



McDONALD INSTITUTE MONOGRAPHS

The provincial archaeology of the Assyrian empire

Edited by John MacGinnis, Dirk Wicke and Tina Greenfield





*Excavation of the administrative complex in the lower town of Ziyaret Tepe
(Courtesy Ziyaret Tepe Archaeological Project).*



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Assisted by Adam Stone



ZIYARET TEPE ARCHAEOLOGICAL TRUST

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(photograph by Tuğrul Çakar, courtesy British Institute at Ankara).

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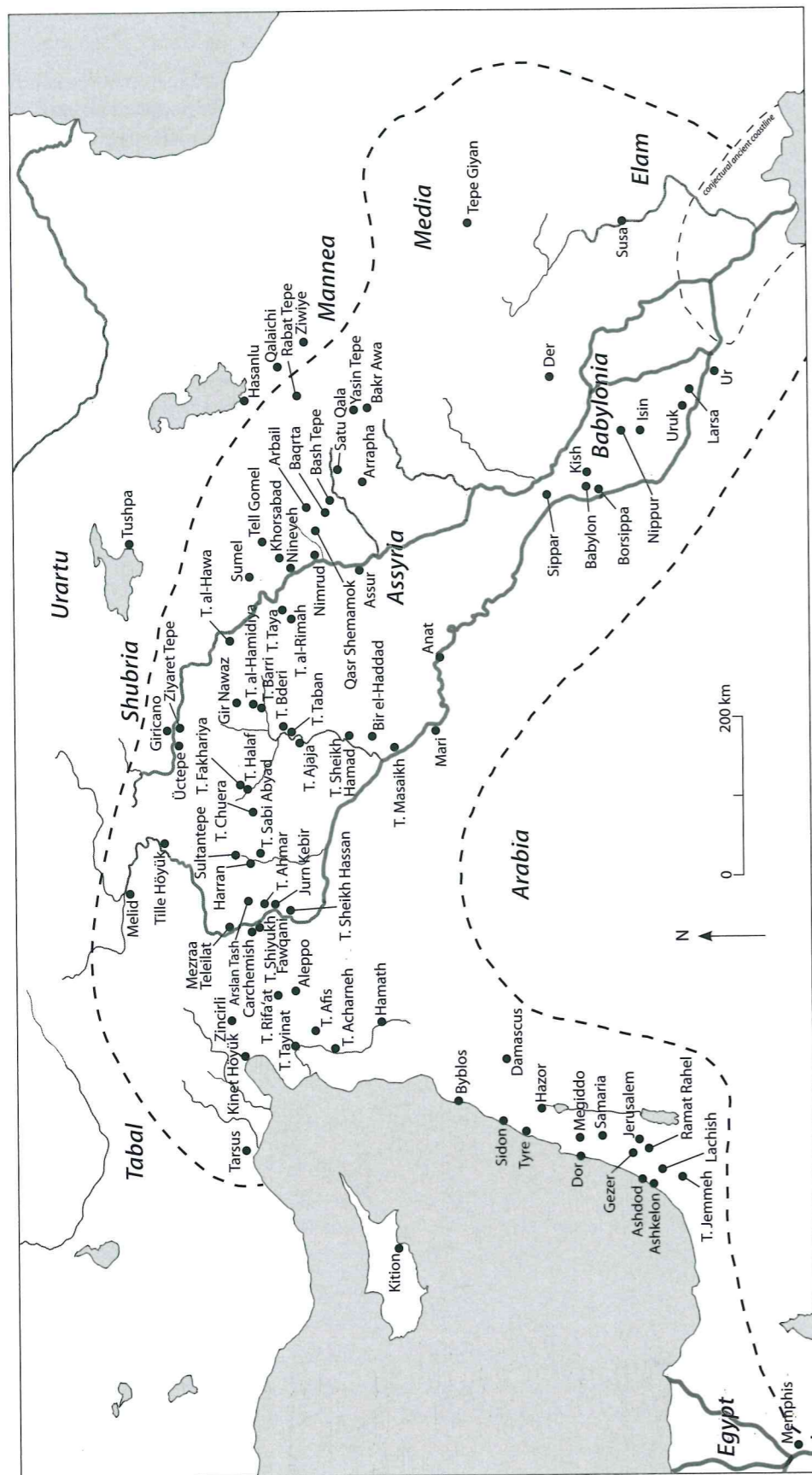
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The Assyrian empire, with major sites of the Middle and Neo-Assyrian periods marked. The dashed line gives an indication of the maximum territory which came under Assyrian control both as provinces and vassal states.

Preface

The rediscovery of Assyria, the uncovering of her remains and the decipherment of her writings, is one of the triumphs of archaeology. It spans the full history of the discipline, from the early origins through to the satellite age. We are indeed now approaching the two hundredth anniversary of when, in 1820, Claudius Rich first measured the walls of Nineveh, an event which might be said to mark the inauguration of the archaeological exploration of Assyria in the modern age, and some of the central cities of Assyria have been the target of protracted investigation for over a century and a half. In the outlying regions, too, certain sites attracted attention from early on and numerous provincial Assyrian sites were the target of excavations in the course of the last century. By the closing decades of the twentieth century, however, this had grown into something more than sporadic probings, with a burgeoning of major field projects investigating a range of sites across the span of greater Assyria. In part this was influenced by political events in the region and also in response to the threat posed by the construction of hydro-electric dams. Be that as it may, these researches have culminated in the emergence of the study of the provinces of the Assyrian empire as a distinct school within Mesopotamian archaeology.

