Chapter 16

The rural landscape of the Assyrian heartland: recent results from Arbail and Kilizu provinces

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The world's first empires were grand experiments in centralized political power and the territorial expansion of social control. The elite manifestations of empires are often prominent and have been studied intensively by historians and archaeologists, and they can lead to the impression that the state was all-pervasive in the lives of its citizens, from the rulers themselves down to the humblest farmer. Given the elite origins and biases of the historical and archaeological datasets, however, we might ask more precisely what were the impacts of empire on the quotidian lives of its people. Were issues of political control of concern only to competing elites, with little or no significance to the majority of the population, or were daily practices closely controlled? This paper addresses these issues by presenting preliminary data of the Erbil Plain Archaeological Survey (EPAS) to better understand the settlement landscape in the heartland of the Neo-Assyrian empire (*c*. 934–605 BC) in northern Iraq.

Imperial capitals like Nimrud, Khorsabad, and Nineveh are often closely described by their founders in self-congratulatory texts, but if one leaves aside propagandistic claims, the empirical data on the inhabitants of early imperial capitals is often surprisingly slight. Were these cities filled by royal decree, or did people willingly come to live in them? Or were they grandiose but hollow political centres? Similar questions might be asked of rural settlement. To what extent did imperial powers restructure urban hinterlands? When shifts in settlement patterns can be mapped, were they the result of deliberate central planning, or an emergent product of local decisions by villagers? Many recent studies of early empires have focused, often by necessity, on imperial impacts on conquered outer provinces or peripheries, the incorporation of which turns states into empires; were impacts different between cores and peripheries? This problem is quite apparent in the Assyrian case, where the research that has been conducted on contemporary rural landscapes has taken place in neighbouring regions such as southeastern Turkey (Parker 2001; Parker 2012) or northern Syria (Morandi Bonacossi 2000; Wilkinson *et al*. 2005).

Forced migration is the central issue underlying changes in settlement patterns during the early first millennium BC. After a period of dismissal by proponents of processual archaeology, migration has seen a resurgence of study in recent years (Anthony 1990; Burmeister 2000). Many past migrations resulted from the decisions of small groups or like-minded individuals, but centralized imperial power can force the migrations of groups, communities, and even entire ethnicities. In various forms, forced migration has a long pre-modern history (Tägil 1990). Populations considered disloyal or treasonous can be expelled, as was the case with the Armenians in Turkey (Suny 2009). Sometimes populations can be shuffled within imperial borders, to remove troublesome groups from one area, and often to replace them with loyal colonists. Of particular importance in pre-modern empires was the movement of populations because of the value of their labour, for instance the *mitima* of the Inka empire (Murra 1980, 175–81). Forced internal migration has a long and sad history in the Near East, seen most recently in the destruction of Kurdish rural settlement in northern Iraq, and subsequent forced immigration to planned towns in the late 1980s (Human Rights Watch/Middle East 1995). Forced migration and deportation were also important techniques of political control and economic growth in the Assyrian empire (Oded 1979), to be discussed further below.

In addition to the demographic landscape, empires can impact their physical landscape. Centrally planned monumental projects can create durable features in the landscape that survive for archaeologists to recover. Such projects include monumental architecture in various forms (Trigger 1990; Osborne

2014a), but also elements of infrastructure such as road networks, which are well studied for the Inka and Roman empires (Hyslop 1984; Chevallier 1997). States and empires were capable of massive irrigation schemes that were radically in excess, in terms of labour and land, of the capabilities of individual villages or households. Finally, imperial planners created ideological landscapes through symbolically charged monuments that reinforced and recreated power structures.

Empires have adopted variable approaches to their landscapes. In many cases, the most expedient approach involves minimal direct impacts. In the case of the Neo-Assyrian empire, however, it appears that its kings, planners, and other elites engaged in landscape engineering in all of these domains – demographic, physical, and ideological – over the course of its three-century existence. The Erbil Plain Archaeological Survey (EPAS) is testing this model of a centrally planned, and potentially centrally administered, Neo-Assyrian landscape through archaeological survey and spatial analyses in the countryside between Erbil (ancient Arbail) and Nimrud, known from historical sources to be the heartland of the empire, and thus an ideal laboratory for answering questions about state-sponsored landscapes.

