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## The Morphology of Neo-Assyrian Cities

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# The Morphology of Neo-Assyrian Cities

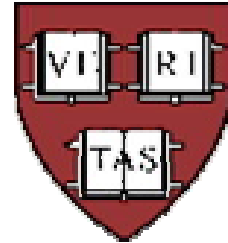
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To be submitted to the journal *Subartu*.  
Manuscript date 1 June 2012. Introduction

There is a great irony in the study of Neo-Assyrian urbanism. The great capital cities of Nimrud, Nineveh, and Khorsabad were the first to receive the attention of what we might call professional archaeologists. In the following century and a half, these and other great Assyrian cities have continued to be investigated by generations of now-legendary scholars (Larsen 1996). Initially this was a colonial undertaking, but in the latter twentieth century, Iraqis became active in writing their own history, and when they did so, they too singled out the great Assyrian capitals and are responsible for some of the most spectacular finds of recent decades (Hussein and Suleiman 2000).

Despite this long and distinguished history of scholarship, we know remarkably little about Assyrian cities, especially the imperial capitals. The reason for this situation stems from the nature of the investigations. The excavators' concerns revolved almost entirely around the apex of the political hierarchy: the kings and their immediate institutions. In this, they were all remarkably successful. Entire volumes can be written about palaces, their decorative programs, temples, and the matters of concern to the individuals that inhabited them (e.g., Russell 1991). The attitude of early excavators to the non-elite parts of the towns is

typified by this passage by American archaeologists at Khorsabad:

Three campaigns in the town have accordingly now been completed, and, while we do not claim to have 'exhausted' the site by any means, we do believe that further digging would only produce results incommensurate with their cost in contributing to our knowledge of this period. The city is approximately a mile square and was in all probability solidly built, for wherever soundings have been made walls have appeared. But so complete was the removal of possessions or so thorough the pillaging at the time of abandonment that there remains practically nothing in the line of inscriptions or utensils whereby the buildings can be identified. Literally miles of walls forming groups of meaningless rooms are neither very gratifying nor very instructive. From the several buildings already cleared completely or in part, we have learned all that we believe can be obtained from Khorsabad in the way of architectural principles. General methods of construction and decoration and 'typical' plans of individual buildings we know from the palaces and the citadel buildings. To find in usually barren rooms stray objects of historical or artistic merit would be like searching for the proverbial needle in the haystack (Loud and Altman 1938:3).

The goals of archaeology have evolved in



recent decades, and we are no longer concerned as exclusively with kings and their courts. Archaeologists have become social historians, with new concerns for how the actions of king and commoners alike came together to form Assyrian society. It is at this point that we realize just how little we really know. The enormous dataset on Assyrian cities derives almost entirely from the investigation of the spaces and creations of the king. In most cases, it is impossible to say anything about the lives of the other residents, in some cases even *whether there were* other residents.

In writing more holistic histories of these places, archaeologists and epigraphers have attempted to fill in these remarkable gaps with evidence from other times and places. Underlying such attempts is the common assumption that there was a single durable model for Mesopotamian urbanism. This study adopts a different approach. Rather than assuming the existence of a single model for Assyrian urbanism, it will emphasize variability among cities. This approach stems from an ongoing study of cities in Mesopotamia by the author that stresses the creative interplay between top-down forces in the form of centralized planning, and bottom-up forces in the form of social action at the level of individuals, lineages, and neighborhoods. If we put these two directions at opposite ends of a continuum, existing scholarship would place Assyrian cities rather far toward the imposed end (Ur in press-b). My approach aims to check this assessment, not just for Assyrian urbanism in general, but for individual cities.

#### **Methods and Datasets**

The primary dataset here will be the great imperial capitals of the Assyrian heartland (see most recently Pedde 2012, Kühne 2011). Most are to be found on the terraces immediately adjacent to the Tigris River (Figure 1). I will also consider two important provincial capitals east of the Tigris: Erbil and Qasr Shemamok. I will also refer to other provincial capitals, which have been excavated by teams whose focus has been on holistic aspects of Assyrian

urbanism; the research projects at these provincial capitals, especially Sheikh Hamad and Ziyaret Tepe, will be driving future research in the imperial core.

