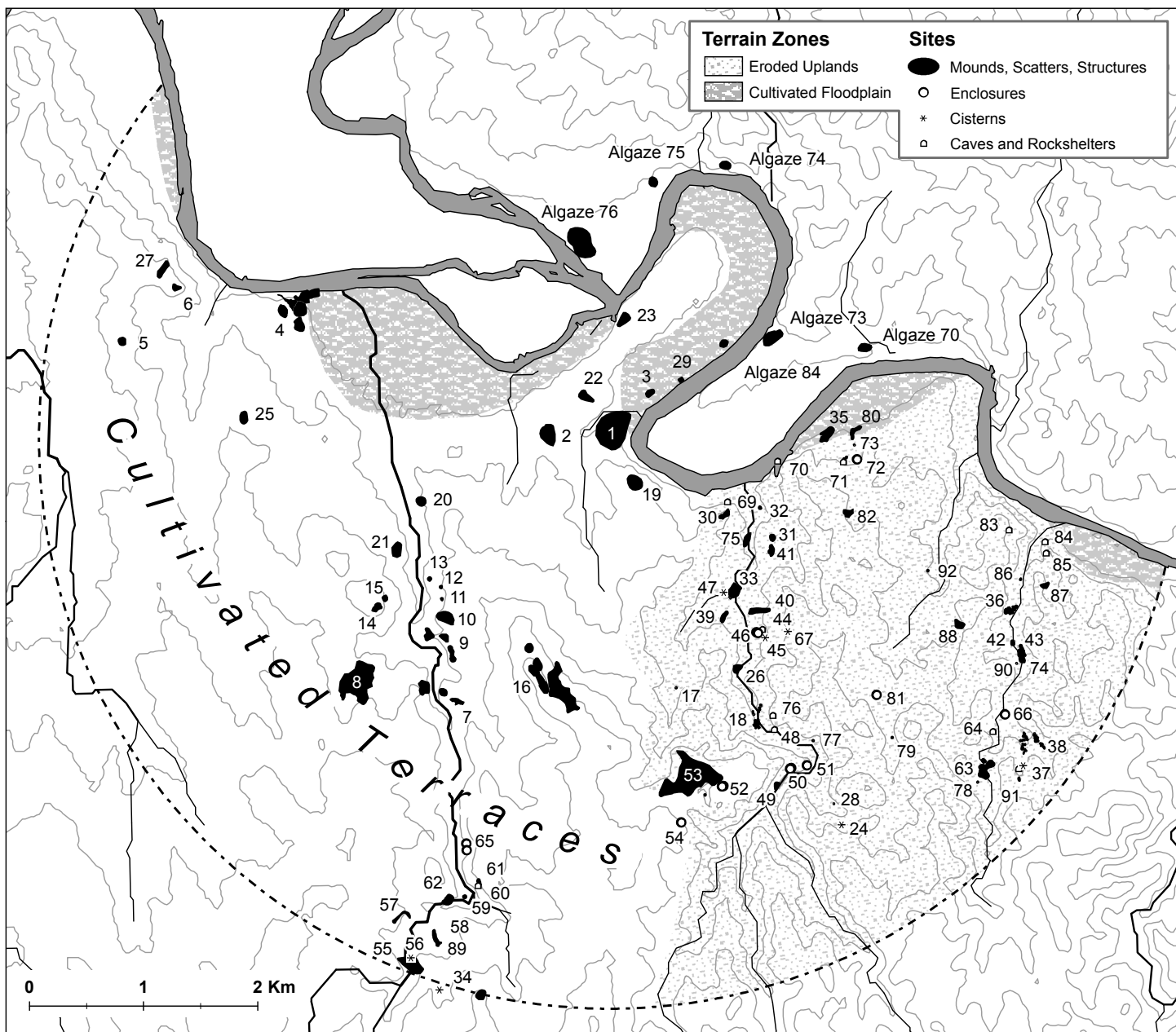


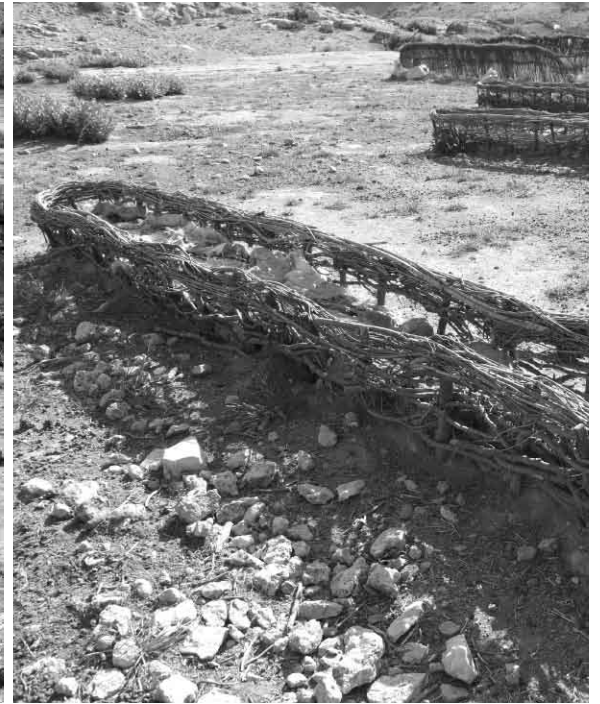
Figure 3. Topography and sites in the Hirbemerdon Tepe Survey region. Contours at 25 m intervals. Dashed line indicates the survey limits.



Figure 4. Site 36, a recent pastoral nomadic campsite in the eastern upland area.



A



B

Figure 5. Elements of pastoral architecture at Site 36. A. Cleared tent space with hybrid dry stone and brush enclosures in background; B. Brush and stone feeding trough.