The engineered landscape of the Neo-Assyrian empire (*c.* 934–605 BC)

The Neo-Assyrian empire emerged in the early first millennium BC along the Tigris River in what is today northern Iraq (Fig. 16.1). From its ancestral city state of Assur, the kings of Assyria led campaigns to expand its borders, first to regain the territorial holdings lost by the Middle Assyrian state at the end of the second millennium BC, and then later to incorporate, either as provinces or closely controlled client states, small kingdoms in what is today Iraq, western Iran, southeastern Turkey, Syria, Lebanon, Jordan, and Israel (Reade 1995; Van De Mieroop 2007, 229–69; Bedford 2009; Parker 2012; Matney 2010). The politi-

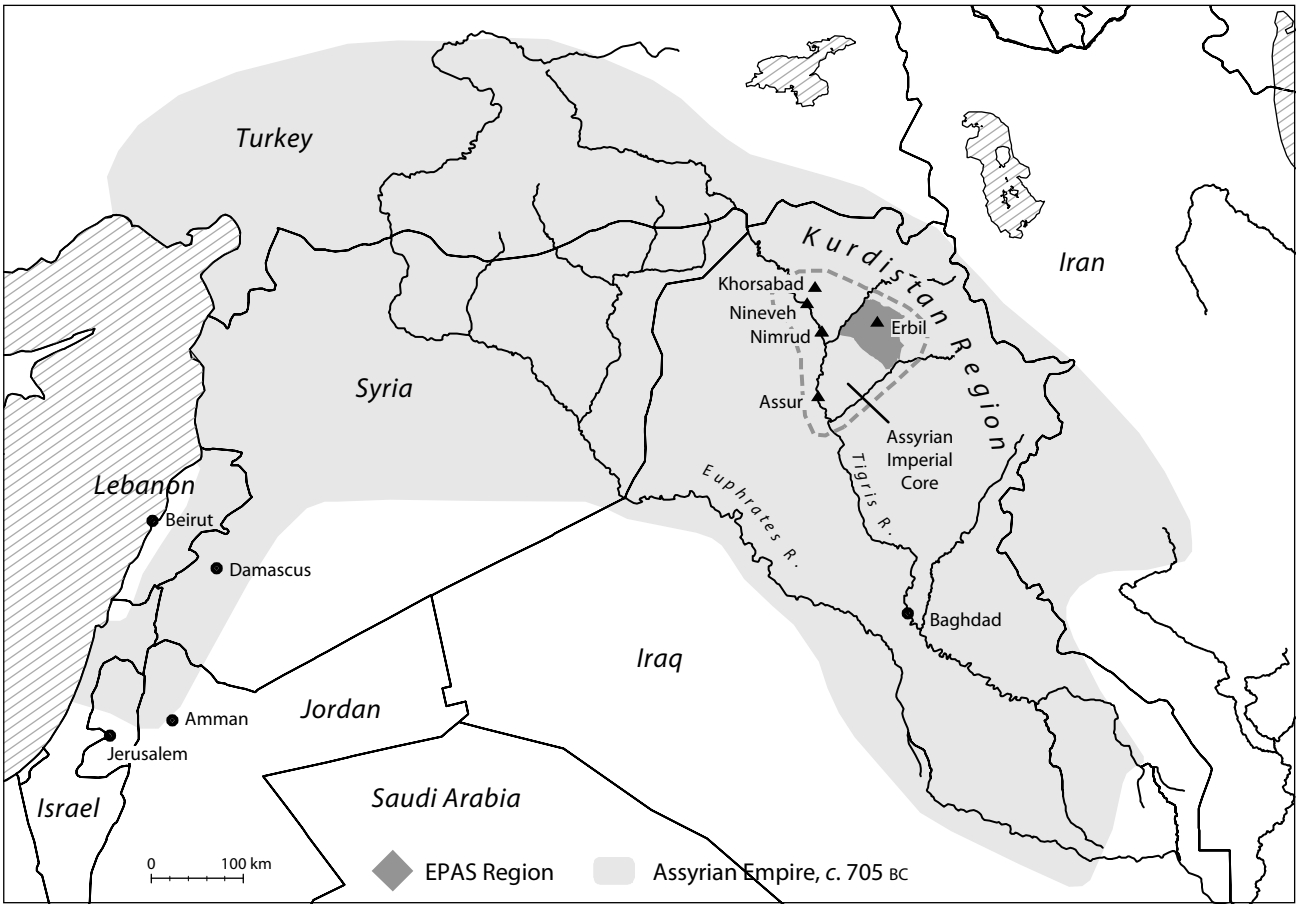

Figure 16.1. *The extent of the Neo-Assyrian empire, c. 705 BC, with the imperial core, capital cities, and EPAS project region indicated.*

cal centre along the Tigris was home to Assur and the subsequent imperial capitals at Nimrud, Khorsabad, and Nineveh, as well as provincial capitals at Arbail and Kilizu (modern Erbil and Qasr Shemamok, respectively) to its east (Pedde 2012; Radner 2011; Harmanşah 2012).

Despite its global importance and long history of investigation, the archaeological dataset on the imperial core is remarkably uneven. Since they were first investigated by Austen Henry Layard in the 1840s, the empire's largest cities have remained the focus of archaeological research (Layard 1849; Larsen 1996) and more specifically, the elite palaces and temples within the imperial capitals (Curtis & Reade 1995; Oates & Oates 2001; Russell 1991; Reade 2002). These excavations recovered thousands of written records, including propagandistic royal inscriptions, mundane letters, and administrative documents. Much less is known of Assyrian society below this hyper-elite upper stratum, however. Nascent holistic studies of cities, including their urban fabric, were stopped by the first Gulf War (Fiorina 2011; Stronach 1995; Stronach & Lumsden 1992). Excavations of smaller sites are almost completely unknown, outside of salvage campaigns (e.g., Curtis 1989; Altaweel 2007).