Recognizing these developments, the McDonald Institute for Archaeological Research determined to host an international conference under the title *The Provincial Archaeology of the Assyrian Empire*. For three days, 13–15 December 2012, directors and delegates of major field projects from across the territory once covered by the empire were invited to come together with the intention of offering a platform for sharing new results, new insights and new approaches within the research community. In the event, this goal was achieved resoundingly, with scholars travelling from across the United Kingdom, Europe, the Middle East and North America, and together representing key endeavours exploring the archaeological imprint of Assyria in present-day Israel, Iran, Iraq, Syria and Turkey.¹

The present volume is an outcome of these interactions and includes not only frontline contributions from the field, but also wide-ranging philological-

historical research, studies of specific material corpora and analyses of environmental datasets. The layout of the volume reflects the thematic and geographical organization of the conference itself. An introductory section reviews both the history of the archaeological exploration of the Assyrian provinces and the history of the birth and growth of Assyriology and near eastern archaeology at Cambridge. The next part examines the dynamics at the heart of the imperial enterprise: changes in administrative and economic structures, literacy and para-literate technologies, environmental impact and provisioning strategies, urban growth and rural landscape. This in turn leads on to studies devoted to material culture, taking on a range of phenomena – the famous black and white pebble mosaic pavements, ‘palace ware’, glazed ceramics, a previously unrecognized category of stamp-seals – whose coherence and distribution are a characteristic feature of the lands under the yoke of Assyria and indeed help to define it. Next we move on to regional studies, primarily focusing on the periphery, though the core is not excluded. Lastly we turn our attention to the final years of the empire and the post-Assyrian world.²

The foundation of this work is the excavations at myriad provincial sites, the local and regional surveys in which they are set, the material and ecofactual datasets which they have generated, and the analysis of textual data. Certain themes – deportation, hybridization, economic impact – appear again and again. But the way in which they are handled continues to change and develop. This is emblematic of the diversity of approaches and evolving research agendas which define the archaeological exploration of the provinces of Assyria. Together they help formulate a response to the questions at the core of investigating the imperial phenomenon: How was this vast territory governed? Who populated it, and how did this change under the impact of Assyrian imperialism? What were the models of exploitation? How were these people fed? In addressing these questions we come to a new appreciation for the diversity of local responses to Assyrian expansion and a new appreciation of how the continuity of local power structures in some regions and the deportation or destruction of

the ruling elites in others generated a material track whose traces can be documented and recognized in the archaeological record.

The conference was made possible through a generous grant from the Wenner-Gren Foundation together with support from the D M McDonald Fund, the Assyrian Foundation of America and the Ziyaret Tepe Archaeological Trust, and it is a great pleasure to record the personal support and encouragement of Prof. David Stronach and Dr. Eden Naby. To Michele Anderson and Edward Few we owe an immense debt for managing the logistics. The publication of this volume was supported by grants from the University of Cambridge Vice Chancellor's Endowment Fund, the Johns Fund, the Robert Kiln Charitable Trust and the Charlotte Bonham-Carter Charitable Trust. We would also like to record our enormous debt and gratitude to Simon Stoddart for his support and guidance, and to

Ben Plumridge for his meticulous typesetting, laying out and production of the volume. We would like to express our deepest thanks to all these organizations for their generous support and to all the participants who made this such an exceptional event.

Notes

- 1 We are deeply sorry that our dear colleagues Tony Wilkinson, a pioneer of modern near eastern archaeology, and Dora Kemp, who played such a large part in the life of the McDonald Institute, are no longer with us: we miss them greatly.
- 2 Regarding terminology, in this volume the term Neo-Assyrian covers the whole period of the Assyrian empire in the first millennium; the term Late Assyrian is generally avoided except for when referring to the very end of Assyrian rule. With respect to Ashur, we follow the convention of writing Aššur for the god and Assur for the city.

Chapter 14

The Land of Nineveh Archaeological Project. Assyrian settlement in the Nineveh hinterland: a view from the centre

Daniele Morandi Bonacossi

During the late eighth and seventh centuries BC the region straddling today's Northern Iraqi provinces of Dohuk and Ninawa was the political and geographical centre of the Assyrian empire. Although the great Neo-Assyrian capital cities have already been the subject of intensive excavations and study (see, most recently, Pedde 2012), very little is known about the hinterlands of Dur-Sharrukin and Nineveh and the patterns of settlement and use of resources (especially water and soils) in a region which was strategic for the subsistence of the Assyrian capitals. The survey of the 'Land behind Nineveh' is the first systematic and interdisciplinary regional exploration to be conducted in the immediate hinterland of the last two Assyrian capitals (Fig. 14.1), and promises important scientific results for the reconstruction of the occupation and exploitation of this core region of Assyria, thus integrating the data available so far only from neighbouring regions located mainly in the Western Assyrian homeland and along its northern frontier (Morandi Bonacossi 1996a and 2000; Wilkinson & Barbanes 2000; Wilkinson *et al.* 2005; Parker 2001; Matney 2010; Ur *et al.* 2013).

The 'Land of Nineveh Archaeological Project': goals, methods and key issues

The 'Land of Nineveh Archaeological Project' (LoNAP), initiated in 2012 by the Italian Archaeological Mission to Assyria of the University of Udine, aims to reconstruct the formation and transformation of the cultural and natural landscapes of this central region of Northern Mesopotamia and to provide for their protection and management in innovative ways.