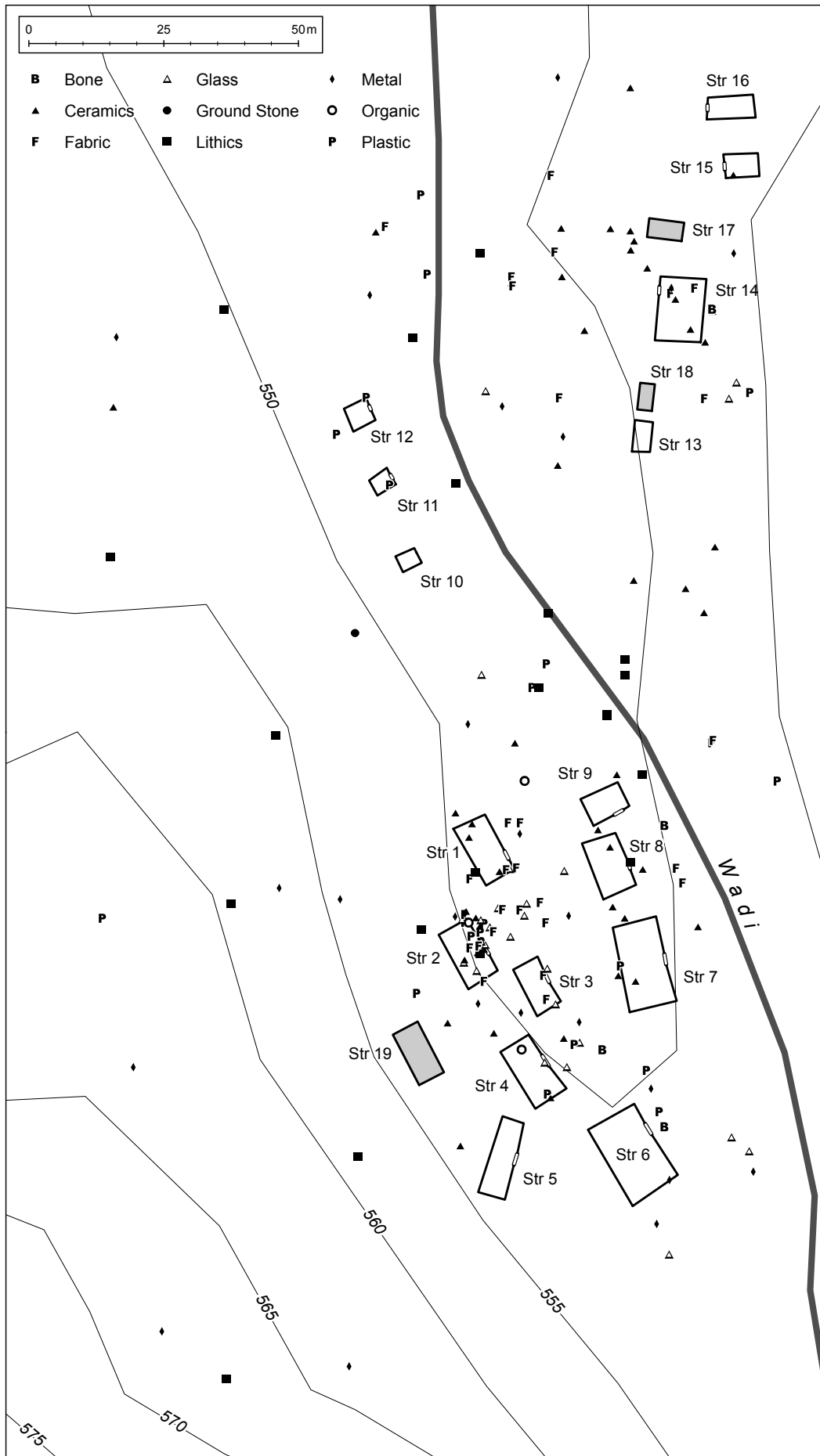


Figure 6. Distribution of animal enclosures (white rectangles), tent sites (gray rectangles), and artifacts at Site 18. Contours at 5 m intervals.



Figure 7. Stone walled double enclosure at Site 50, facing north. The larger enclosure is 17 m in diameter.