Nonetheless, a tentative model of the Assyrian landscape can be constructed, which suggests that the imperial core was carefully planned (Wilkinson *et al*. 2005; Ur in press). The capital cities were centrally designed, especially their palaces, temples, and city walls, with close involvement of the king himself (e.g. at Khorsabad; Parpola 1995), in a process that parallels developments in contemporary neighbouring city-states (Osborne 2014b). Assyrian kings described their new foundations and cosmopolitan populations in great detail (Oates 1968, 43–45; Wiseman 1952). The degree to which the urban fabric of the capital was planned remains uncertain (Ur 2013b), but evidence from provincial capitals suggests a high degree of planning and a largely elite population (Matney *et al*. 2011; Pucci 2008).

The kings also commissioned monumental canals and dams to redirect the natural surface waters of the hinterlands toward the capital cities (Bagg 2000; Ur 2005). Nimrud was served by a large canal from the Upper Zab river (Oates 1968, 45–49). Above Nineveh a series of increasingly ambitious canals were created during the reign of Sennacherib (Reade 1978; Reade 2000; Ur 2005), one of which included an aqueduct of nearly a half million stone blocks (Jacobsen & Lloyd 1935; Fales & del Fabbro 2012–2013). A subterranean channel extended 23 km to bring water to Erbil (Safar 1947). Canals were not limited to the imperial core; a large canal supplied the provincial capital at Tell Sheikh Hamad (Kühne 1990). Most scholars have assumed that these watercourses brought water to sustain elite parks and gardens and were not critical elements of the subsistence economy (e.g., Reade 1978). To the contrary, a reassessment based on satellite imagery (Ur 2005) reveals off-takes throughout the system, indicating that water was indeed being used for local irrigation at a distance from the capitals.

The beneficiaries of these irrigation waters are entirely unknown (although see now Morandi Bonacossi 2012–2013 and in this volume). The rural countryside of the Assyrian core has been, until recently, entirely unstudied. Low intensity reconnaissance has been undertaken by Iraqi archaeologists, but not published in detail (Ibrahim 1986; Mühl & Sulaiman 2011). The former Ba'athist government restricted survey, and indeed archaeology in general, in the Kurdistan Region, so it is necessary to look further afield for models of rural settlement. In eastern Syria, for example, a repeating pattern of evenly spaced small villages characterized the Neo-Assyrian landscape (Wilkinson 1995; Morandi Bonacossi 2000; Wilkinson & Barbanes 2000; Wilkinson *et al*. 2005; Ur 2010, 161–63). Neighbouring regions of southeastern Turkey show an identical pattern (Parker 2001; Algaze *et al*. 2012). When compared to the nucleated patterns of the Bronze Age, Neo-Assyrian settlements are remarkably dispersed, and often appear to be placed deliberately in the voids of the earlier pattern (Wilkinson *et al*. 2004; 2005 and in this volume).

The abundant historical record aids in the interpretation of this pattern. Neo-Assyrian kings had a well-documented policy of deporting the populations of conquered regions, resettling them elsewhere in the empire, and replacing them with other conquered populations. This policy was partially punitive, but more importantly, it brought agricultural labour into the imperial core, and for this reason, families and even entire communities were transported together (Oded 1979, 23–25. 67–74). Peoples were moved throughout the empire, but the most common destination was the core, and particularly the newly founded capitals (Oded 1979, 28–30). In the southern Levant, deportations have been documented convincingly in textual records and settlement patterns that show population decline and sometimes abandonment (Na'aman 1993; Na'aman & Zadok 2000). The dispersed settlement pattern on the fringes of the imperial core, described above, may be the other end of this process, as the kings imposed new settlements of deportees across the landscape. Forced population relocation represented a form of agricultural intensification, presumably to support the enormous populations of the new capitals. The

degree to which this situation pertains in the region immediately surrounding the capital cities has not, however, been previously investigated.

The final element of the landscape was ideological. Neo-Assyrian kings commissioned propagandistic rock reliefs, both within the imperial core (Bachmann 1927) and in conquered outer provinces and client states (Harmanşah 2007; Shafer 2007). Within Assyria, the reliefs appear in close connection with the canal systems (Reade 1978). For example, a massive carved relief above the canal head at Khinis shows the king Sennacherib before Aššur and his wife Mullissu, the national gods of Assyria (Jacobsen & Lloyd 1935, 44–49). On the smaller Faida canal, similar scenes of legitimation are found directly in association with off-takes (Reade 1978, 159–63). The juxtaposition of reliefs and water features was not coincidental: the relationship between the king, the gods, and the availability of life-giving waters would have been immediately apparent. On other features such as the Jerwan aqueduct and the head of the Bastora canal to Erbil, only monumental cuneiform inscriptions were left. These inscriptions would have been illegible to most, if not all, of the rural inhabitants, but the inscription itself would have impressed upon them the unknowable power of the Assyrian king (Machinist 1993,100–01).