A holistic approach can benefit from remote sensing, and in particular intelligence photographs collected by the United States government in the 1960s under the CORONA program, which was declassified in 1995 (Fowler 2002). These images can resolve objects of two meters on the ground, and are comparable to high resolution commercial satellite imagery. More significant than resolution, however, is age. In the 1960's many Near Eastern landscapes had yet to experience the effects of modernization and development: for instance the great dam projects and state-planned irrigation systems, or the expansion of towns and cities. In this sense, CORONA scenes give us a window into a past landscape that no longer exists. These scenes have been employed with great success on the landscapes of ancient Assyria (Ur 2005, in press-a, Altaweel 2003, 2008, Scardozzi 2011).

Frequently, any individual satellite image many not reveal any new information about urban structure. In these cases, sometimes the problem is not with the age of the scenes, but rather the time of year. Archaeological features are made visible via differences in soil moisture or vegetation, and late spring or summer landscapes are extremely dry. As an example, we can compare two scenes of Nimrud. The first was acquired in August 1968, at the height of the dry season (Figure 2A). The second was acquired in February 1967, in the wettest part of the year (Figure 2B). The summer scene only reveals details of the excavated areas on the citadel and Fort Shalmaneser, and some parts of the city wall. The winter scene, on the other hand, reveals the urban entire fabric of the Assyrian city, and quite a bit about its hinterland as well (discussed in detail below). Remote sensing datasets are heavily dependent on ground conditions, so the optimal strategy will examine multiple scenes from different seasons

and years.

CORONA imagery requires interpretation. Under similar environmental conditions in western and northeastern Syria, light areas are anthropogenic soils, and more specifically, they are areas of decayed and eroded mud brick architecture (Wilkinson et al. 2006, Menze and Ur 2012, Ur 2010:50-51). Dark areas are spots where water is being retained or where vegetation grows more abundantly- often these are depressed areas. Linear dark features, both intramural and extramural, can often be interpreted as streets or tracks (Ur 2003). These signatures will be used to interpret CORONA images of several Assyrian cities below.

### ***Monumental Planned Urban Elements***

We can begin by considering location. From its ancestral roots at Ashur, the Assyrian capital was moved and refounded several times. In no case, however, was it an entirely new foundation. The planners always chose pre-existing towns or sites. At Nineveh, for example, the ancient mound at Kuyunjik stands out sharply. Even at Khorsabad, the citadel palaces were probably placed atop a small pre-existing mound. This pattern repeats at every major Assyrian city (Figure 3). It is impossible to know precisely the decision-making processes of the kings and planners, but they were constrained by the need for a pre-existing mound.

The great city walls were a source of pride for the kings. The walls of Sennacherib's Nineveh were 25 m thick and extended for 12 kilometers. They held at least fifteen gates, and may have been as high as thirty meters (Stronach 1995, Scott and MacGinnis 1990). We have particularly strong insight into royal involvement in the creation of capital cities in the case of Sargon's construction of Khorsabad (Parpola 1995). For example, a letter to Sargon from his Treasurer gives some insight into the construction process at Khorsabad. The treasurer had to resolve a dispute between governors regarding work allocations. Individual provincial governors were

responsible for the construction of lengths of walls in the new capital city (Parpola 1995:64-65).

In general, the walls of new cities were highly linear. In addition to the walls of Nimrud and Khorsabad, Balawat and Tell Sheikh Hamad were also very geometric. In other cases, curving walls can be attributed to topography. At Nineveh, for example, the walls conformed to the Tigris River on the west, and the river terrace to the east. Other curving walls are more difficult to explain in planning terms. The ovoid shape of Erbil, for example, cannot be explained by its natural terrain (Nováček 2011). The same could be said of the walls of Ziyaret Tepe and Qasr Shemamok (Figure 4). In these cases, it appears that planners were recognizing *existing* urban realities, and then formalizing them with walls.

### ***The Urban Fabric: The Example of Nimrud***

Once one moves beyond these monumental urban elements to consider the rest of the urban fabric, one is faced with a dramatic lack of evidence. Several research projects had begun to explore non-elite parts of several cities but were cut short by the first Gulf War. One such project was at Nineveh, where a Berkeley team led by David Stronach undertook excavations in the northern Lower Town and began general surface collections (Stronach 1994, 1995, Stronach and Lumsden 1992, Lumsden 2000). The area immediately north of Kuyunjik was elevated with dense housing. This was the lower town prior to Sennacherib. The area north of it had evidence for industry. The northern corner of the lower town, near the Halahhu Gate, had a very light surface artifact scatter; this part of the site might have been open space for gardens or pasture. The Berkeley team also reconstructed some street alignments (Stronach and Lumsden 1992).