The research is based on a regional archaeological field survey, combined with the archaeological excavation of the site of Tell Gomel which will begin in a second stage of the project, and a geo- and bio-archaeological reconstruction of the ancient natural

landscape and its evolution as a result of global climatic fluctuations and human impact. Landscape is consequently understood as a dynamic space that is at once physical, social and mental, shaped not just by ecological, demographic and economic processes, but also by their interaction with social and cultural dynamics, as well as with the human perception of the changing cultural and natural environment.¹

The region studied by the project encompasses more than 2900 km² and consists of the area delimited by the plain of Dohuk and the Northern Iraqi foothills to the north, the lake formed by the Eski Mosul Dam to the west, the plain extending to the Jebel Maqloub and the Bardarash region to the south and the River Al-Khazir to the east (Fig. 14.2). This region, which has never been the object of systematic and interdisciplinary exploration, with the only notable exception of the rescue excavations conducted in the Upper Iraqi Tigris Valley between 1981 and 1986 during the construction of the Eski Mosul Dam,² has played a key role in the cultural dynamics that have affected Northern Mesopotamia from prehistoric times until the Islamic ages and was crossed by the important overland trade route linking the Iranian plateau with the Upper Tigris, the Habur and Euphrates Valleys and the Northern Levant. The Iraqi Upper Tigris Basin also played a strategic role in commercial and military transit, since it controlled access to the highland regions rich in resources (obsidian, copper, timber and also horses during the Iron Age) of the Turkish Upper Tigris and connected them to the core area of Mesopotamian Civilization.

Emphasis in the first LoNAP survey campaign was placed on the rolling plains located to the east of Lake Eski Mosul at the southern foot of the Jebel Zawa (Ger-e-pan Plain) and the Jebel Al-Qosh hills (plains of Faideh, Al-Qosh, Ba'adreh and 'Ain Sifni/Sheikhan) and on the vast Bardarash alluvial plain which is crossed by the River Al-Khazir, a western

tributary of the Upper Zab, and its western feeders (Gomel and Nardush).

The first fieldwalking campaign was preceded by the analysis and interpretation of the available cartographic material³ and remotely sensed images.⁴ As a result of this preliminary work, 204 possible archaeological sites were identified. Most of these potential sites recognized through the analysis of maps and remotely sensed imagery were examined in the field and only a limited number were discarded as false positives.

The survey has so far led to the identification on the ground of 239 archaeological sites. Only 31 of them (13 per cent) had not been identified through remote sensing analysis. Among these 239 sites, 148 have yielded surface pottery and/or lithic assemblages and can be classified as habitation sites.

The vast size of the study area included in the LoNAP led us to adopt a mixed survey strategy, based on motor vehicle survey combined with pedestrian fieldwalking. Off-site field survey by means of transect walking will be conducted in future survey campaigns. However, many low-mounded sites⁵ could already be spotted with astonishing precision through remote sensing due to the presence of anthrosols which were clearly visible in the satellite imagery (Menze & Ur 2012).

Even though the overall occupation picture in the region covered by the 2012 survey campaign is still preliminary and incomplete, the extensive coverage that was achieved during this first research season suggests that a significant bias in the reconstructed settlement hierarchy of the region may exist mainly towards its lower end, and that some small-sized settlements may have escaped prior detection. This is the case in particular for sites scattered in the rolling plains in the foothill piedmont belt, where the identification of archaeological sites through remotely sensed images is difficult.

As for the determination of the occupation periods attested to in the surveyed sites, the LoNAP, the Upper Greater Zab Archaeological Reconnaissance led by Rafał Koliński and the Erbil Plain Archaeological Survey directed by Jason Ur have agreed upon the use of a common ceramic typology that was worked out by Wilkinson and Tucker within the framework of the Iraqi 'North Jazira Project' (1995) and later integrated by Ur. The goal of this joint dating procedure is to obtain homogeneous and thus fully comparable dating for the sites from the three surveys, which encompass a vast region of Northeastern Mesopotamia between the Tigris and the Lower Zab.

The piedmont plain regions of the LoNAP are extensively cultivated with cereals (mainly barley) in

a dry-farming system based on a mean annual rainfall between 450 and 600 mm per year, which drops to 300–450 mm in drought years (Buringh 1960; Guest 1966, figs. 5–6; Wirth 1962, Abb. 9–10). The study area exhibits diverse physiographic and hydrographical characteristics. The Dohuk, Ger-e-pan, Faideh and Al-Qosh plains are crossed only by wadis and are watered by only a few significant permanent watercourses flowing westwards into the Tigris (the Rubar Dohuk and the Wadi Bandawaiyah). The region between Ba'adreh and Bardarash, on the contrary, is crossed by a dense network of permanent watercourses (River Al-Khazir and its tributaries) whose rate of flow is greatly increased during the wet season.

The combination of fertile soils and water is certainly one of the main reasons why most of the known archaeological sites are concentrated in the larger Dohuk and Bardarash plains, where the larger sites are also located (Fig. 14.2).⁶ Obviously site distribution is strongly affected by hydrography. Most of the sites are distributed in linear fashion along wadis and watercourses or along lines of karst springs. The highlands at the very foot of the Northern Iraqi hills seem to be more sparsely settled, though it is important to bear in mind that the strongly undulating plains of this area do hamper the detection of archaeological sites from satellite images and aerial photographs. In general, however, extensive and diffuse 'tell landscapes' are concentrated mainly in the Dohuk and Bardarash piedmont plains.