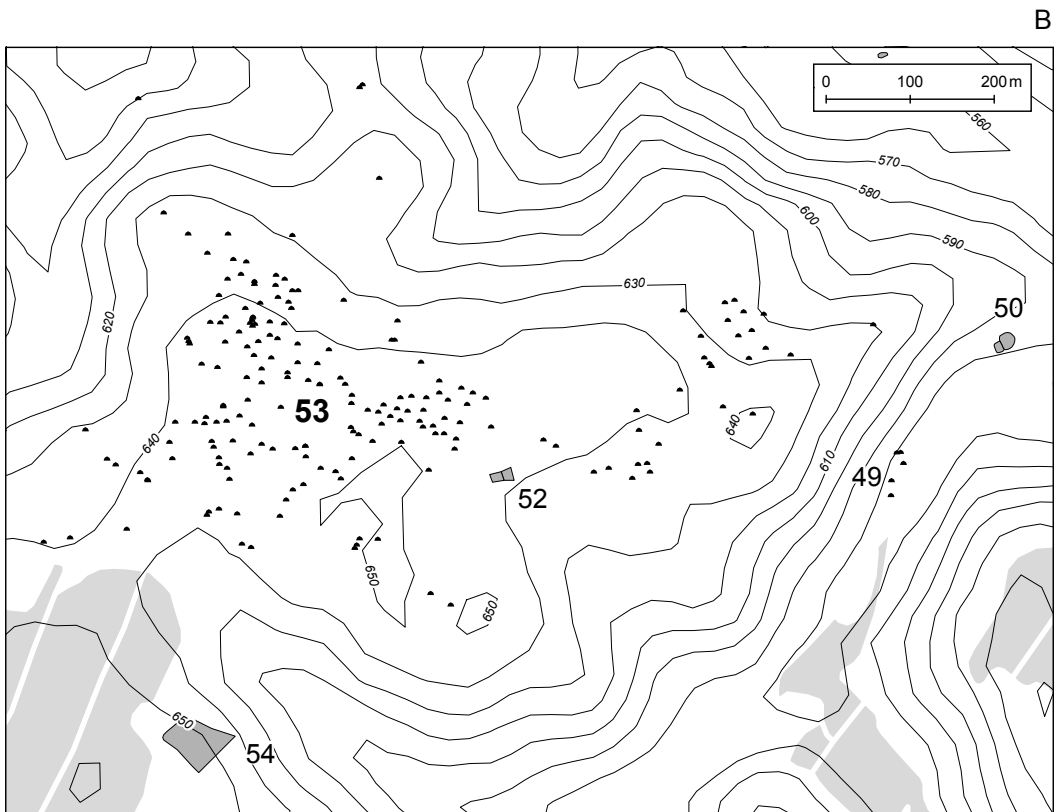
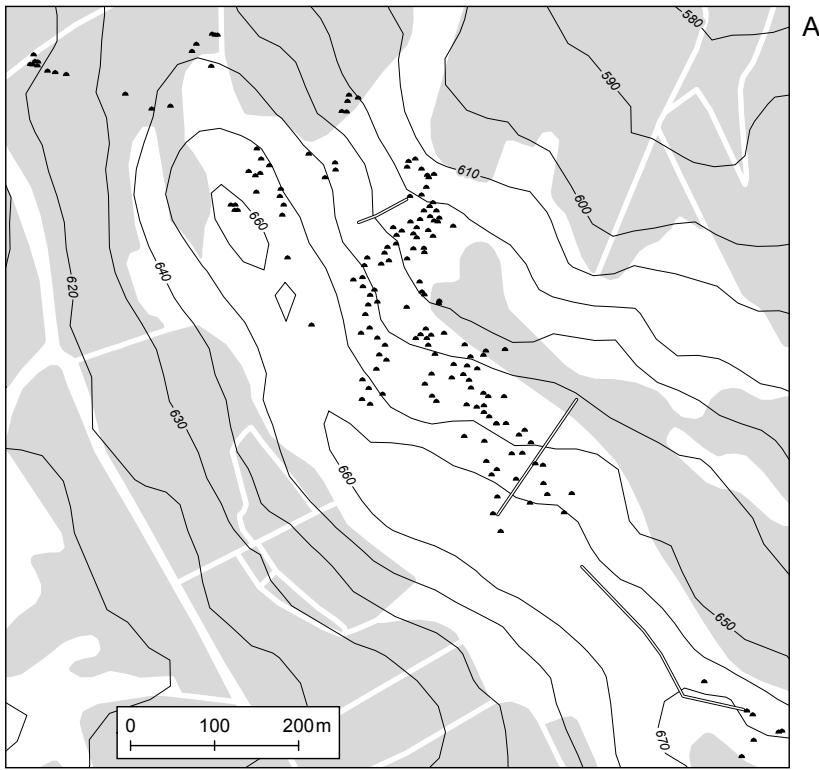


Figure 8. Cairn fields in the HMTS region. Cultivated fields are shown in gray. A) Cairns and linear features at Site 16; B) Cairn field at Site 53.



Figure 9. A small earthen check dam at Site 91. The reservoir is 1.5 m in diameter.



Figure 10. The large cistern at Site 37, facing east. The entrance to the tank is near the figures at center; the feeder channel runs diagonally from the upper left down to the tank.



A



B

Figure 11. An example of transect walking on the cultivated terraces. Polygons represent the modern field system. A) Field boundaries, transects, and plotted artifacts (sherds, lithics, and ground stone artifacts); B) Interpolated artifact density.