Taking these landscape elements together, the landscape of the Assyrian imperial core appears to have been highly planned in all aspects. Royal cities were constructed as centres of political and religious power, economic might, and population concentration; the countryside was colonized for agricultural productivity via forced immigration; it was made to be fruitful via the redirection of the natural hydrology into tunnels and canals; and potent symbols of the divine legitimacy of the entire operation were strategically placed throughout. This landscape was planned and imposed by a series of kings over several centuries, and it strongly suggests the existence of an enduring royal ideology of landscape (Ur in press). This model is, however, based on a series of assumptions that draw together anecdotal observations, some going back to the 1840s, with other datasets that were collected far afield and only assumed to apply in the imperial core. Most significantly, data on the rural countryside are wholly nonexistent, despite the centrality of Mesopotamia for the disciplinary origins of archaeological survey (Ammerman 1981; Ur 2013c). The Erbil Plain Archaeological Survey is testing this hypothesis of a planned Assyrian imperial landscape, and each of its component elements, via an intensive, multi-season, multi-disciplinary archaeological field survey.

Research methods

These research objectives are now being approached via a stratified archaeological survey of a 3,200 km^2 region in the Erbil governorate of the Kurdistan Region of Iraq (Fig. 16.2). This area includes the capitals of two core provinces in the Neo-Assyrian empire, Arbail (modern Erbil) and Kilizu (modern Qasr Shemamok), and corresponds generally to their eponymous provinces (Radner 2006; Postgate 1995). A survey of this scale is necessary to address regional research questions, but presents particular challenges to traditional Near Eastern survey methodology. The remote sensing-guided methodology employed by EPAS enables an intensive approach to a large survey region in a limited number of field seasons (Ur *et al*. 2013).

The survey region.

Two zones comprise the survey region: an alluvial zone of 1,850 km^2 and a piedmont zone of 1,350 km^2. The first two seasons of fieldwork have focused on the alluvial zone. In adjacent regions, alluvial plains were apparently the loci of Assyrian settlement and landscape engineering. Furthermore, the project's hybrid remote sensing/field survey methodology is best suited for alluvial terrain. Elsewhere in northern Mesopotamia, piedmont areas were found to contain remains of Paleolithic resource extraction, recent pastoral nomadic traces, and little else; these sites require an intensive methodology (e.g., Ur & Hammer 2009), and will be a focus of a subsequent phase of the EPAS.

CORONA and ASTER remote sensing.

EPAS employs two forms of remote sensing analysis intensively. A full survey of the entire alluvial area via pedestrian methods would be prohibitive in time and costs. Fortunately, the alluvial area is highly amenable to site and feature recognition in CORONA and ASTER satellite imagery. It is geomorphologically similar to adjacent and previously surveyed alluvial regions of northwestern Iraq and northeastern Syria where these datasets have proven especially effective (Ur 2010; Menze *et al*. 2006; Menze & Ur 2012).

The United States' first intelligence satellite programme was code-named CORONA. Since declassification, it has become a successful tool for landscape archaeology in the Near East, especially in countries where foreign access to aerial photography is limited or forbidden (Challis 2007; Casana *et al*. 2012; Ur 2013a; Fowler 2013). Archaeological sites appear as light anomalies against dark alluvial soils, because decayed mud brick effectively sheds moisture (Wilkinson *et al*. 2006). Before fieldwork commenced, an assessment of