Noteworthy also is the size of archaeological mounds in the region. During the Late Chalcolithic and the Bronze and Iron Ages, but also during the Classical, Late Antique and Islamic periods, the 'Land behind Nineveh' seems not to have been a region of widespread and substantial urbanization. Nearly all sites are comprised in the range between less than a hectare and 4–5 ha, definitely non-urban sizes, even though of course surface indications alone are not a reliable guide. Only three sites are significantly larger: Ger-e-pan in the western piedmont plain to the south of Dohuk (15 ha), Jerahiyah in the Ba'adreh piedmont plain (10 ha), and Tell Gomel in the Bardarash alluvial plain (16 ha). None of them, however, belongs to the class of the 'giant' tells which are known from the adjacent Iraqi and Syrian Jezirah and, in the late Early Bronze Age, reach sizes ranging from 60 to 100 and more hectares.⁷

Satellite imagery analysis also aimed at the identification of hollow ways in the 'Land behind Nineveh'. These broad and shallow linear anomalies, found in particular in the Syrian and Iraqi Jezirah and successfully interpreted as ancient roadways (Altaweel 2008; Danzig in press; Ur 2003; Wilkinson 1993), radiate nearly always from the three main sites mentioned above and a few others, such as Tell

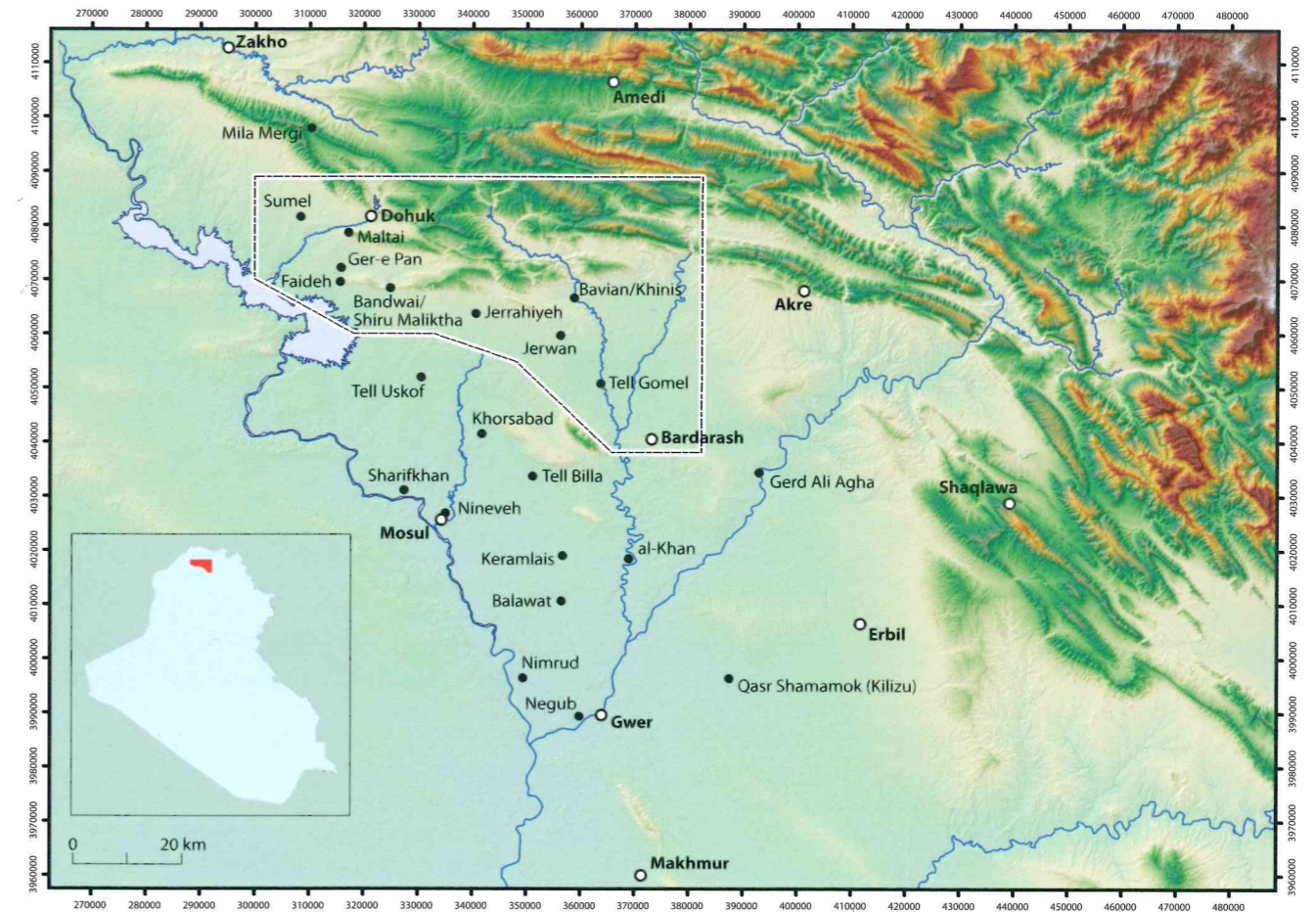


Figure 14.1. Location of the Land of Nineveh Archaeological Project (LoNAP) survey area in Northern Iraq and the core territory of the Assyrian empire with major sites.