A similarly holistic research project was begun in 1987 at Nimrud by an Italian mission under the direction of the late Paolo Fiorina of the University of Turin, and was also cut short

by the first Gulf War. Fiorina attempted to reconstruct the use of space in Nimrud's lower town, mostly based on his interpretation of its topography (Fiorina in press). He found considerable open space; one particularly large area at the northeastern base of the citadel was devoid of surface ceramics and was interpreted as the locus of the botanical and zoological gardens mentioned in Ashurnasirpal's banquet stele. Fiorina also reconstructed the internal street network as arteries that ran straight through the town, from city wall gates to known or proposed citadel gates, and they also followed the city walls. Fiorina's reconstruction, via surface artifacts and topography, represents the first and most extensive attempt to envision the structure of an Assyrian city. It contains some surprises—for instance, the positioning of textually-known parks and gardens within the city, and the overall frequency of open space.

This research can be extended and corrected using remote sensing data which were not available to the Turin project in the 1980s. The CORONA scene of 1967 does show broad dark linear features that probably were the main urban arteries (Figure 2B). Interestingly, they do not radiate outward from the citadel, but rather, they come together generally in an area 400 meters east of it (Figure 4). They appear straight, but not rigidly so; they do not intersect at right angles, nor do they run parallel to the city walls or any other visible feature. In the CORONA scene, it is not always clear how they articulate with each other. It is certain, however, that these streets were very wide. The two northern streets approach thirty meters in width. The main eastern street was variable, but at its narrowest, it was still almost fifteen meters wide. The southern street between the citadel and Fort Shalmaneser was consistently about nineteen meters wide. All of these measurements are probably underestimates, since building collapse will have eroded into the streets on both sides.

Within the city, there were many small open spaces that now appear as dark areas. A

particularly large area near the convergence of the streets was over 200 meters wide. A larger dark area at the eastern foot of the citadel covered five hectares; this area is a good candidate for Ashurnasirpal's botanical gardens.

Throughout the city, one can see alternating light and dark areas that probably represent residential blocks and intervening streets and plazas. The lower town covers 343.4 hectares, of which 185.4 hectares appears to have been built space (Figure 5, gray areas). This area represents only 54% of the area within the walls, excluding the citadel and Fort Shalmaneser. Although archaeologists generally assume a constant density of occupation within ancient settlements, the distribution of light soils (anthrosols) throughout the lower town is highly variable. In the center of the town, anthrosols cover roughly 50% of the area. There are several areas of particularly dense lower town settlement: the northwestern corner (89% built), the middle of the southern lower town (81% built), and the eastern central town (67% to 71% built). In each of these areas, anthrosols represent 70% or more of the total area. One might interpret these areas as especially old neighborhoods of Nimrud, where a few centuries of settlement have resulted in especially dense urban fabric of houses and narrow streets.

Conversely, there are several areas of apparently low density. Light soils are infrequent immediately east of the citadel; this area is possibly the location of Ashurnasirpal's botanical gardens (see above). Another low density area is to be found west of Fort Shalmaneser, and is likely to have been staging or parade grounds for the army. Other areas are more difficult to explain. Sixty hectares of lower town just inside its northeastern corner appear to have low density settlement, with isolated structures and intervening open space; a similar pattern occurs north of Fort Shalmaneser against the eastern wall. These spaces may have been low-density elite neighborhoods, or may have had non-

residential uses, for example gardens or animal penning.

Elsewhere, similar signatures appear. For example, the interior of Balawat has an identical pattern of dark and light (Figure 6A). This pattern does not, however, appear at Khorsabad (Figure 6B), which might suggest that its interior was never fully settled prior to Sargon's death and the relocation of the capital to Nineveh.

### ***Urban Hinterlands***

CORONA scenes also show how movement continued out into the countryside. At Nimrud, for example, a set of three tracks converged at a spot along the northern city wall, where they would connect with one of the northern intramural arteries. We can assume that this was the position of the main northern gate. Another set of three features converge on the northeastern corner of the lower town, although no city gate has been recognized at this point. The eastern intramural street appears not to articulate with a gate, although further ground research may reveal one.

With our understanding of the signature of built areas as described above, it is also possible to investigate the question of extramural settlement. At Nimrud, for example, an area to the northwest might encompass as much as 30 additional hectares of settlement. A similar area east of the city might cover fifteen hectares. Without ground control, it is not possible to tell if these areas of settlement were contemporary, of course.