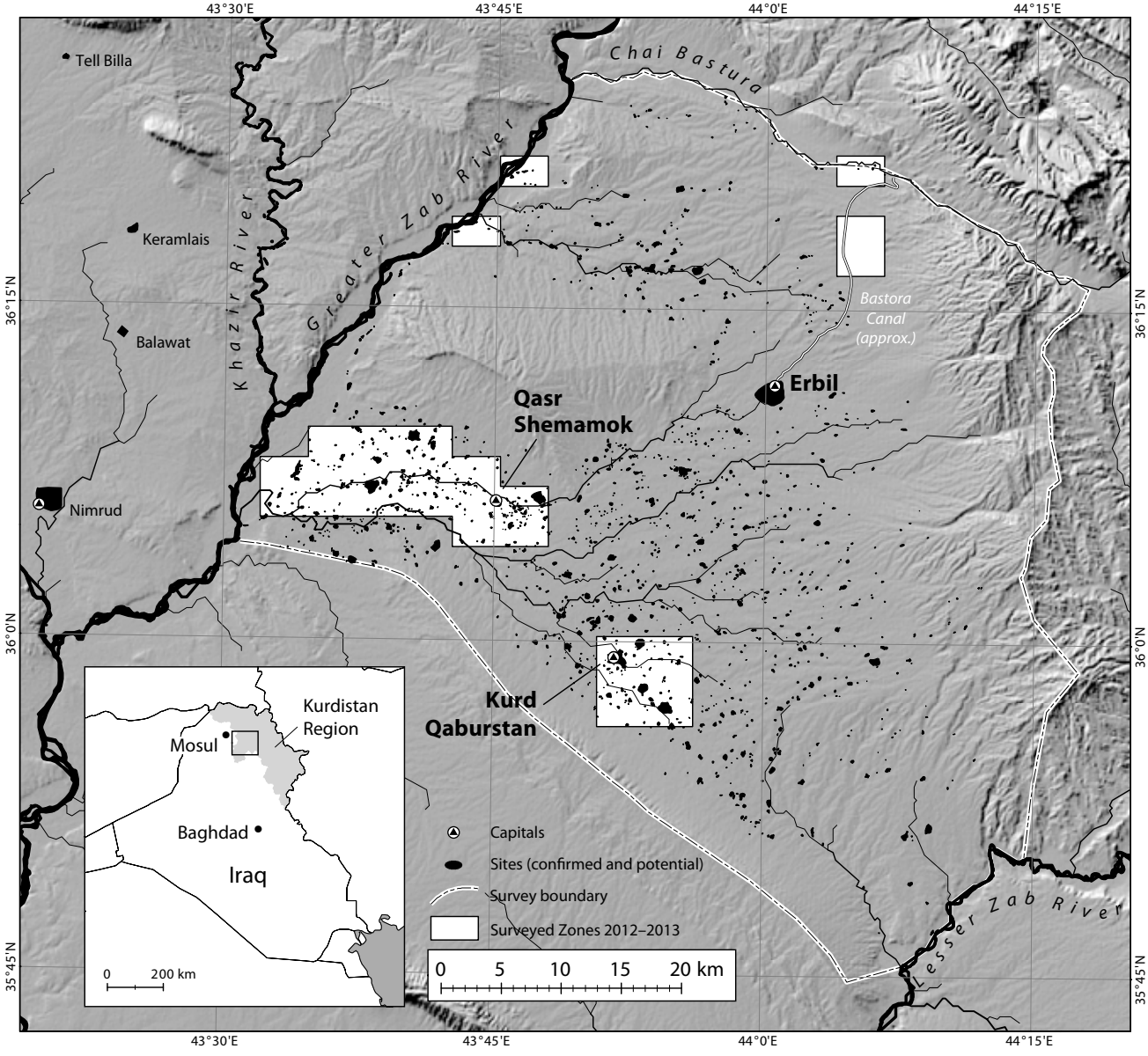

Figure 16.2. *EPAS project area, with known and CORONA-identified potential sites indicated. Inset: position of the project area in the Kurdistan Region of Iraq.*

the entire alluvial zone identified over 1,200 potential sites in the CORONA imagery, totalling 3,801 hectares of site area. Subjective visual identification of sites in CORONA will be complemented by a semi-automated analytical method based on multi-spectral ASTER satellite imagery, developed by Bjoern Menze (Menze *et al*. 2006; Menze & Ur 2012).

Site mapping and collection.
All potential sites are visited, described and mapped, and surface artifacts collected from sub-areas. Site boundaries are defined with reference to three properties: mounding, density of surface artifacts, and anthropogenic sediments. In most cases, these properties shift in tandem at the point where the site edge is defined: mounding decreases to plain level, artifact density declines substantially, and light and reflective anthropogenic sediments fade into darker natural alluvial soils (Ur 2010, 49–51; Wilkinson & Tucker 1995, 15–17). Site surfaces are divided into sub-areas generally of no more than 1 ha, and diagnostic and other significant artifacts collected. Sub-areas are defined based on differences in mounding, under the assumption that differential mounding at a site represents

differential settlement histories of its components that might be understood through discrete collection of artifacts. These collection areas are measured and recorded via mobile GIS software (ArcPad 10).

The sites themselves are mapped in most cases by corresponding satellite imagery with simple GPS measurements on a Trimble GeoXH GPS-enabled mobile computer. A particularly important component of this recording is the descriptive, photographic, and topographical recording of site damage and potential threats from construction and agriculture.

Collections analysis.
Collections are analysed with reference to a typology of robust and chronologically sensitive types that has been created and expanded explicitly for use in northern Mesopotamian field survey (Wilkinson & Tucker 1995; Ball *et al*. 1989; revised and expanded in Ur 2010 appendix B). As landscape exploration in Erbil Governorate is increasingly accompanied by archaeological excavation (e.g., van Soldt *et al*. 2013; Kopanias *et al*. 2013; Rouault & Masetti-Rouault in press), this typology will be continuously modified to reflect region-specific chronological indicators. Within each collection area, the presence or absence of ancient settlement of any given time period is assessed based on a ratio of diagnostic sherds per hectare. In this manner, expansion and contraction of settlement at any given site can be estimated, and cumulative settled area of the entire survey region can be traced through time.