Sumel,⁸ Shekha and especially Mahad (with its area of 8 ha), suggesting their importance and centrality in the settlement and road network of the region.

The preliminary results of the LoNAP seem thus to suggest that between the fourth millennium BC and the Islamic period the Zagros piedmont area to the east of the Upper Iraqi Tigris Valley was not home to widespread and significant urbanization comparable to that found in the neighbouring regions to the west ('North Jazira Project' area, Wilkinson & Tucker 1995) and also southeast. Large-scale mounds have also been recorded in the on-going survey of the Erbil Plain (Ur *et al.* 2013).

As for the Neo-Assyrian period, the lack of extensive urbanization in our region could easily be associated with the rural settlement pattern characteristic of the period and the proximity of the area to the capitals of Khorsabad and Nineveh: the region to the east of the Upper Iraqi Tigris corresponds to the rural hinterland of these great Assyrian metropolises of the

eighth and seventh centuries BC. Less clear, however, is the existence of this trend in the late fourth, third and second millennia BC. In these cases too, however, the vicinity of our research area to Nineveh might have been partly responsible for the lack of competing urban centres in the region immediately to the north of the city. Nineveh was already an important and probably large city during the final part of the Late Chalcolithic in the Uruk period, when its area might have approached the almost 45 ha of Qyunjiq (Algaze 1986; Stronach 1994), and later during the Akkadian and Old Assyrian periods as a centre of worship of Ishtar (Beckman 1996; Campbell Thompson & Mallowan 1932 and 1933; Vieyra 1957, 83–102 and 130–38). The weak urbanism characterizing the LoNAP region might be related also to the rather isolated position of the Transtigridian piedmont belt in the very north of the Assyrian core area and the absence of major trade routes crossing the region.

The apparent lack of widespread urbanism in the hinterland of Nineveh is a matter which definitely

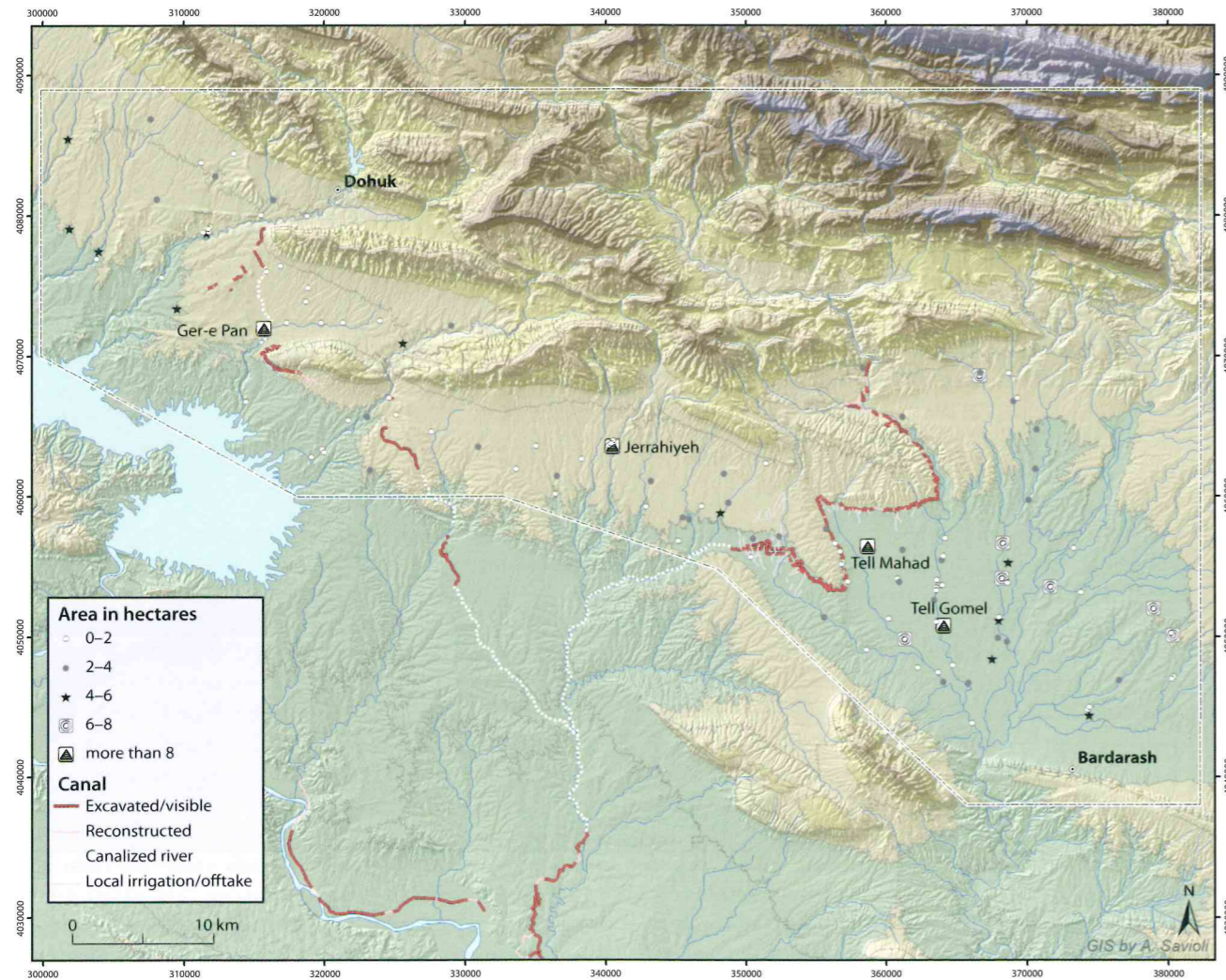


Figure 14.2. Preliminary reconstruction of the size classes of settlements discovered in the 2012 survey campaign, and Neo-Assyrian canals in the Nineveh hinterland.