Some ground control is available for Qasr Shemamok, however. With the kind invitation of Olivier Rouault and Maria Grazia Masetti-Rouault, I was able to observe a small area around the site in October 2011. I walked almost 45 kilometers around the site, and confirmed at least 90 hectares of settled area, in 34 distinct "places of interest," or sites. Although no artifacts were collected, these sites appear to range from the early 3rd millennium to the late Ottoman period. Of particular interest was the high percentage of Assyrian ceramics on the fields beyond the city wall,

especially along the Siwasor Chai. These sherds were predominantly Middle Assyrian, which raises the possibility that settlement at Shemamok might have been reduced and nucleated in the 1st millennium BC.

Assyrian cities did not exist in isolation, but it is very difficult to discuss the Assyrian rural countryside in its Tigridian heartland at our present state of knowledge. Surveys on the western edge of Assyria, however, have revealed some patterning that suggests centralized planning of rural demography (Wilkinson et al. 2005, Morandi Bonacossi 2000, Ur in press-b). For example, around Hamoukar and Tell al-Hawa, the Early Bronze Age was a time of urbanization. By the Neo-Assyrian period, however, cities were gone, and the landscape had been completely filled with dispersed rural settlement (Figure 7). It is tempting to attribute this striking pattern to the deliberate actions of the Assyrian kings, who uprooted captured populations and forcibly brought them back to Assyria (Oded 1979).

The Assyrian landscape was also highly engineered in terms of hydrology. All capitals were served by enormous canal systems created by the state. Best known are Ashurnasirpal's Zab canal to Nimrud, and the many canals created by Sennacherib above Nineveh (Ur 2005, in press-b, Altaweel 2008, Kühne 2012). The degree to which these systems were exploited by the rural residents remains an open question, but when considered aside the evidence for deliberate settlement colonization of captured populations by the Assyrian state, it appears that the rural hinterlands of the great capital cities were carefully planned and transformed by the state, both in terms of their physical properties and their human communities (Ur in press-b).

### ***Assyrian Urbanism: Some Preliminary Conclusions***

This review has been necessarily brief, but the case study of Nimrud does allow for some preliminary conclusions that should serve as the basis for further testing, particularly once fieldwork resumes in earnest in northern Iraq.

Neo-Assyrian cities were highly variable in their structure. Some elements were clearly planned centrally: palace and temple districts, and some urban frameworks. In many cases, however, urban elements took their form via processes that were planned locally, perhaps by individuals, but more likely at the neighborhood level; the emerging patterning at Nimrud appears to fall into this latter case. Sometimes, imperial planners had to recognize these emergent forms by formalizing them via paving and walling, which is likely to have been the case at Ziyaret and Shemamok. Outside the city walls, our present picture appears to show an unambiguously engineered landscape of settlements and canals, but this picture desperately needs empirical verification.

These are important issues for how we understand the nature of Neo-Assyrian society. At present, the common narrative features a single agent: the king. This brief review has, I hope, demonstrated that there is room for other actors in the creation and evolution of Assyrian cities.

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### Figures

**Figure 1.** Topography of Assyria, with major Assyrian cities indicated.

**Figure 2.** CORONA satellite photographs of Nimrud. A. 16 August 1968; B. 28 February 1967.

**Figure 3.** Profiles through three Assyrian capitals. A. Nineveh; B. Nimrud; C. Khorsabad. The thick line represents the profile within the city walls. All profiles are vertically exaggerated.

**Figure 4.** Curved city walls in Assyrian provincial capitals. A. Ziyaret Tepe, ancient Tushhan (CORONA 1102-1025DA, 11 December 1967). B. Qasr Shemamok, ancient Kilizu (CORONA 1039-2088DA037, 28 February 1967). Both figures to same scale.

**Figure 5.** Distribution of built area and open space at Nimrud, based on the interpretation of satellite photographs (see Figure 2B). For each 500 x 500 m grid square, the percentage of anthropogenic soils (built area, shown in gray) is indicated.

**Figure 6.** Anthropogenic soils at Balawat (A) and Khorsabad (B). CORONA mission 1039, acquired 28 February 1967. Note that these two scenes are not at the same scale.