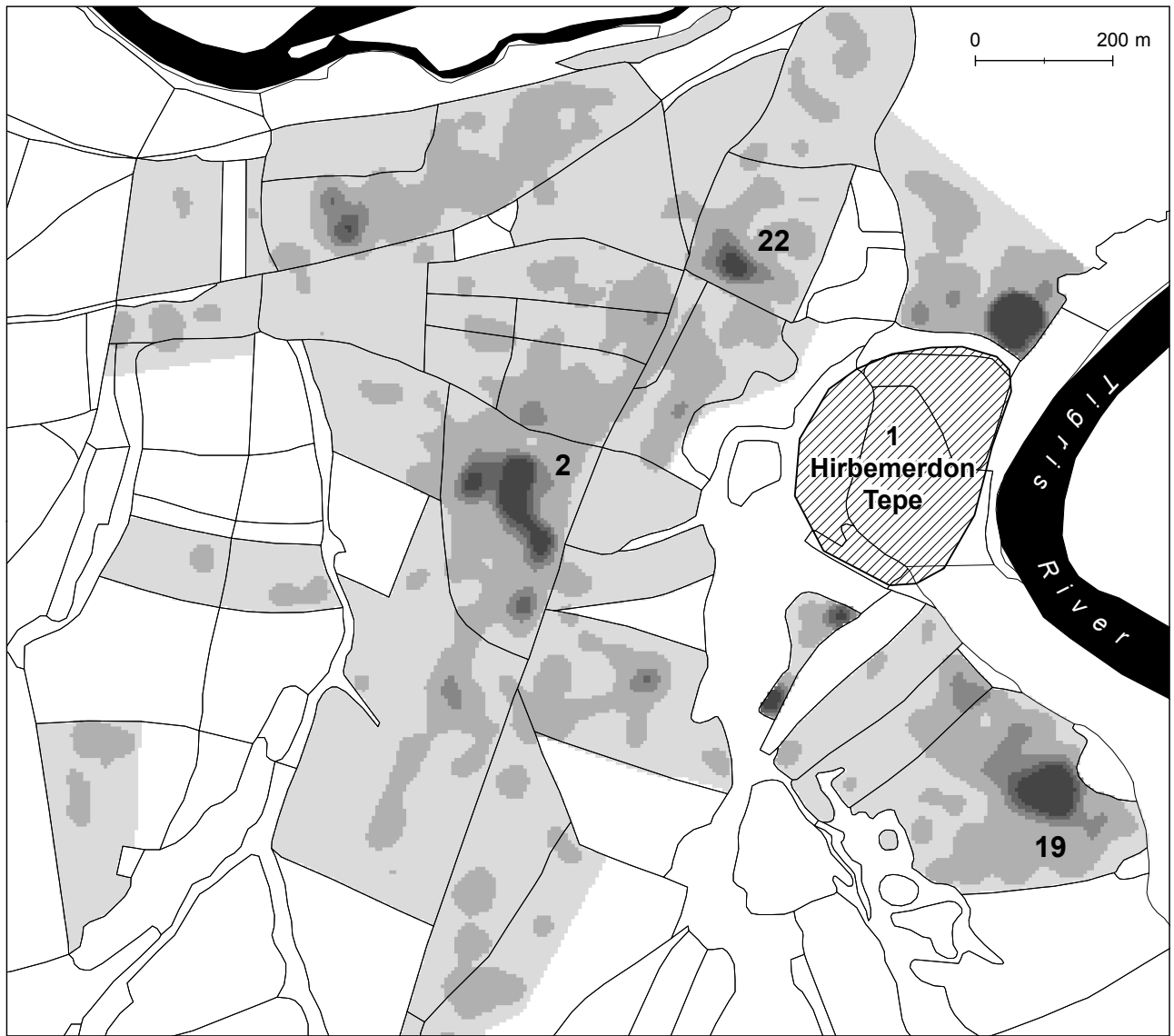


Figure 12. Field scatters and artifact concentrations in the area around Hirbemerdon Tepe. Polygons represent the modern field system. Numbers indicate concentrations designated as sites.



Figure 13. Medieval cave dwellings reused as animal shelters by later pastoral nomadic groups at Site 38. Note the dry stone enclosures at right.