requires a closer consideration than is possible after only one survey campaign, since it seems to outline the emergence in Northern Mesopotamia of diverse urban trajectories and cultural processes, which may be strongly differentiated even among neighbouring regions that are intensively urbanized – or, on the contrary, show a mighty rural base and absence of large urban centres.

Settlement and land use in the 'Land of Nineveh' during the Assyrian period

The results of the first survey campaign allow a first provisional reconstruction of the patterns of settlement, land use and management within the region during the Assyrian period (second-first half of the first millennium BC), especially regarding its key

assets: water and agricultural soils (Fig. 14.3). The Middle Bronze Age in the region is marked by the diffuse presence of sites with Habur ceramics (68 settlements), followed by a decrease during the Mitannian period and a growth in settlement number in the Middle Assyrian period, when sites rise considerably.

In the 'North Jazira Project' area and in the Syrian Jezirah the density of occupied Middle Assyrian sites remained considerably lower (Anastasio 2007; Morandi Bonacossi 1996a; Wilkinson & Tucker 1995), indicating a phase of lesser demographic growth in these areas which were located far from the Middle Assyrian core region. The proximity of our research area to the Assyrian capital at Assur and – especially – to Nineveh, already an important centre of the Ishtar cult in the Middle Assyrian period, may account for this settlement development.⁹

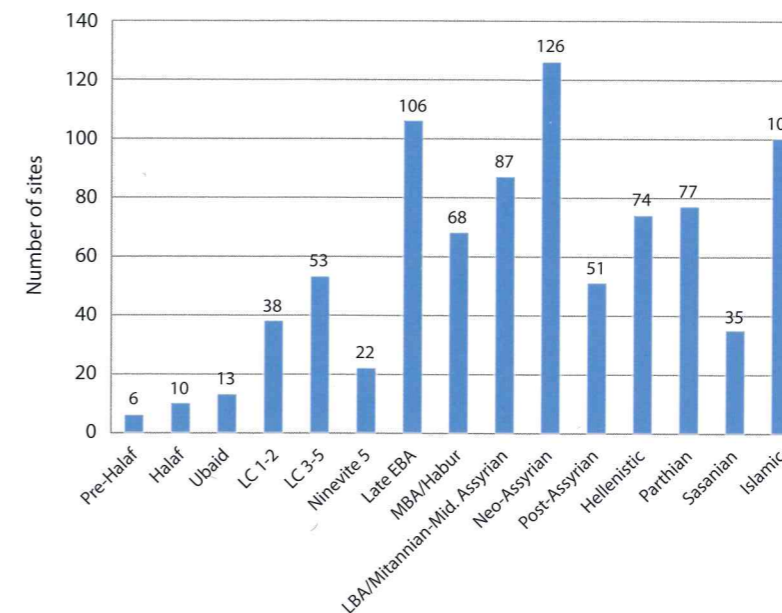


Figure 14.3. Preliminary histogram of settlements discovered in the 2012 LoNAP field campaign.

However, the absolute peak in regional occupation was reached during the Neo-Assyrian epoch, when the settlement numbers recorded for the Middle Assyrian phase increased further, reaching a total of 126 settled sites. Nearly every settlement with surface ceramic assemblages was occupied in this period. At a closer look, however, the first millennium settlement landscape seems not to replace an older occupation pattern, but rather to represent the intensification of a landscape and settlement distribution which had been basically established during the Bronze Age.

The typology of sites recorded so far is varied and ranges from a few large, high-mounded localities to low-mounded sites, single-phase sites with almost no topographic relief and scatters of pottery. The entire 'Land behind Nineveh' was literally dotted with Neo-Assyrian sites, often linearly arrayed along wadis, perennial streams, lines of karst springs, and especially along the canals belonging to Sennacherib's famous irrigation system, which represents an important technological infrastructure that certainly had a strong impact on soils and agricultural productivity in the region (Bachmann 1927; Bagg 2000; Jacobsen & Lloyd 1935; Oates 1968; Reade 1978 and 2002; Ur 2005).

As is well known, Sennacherib relocated the centre of his empire from Dur-Sharrukin to the city of Nineveh, building a capital whose size (750 ha compared with the previous 200 ha) and splendour were to astonish the civilized world (Stronach 1994). Over 400,000 people are mentioned as deportees in Sennacherib's inscriptions (Oded 1979, 20–21, 28) and their most common destination was the core territory of Assyria and its capital city. At the same time the Assyrian king built a great network of main and sec-

ondary canals, earthworks, weirs, dams, sluices and aqueducts in the foothill region north of Nineveh to regulate the waters of the mountain streams and rivers of the piedmont region, to prevent recurrent flooding of the urban area of the capital and supply with water its royal parks and fields (Fig. 14.2).