Settlement landscapes of the Middle Bronze Age through Iron Age (*c*. 2000–600 BC)

In two seasons, EPAS has mapped, collected, and analysed 214 archaeological sites on the Erbil plain. Five of these sites (Erbil, Qasr Shemamok, Qalinj Agha, Kilik Mishik, and Tell Nader) have been long known and even excavated; the other 209 sites had not previously been studied in any formal sense, although several are listed in the *Atlas of Archaeological Sites in Iraq* (Directorate General of Antiquities 1979).

The project has made non-systematic visits to the fringes of the project area on the Chai Bastora and Upper Zab terraces, but most of the work has been concentrated to the south and southwest of the plain, in the districts (*nahiya*s) of Shemamok and Gwer. The density of premodern settlement in this rich alluvial plain is extraordinarily high. In the 60 km^2 zone including Tell Baqrta, Tell Surezha, and Kurd Qaburstan, the project recovered 27 sites for a density of 0.45 sites/km^2. In the western part of the project area, between the Upper Zab and Qasr Shemamok, 169 sites were recovered in a zone of 160 km^2, a density of 1.06 sites/km^2. However, many potential sites in both regions have yet to be investigated; if our CORONA-based site identification method's success rate thus far (73 per cent) is applied to these unexamined sites, we can anticipate site densities of 1.62 sites/km^2 in the southern zone and 1.36 sites/km^2 in the southwestern zone. These densities reveal the Erbil Plain to be the densest archaeological landscape yet documented by field survey in Greater Mesopotamia (see discussion in Ur *et al*. 2013).

In the following discussion, we consider only the lower Siwasor and Kurdara valleys, where 160 km^2 of continuous landscape has been surveyed by the project in 2012–2013.

Middle Bronze Age settlement.
In the early second millennium, Erbil and its plain was part of the kingdom of Qabra, a historically attested town known largely on account of its siege and destruction at the hands of the combined armies of Šamši-Adad and Dadusha (Ismail & Cavigneaux 2003; Miglus 2003; MacGinnis 2013). Qabra is likely to be located at Kurd Qaburstan (EPAS Site 31), a walled city of approximately 100 ha located south of Erbil (see Ur *et al*. 2013).

In the lower Siwasor valley, however, MBA settlement is light and rural (Fig. 16.3A). Seventeen settlements account for only 49.5 hectares of settled area, an average of just under 3 ha per site. The largest site is an extensive but low density settlement at Site 33, slightly larger than 10 hectares. Gamesh Tepe, on the Upper Zab terrace, was slightly more than 7 hectares. All settlements adhered closely to the edges of river terraces; the interfluvial areas appear to have been completely unoccupied.

In terms of site density, MBA settlement in this region (0.11 sites/km^2) is comparable to other regions of northern Mesopotamia such as Apum (Tell Leilan region), which had 0.10 sites/km^2, and Šubartum (Hamoukar and Tell al-Hawa regions), which had 0.09 sites/km^2 (Ur 2010, 159–60).

Late Bronze Age settlement.
Historical chronologies for the Late Bronze Age recognize a phase of Mitanni suzerainty followed by a time of Assyrian control (the Middle Assyrian period). The survey typology cannot distinguish between these political phases, and indeed we strongly suspect that pottery traditions were (and are) completely indifferent to the shifts in royal households that are a traditional subject of historical reconstructions. There are a few earlier and later LBA types (e.g., Nuzi ware), but in aggregate they do not occur frequently enough

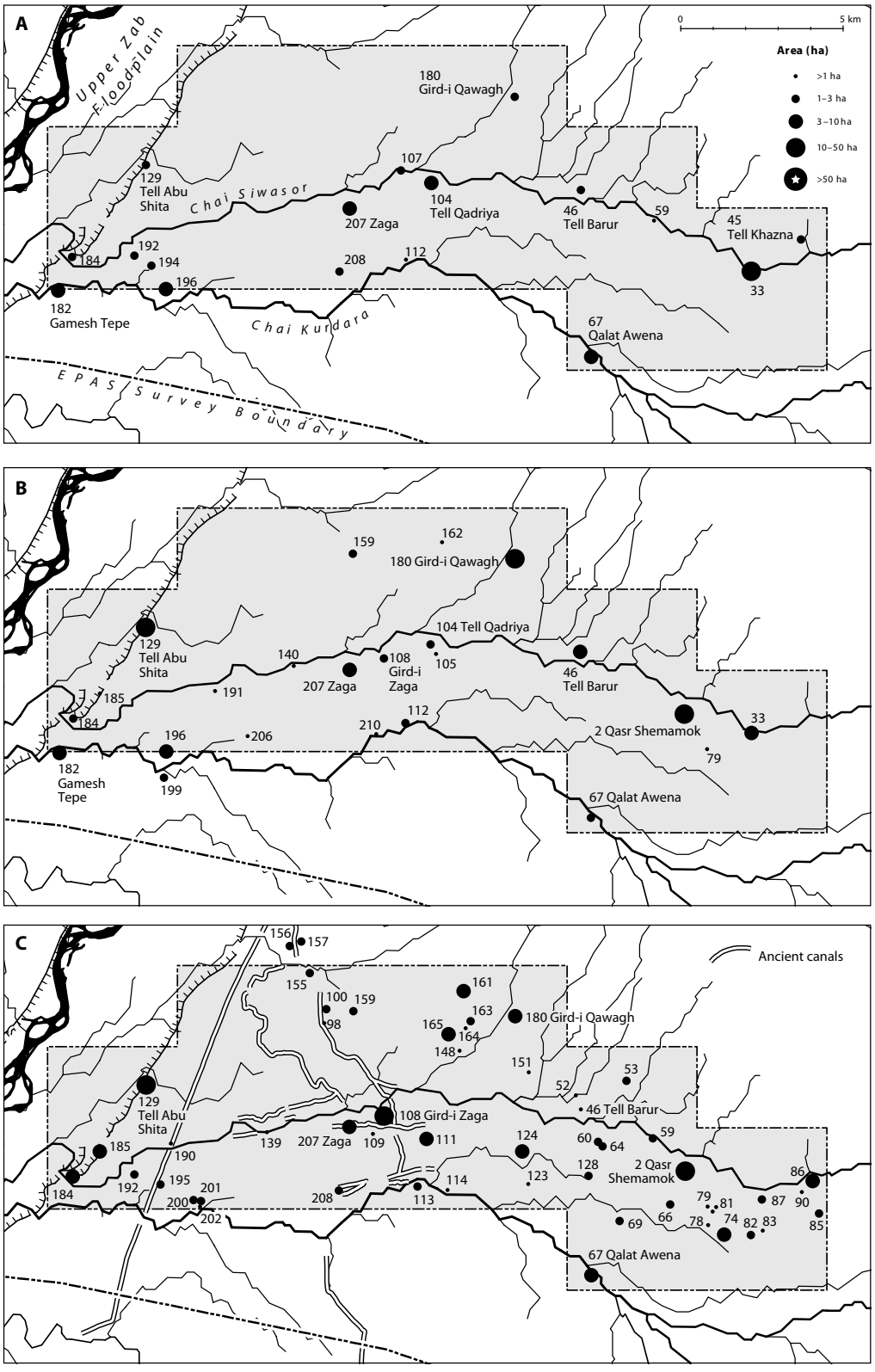

Figure 16.3. *Settlement on the lower Chai Siwasor and Chai Kurdara. Gray area surveyed in 2012–2013. A. Middle Bronze Age settlement (Period 8,* c. *2000–1500* BC*). B. Late Bronze Age settlement (Period 10,* c. *1500–1200* BC*). C. Iron Age/Neo-Assyrian settlement (Period 11,* c. *900–600* BC*).*

to describe robust patterns of settlement in surface assemblages.

Settlement expanded in numbers and area from the Middle Bronze Age (Fig. 16.3B). Most significantly, a 50 hectare urban settlement appeared at Qasr Shemamok, ancient Kilizu and an important capital of a core Assyrian province (Postgate 1995; Radner 2006; Rouault & Masetti-Rouault in press and elsewhere in this volume). If one disregards Kilizu, however, the expansion was relatively slight: six new settlements for a total of 23, and an average site size of 3.5 ha. Eleven of these sites had been occupied in the MBA; the rest were new settlements.

Settlement continued to cling to perennial surface water sources, but a few settlements appeared in the interfluvial zone. Most were relatively small (e.g., Sites 79, 159, and 162), but one ten-hectare town (Site 180, Gird-i Qawagh) developed along a small tributary wadi of the Siwasor.

Iron Age/Neo-Assyrian settlement.

In the early first millennium BC, settlement area and numbers expanded sharply (Fig. 16.3C). Thirty new sites appeared, a growth rate of 125 per cent from the LBA. Total settled area grew to 189.6 hectares, 50 hectares of which was in the walled provincial capital at Kilizu. The growth rate in terms of settled hectares was only 75 per cent, and the average site area was only 2.63 hectares (excluding Qasr Shemamok from the calculations). Thus settlement expansion largely took the form of new small settlements, rather than the expansion of preexisting LBA villages into towns.

The geographical distribution of Iron Age/Neo-Assyrian sites also represents a shift. The largest settlements (e.g., Qasr Shemamok/Kilizu) remained close to rivers, but the interfluvial region and the region north of the Chai Siwasor were extensively occupied. Especially noteworthy is the dense rural landscape around Qasr Shemamok itself. Another small cluster developed around Site 180 (Gird-i Qawagh, where the survey recovered a fragmentary cuneiform tablet of Neo-Assyrian date). The lowest reaches of the Siwasor and Kurdara also had dense village settlement.