The site distribution reconstructed shows that the settlement pattern based upon small, dispersed sites scattered in the Assyrian countryside already established for the Syrian and Iraqi Jezirah characterized also the core region of the Nineveh countryside (Anastasio 2007; Morandi Bonacossi 1996a–b and 2000; Ur 2010, 112–14 and in press; Wilkinson & Barbanes 2000; Wilkinson & Tucker 1995; Wilkinson *et al.* 2005). Furthermore, the existence of a dispersed occupation pattern based upon numerous small villages, hamlets and perhaps farmsteads suggests that Nineveh's hinterland was densely settled and cultivated and that Sennacherib's complex hydraulic system was aimed not only at supplying the capital and its royal gardens with water, as the king himself boasted in the Bavian inscriptions (Bagg 2000, 212–14), but also to irrigate Nineveh's countryside in order to increase yield and reduce dry-farming risk across the piedmont belt of northern Assyria (see also Ur 2005). The identification in satellite images and in the field of local offtakes derived from this irrigation system further supports this reconstruction.

Water for Nineveh and its countryside: Sennacherib's regional irrigation system

As is well known, the massive state-created irrigation system built by Sennacherib's engineers in the

'Land behind Nineveh' was linked to commemorative reliefs of great importance carved on rock surfaces in locations which were in close geographic, functional and symbolic association with the hydraulic system itself. Through these rock reliefs depicting the king worshipping the main Assyrian gods, such as the famous reliefs of Maltai, Faideh, Shiru Maliktha and Khinis (Al-Amin 1948; Bachmann 1927; Bär 2006; Boehmer 1975 and 1997; Kreppner 2002; Oates 1968; Ornan 2007; Reade 1978 and 2002; Shukri 1954), the Assyrian kings appropriated the landscape and marked it, thus legitimizing their power through the creation of monuments of landscape commemoration (Harmanşah 2013, 93–101).

Sennacherib's Nineveh canals and their commemorative rock reliefs have been studied to date through cuneiform sources (Bagg 2000), organized or more casual explorations on the ground (Bachmann 1927; Boehmer 1997; Jacobsen and Lloyd 1935; Oates 1968; Reade 1978 and 2002) and a recent, seminal survey based upon remote-sensing data sources, but without field confirmation (Ur 2005). For the first time in recent decades, in 2012 the Italian Archaeological Mission to Assyria's LoNAP had the possibility to launch a comprehensive investigation of Sennacherib's hydraulic system on the ground, with the aim of recording, protecting and managing this outstanding complex of canals, aqueducts and monumental rock reliefs and creating an archaeological and natural park founded upon the conservation and public fruition of these important sites, and the preparation of a candidacy proposal for the inclusion of the Assyrian canal system and the entire cultural landscape linked to it in the UNESCO World Heritage List.

Three stretches of Sennacherib's hydraulic system have been surveyed and mapped on the ground so far: one section belongs to the Faideh canal, which is part of the so-called Northern System (Oates 1968, 49–52; Reade 1978, 157–68; Ur 2005, 325–35), and two to the Khinis System (Bagg 2000, 212–14; Ur 2005, 335–39).

The survey of the Faideh canal along the Jebel Al-Qosh's flanks led to the identification on the ground of several canal tracts in the area of the canal head, which probably originated from a series of karst springs, that appear as approximately circular depressions in the ground and are located in a small wadi along the northern flank of the Jebel Al-Qosh (see also Reade 1978, 159). When we visited these springs in August, at the peak of the Iraqi summer, they were full of water.

The canal, which is hewn into the rock and square in cross-section, has an average width of approximately 4 m. Along the Jebel Al-Qosh's northern flank the canal is almost everywhere buried under colluvial deposits; its bed is visible only in a

few stretches where erosion has been particularly active. Where the canal reaches the modern village of Faideh and turns south to round the western spur of the Jebel Al-Qosh, a series of rectangular panels with rock-reliefs were discovered. These had been carved into the stone in which the canal itself was cut. Three of them were discovered by Julian Reade in the early 1970s (Reade 1973, 203–04; 1978, 159–63) and were subsequently visited in 1978 by Boehmer, who observed more reliefs which were, however, described only very summarily (1997, 248–49).

The new survey of the Italian Archaeological Mission to Assyria has so far ascertained the existence of nine visible panels sculptured with reliefs, although it cannot be excluded that other reliefs may have been fully covered by slope debris eroded from the side of Jebel Al-Qosh. Only the upper parts of the panel frames emerge from the colluvial deposits (Fig. 14.4), with the crowns and heads of the deities depicted in profile facing left (and thus pointing in the direction in which the channel's current flowed). As far as it is possible to establish without excavation, the subjects represented in the Faideh reliefs look very similar to those shown in the four rock-panels of Maltai, even though their execution is perhaps coarser. As already observed by Boehmer (1975, 56–57), the Maltai panels (and perhaps also those of Faideh) did not portray an Assyrian king in the presence of a procession of deities, but rather a scene of royal worship of the statues of the seven main deities of the Assyrian pantheon standing on their symbolic animals.

The archaeological monuments that exist at Faideh – which include a c. 6 km long canal cut into the rock with offtakes and stone walls built in the wadis intersecting the canal (probably in order to protect it from flash-floods) and a series of sculptured panels – constitute an extraordinary and absolutely unique group of commemorative monuments, which need to be appropriately protected, conserved and managed, especially since they are greatly endangered by a series of productive facilities of the nearby village of Faideh (cement plants, agricultural cultivation and a large poultry farm).