The lower Erbil Plain is crossed by several massive surface canals with surface widths up to 100 m across (Ur *et al*. 2013). It is not yet possible to date any of these features directly, but several large features have close associations with Neo-Assyrian sites. A large open canal (3 m deep, 90 m wide between the tops of the spoil banks) brought water into the area of Sites 156 and 157; the source of this canal's water is a diversion from the Upper Zab river upstream (see Ur *et al*. 2013). Another large canal extracted water from the Chai Siwasor near Site 108 (Gird-i Zaga) and moved it across the plain to the north. At its northern end, it is associated with a cluster of Neo-Assyrian sites (Sites 98, 100, 155, and 159). Before flowing into the wadi near Site 155, the canal terminates in a 7 m deep 200 m wide excavated basin. Other canals, however, are less likely to be tied to the Neo-Assyrian occupation of the plain. The large linear canal that runs through Sites 190 and 195 bears morphological similarities to Sasanian and early Islamic canals elsewhere in Iraq, and it seems to disregard the Erbil plain altogether.

Conclusions

The Erbil Plain hosts one of the richest archaeological landscapes yet documented in Iraq, and indeed in Greater Mesopotamia. To be sure, this situation stems in part from the region's relatively undeveloped present state and the powerful remote sensing and GIS tools now being employed to study it. These tools were not available to the researchers who conducted the famous archaeological surveys in southern Mesopotamia, where increased site density figures are likely to appear as landscape research is renewed there. To a greater degree, however, the density of settlement is due to the incredibly rich history of the plain itself: the Erbil Plain attracted sedentary settlement at an early date and, for a variety of historical and environmental reasons, has maintained a long history of urban settlement up to the present (Ur *et al*. 2013).

At this preliminary stage, the hypothesis of a planned rural settlement in the Assyrian core region appears to be supported. The number of settlements expanded, but the total area of settlement did not – a pattern that is the signature of a growing rural population. The fact that the average site size of Neo-Assyrian rural sites is relatively stable between regions (see Table 16.1) confirms that this part of the empire did indeed participate in the process of ruralization documented elsewhere. Furthermore, it would seem that the heartland of the empire underwent a greater rural demographic transformation than surrounding areas. Table 16.1 illustrates this phenomenon, comparing the results of EPAS in the Lower Siwasor area of the plain with results found by surveys in neighbouring regions. At 0.34 sites/km^2 this portion of the Erbil Plain is almost twice as densely settled during the early first millennium as the area with the second greatest site frequency (the hinterlands of Hamoukar). It is also significant that the choice of settlement location changed from the Bronze Age; the interfluvial zones and marginal wadis were extensively occupied for the first time.

Table 16.1. *Neo-Assyrian settlement in four intensely surveyed regions of northern Mesopotamia (based on Wilkinson* et al. *2004 Table 14.2, Ur 2010 Table 6.10). The total area of the Tell Beydar Survey excludes a 136 km² basalt plateau with thin soils that was largely unsurveyed. The average size for Neo-Assyrian sites in the EPAS Lower Siwasor zone excludes 50 ha Qasr Shemamok.*

			Iron Age/Neo-Assyrian			
Survey	**Area (km²)**	**Total Sites**	**Sites**	**Sites/km²**	**Area (ha)**	**Average Size (ha)**
North Jazira Project	475	184	78	0.16	123.00	1.58
Tell Beydar Survey	316	82	35	0.11	97.00	2.77
Tell Hamoukar Survey	125	60	22	0.18	70.59	3.21
EPAS Lower Siwasor Zone	160	167	53	0.34	189.60	2.63

This cumulative evidence suggests that the picture painted by contemporary historical texts – one in which populations deported from conquered areas were primarily settled in the hinterland of the capital cities of the empire – is largely correct. Though the sample size is relatively small at present, results from the EPAS survey support the notion of a strongly centralized settlement pattern that saw formerly marginal areas colonized with evenly spaced rural settlements that would have greatly increased total agricultural production capacity. This scenario corresponds to what one would expect to see archaeologically from the descriptions of the forced migrations and deportations offered by the Assyrian rulers. Likewise, though dating off-site features remains problematic, it appears that this settlement expansion was accompanied by the installation of a massive irrigation infrastructure that could only have originated with a powerful central political entity.

Although these early results are significant, there remains much work to be done. In the immediate term the most important next step will be the continued areal coverage of survey in the Erbil Plain for the development of a more robust dataset. More long term work includes refining the ceramic chronologies spanning the late second and early first millennia, which will enable further correlation between settlement pattern change and historical developments from the Middle Assyrian to Neo-Assyrian empires, situate our findings into a more refined evolutionary trajectory, and possibly extend the settlement pattern trends we have described here back in time by several centuries.

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