Two stretches of the Khinis canal between the canal head and the Jerwan aqueduct have also been investigated on the ground (Fig. 14.2).

South of Khinis, the 'Canal of Sennacherib' follows for kilometres the margin between the outcropping bedrock and the alluvial plain, exploiting the rock texture and the easy workability of the conglomerates and limestone, and passes a series of deeply incised wadis of various widths and with different catchment areas that intersect its course. A few kilometres to the south of the Khinis canal head, the survey detected a



Figure 14.4. One of the rock reliefs along the Faideh canal. Note the left-facing crowns and heads of six Assyrian gods.

previously unknown stretch of the canal, 7 m wide and about 2 m deep, cut into the conglomerates of the Upper Bakhtiari formation.

Further south, three wadis had been bridged by the construction of stone aqueducts, which were built of the same material as the Jerwan aqueduct (limestone blocks – sometimes rusticated – quarried at Khinis), with similar structure and technique (Jacobsen & Lloyd 1935). This exceptional discovery shows that the famous Jerwan aqueduct was not a unique and isolated construction, as has long been thought, but that wherever it was necessary to bridge wadis and ravines the Assyrian engineers built stone aqueducts.

Unfortunately all the newly discovered aqueducts have been destroyed by wadi erosion and remain visible only in the wadi sides. Of the inside of the aqueduct built over the Wadi Dar Basta (Fig. 14.5) may be seen 6 to 8 courses of blocks, a paved floor constructed with the same limestone slabs used at Jerwan and identical parapets.

A fourth aqueduct has been discovered to the south of Jerwan, near the village of Mahmudan. Regrettably, this aqueduct was entirely destroyed by the mechanical excavation of a well and its blocks

were recovered and reused in buildings in the nearby villages. The total number of aqueducts known so far along Sennacherib's canal thus amounts to five, and it cannot be excluded that others have yet to be discovered.

Conclusions

In its first survey campaign, the LoNAP has revealed the existence of an important new area of settlement in the heart of the Assyrian empire, with immense archaeological potential, and has outlined a preliminary reconstruction of the work of landscape engineering and careful planning of settlement and regional productivity to which the Assyrian kings devoted themselves in the hinterland of the last imperial capitals of Khorsabad and Nineveh.

The abundant new data regarding occupation, the use of agricultural land and water resources, the system of regional channels and aqueducts – and the extensive programme of commemorative rock reliefs associated with them – reveals the huge investment in terms of labour, technology, organization and logistics infrastructure made by the Assyrian empire in the



Figure 14.5. The newly discovered Assyrian aqueduct on the Wadi Dar Basta (from the west).

countryside of Khorsabad and Nineveh during the late eighth and seventh centuries BC, and the tremendous impact that the huge and complex building and settlement programme of the first Sargonid kings had on the hinterland of these cities from a productive and political perspective.

Future campaigns of field research will intensify the archaeological survey of the Assyrian settlement system and its relationship with the surrounding landscape. The reconstruction of the archaeology of the Assyrian landscape will also be anchored to the more solid viewpoint offered by the archaeological excavation of the important site of Tell Gomel which, with its

essentially continuous occupation sequence ranging from the Late Chalcolithic to the Ottoman period, will provide the basis for establishing the crucial, well stratified and dated material culture sequences that are still lacking in the region.

The beginning of a new, wide-ranging interdisciplinary research project in the 'Land behind Nineveh', favoured by the democratic, economic and civil recovery of Iraq, makes it possible for the first time to shift the focus of archaeological research from the enormous Assyrian capitals to their territory, from the metropolitan elites to the lowest levels of society in the centre of the Assyrian empire, and in particular

to reconstruct the signature left on the imperial landscape of Khorsabad and Nineveh, both natural and cultural, by the activity of the first Sargonid kings.

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Notes

- 1 On this issue, see most recently Van Dyke and Alcock 2003 and Harmansah 2013.
- 2 *Researches on the Antiquities of Saddam Dam Basin Salvage and Other Researches* (Directorate General of Antiquities Baghdad, 1987).
- 3 Including the *Atlas of Archaeological Sites in Iraq* (Directorate General of Antiquities, Baghdad, 1979).
- 4 CORONA, Landsat, and OrbView-3 satellite imagery and a set of air photographs taken in 1955 by Hunting

Aerial and now in the possession of the British Institute for the Study of Iraq (BISI).

- 5 Even small sites of less than 1 ha and with an elevation of only 1–2 m.
- 6 The vast and well-watered plain of Bardarash contains two of the four largest centres in the region (> 8 ha: Tell Gomel and Mahad) and all seven settlements of area 6–8 ha.
- 7 Good examples are the urban centres of Al-Hawa, Tell Taya and Tell Khoshi in the Iraqi Jezirah and the sites of Tell Hamoukar, Tell Leilan, Tell Brak, Tell Mozan, Tell Beydar and Tell Chuera in the Syrian Jezirah (cf. Ur 2010, 152, tab. 8.1. and fig. 8.2.).
- 8 Here a Neo-Assyrian palace with baked bricks bearing inscriptions of Shalmaneser III has been recently partially excavated by Dr. Hassan Ahmad Qasim, Director of Antiquities of Dohuk (Hassan Qasim, personal communication).
- 9 Remarkable in this context is the quite high concentration of Middle Assyrian sites in the adjoining region of Cizre-Silopi, and in the valley of the Turkish Tigris and its tributaries (Algaze, Hammer and Parker 2012).

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