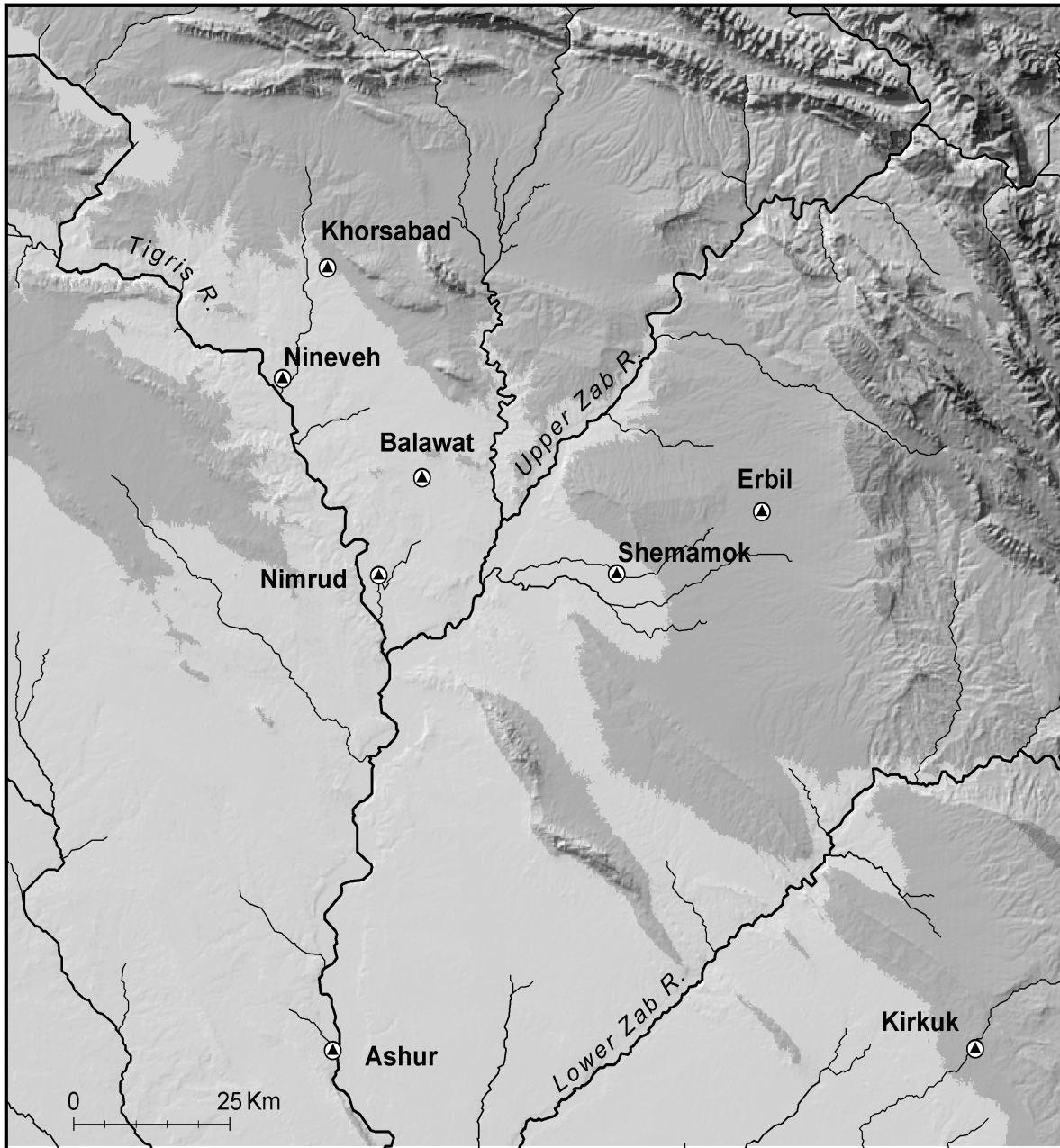
**Figure 7.** The evolution from nucleated to dispersed settlement in the Hamoukar and North Jazira Project areas (based on Ur 2010, Wilkinson and Tucker 1995). A. Urban settlement and trackways in the later EBA, ca. 2600-2000 BC; B. Rural settlement in the Neo-Assyrian period (with Thiessen polygons to illustrate hypothetical settlement catchments).

### Bibliography

- Altaweel, Mark. 2003. The Roads of Ashur and Nineveh. *Akkadica* 124:221-228.
- . 2008. *The Imperial Landscape of Ashur: Settlement and Land Use in the Assyrian Heartland*. Heidelberg: Heidelberg Oriental Verlag.
- Fiorina, Paolo. in press. La città bassa di Nimrud: Testimonianze topografiche e cronologiche. *Mesopotamia*.
- Fowler, Martin J.F. 2002. Satellite Remote Sensing and Archaeology: A Comparative Study of Satellite Imagery of the Environs of Figsbury Ring, Wiltshire. *Archaeological Prospection* 9:55-69.
- Hussein, Muzahem Mahmud, and Amer Suleiman. 2000. *Nimrud: A City of Golden Treasures*.

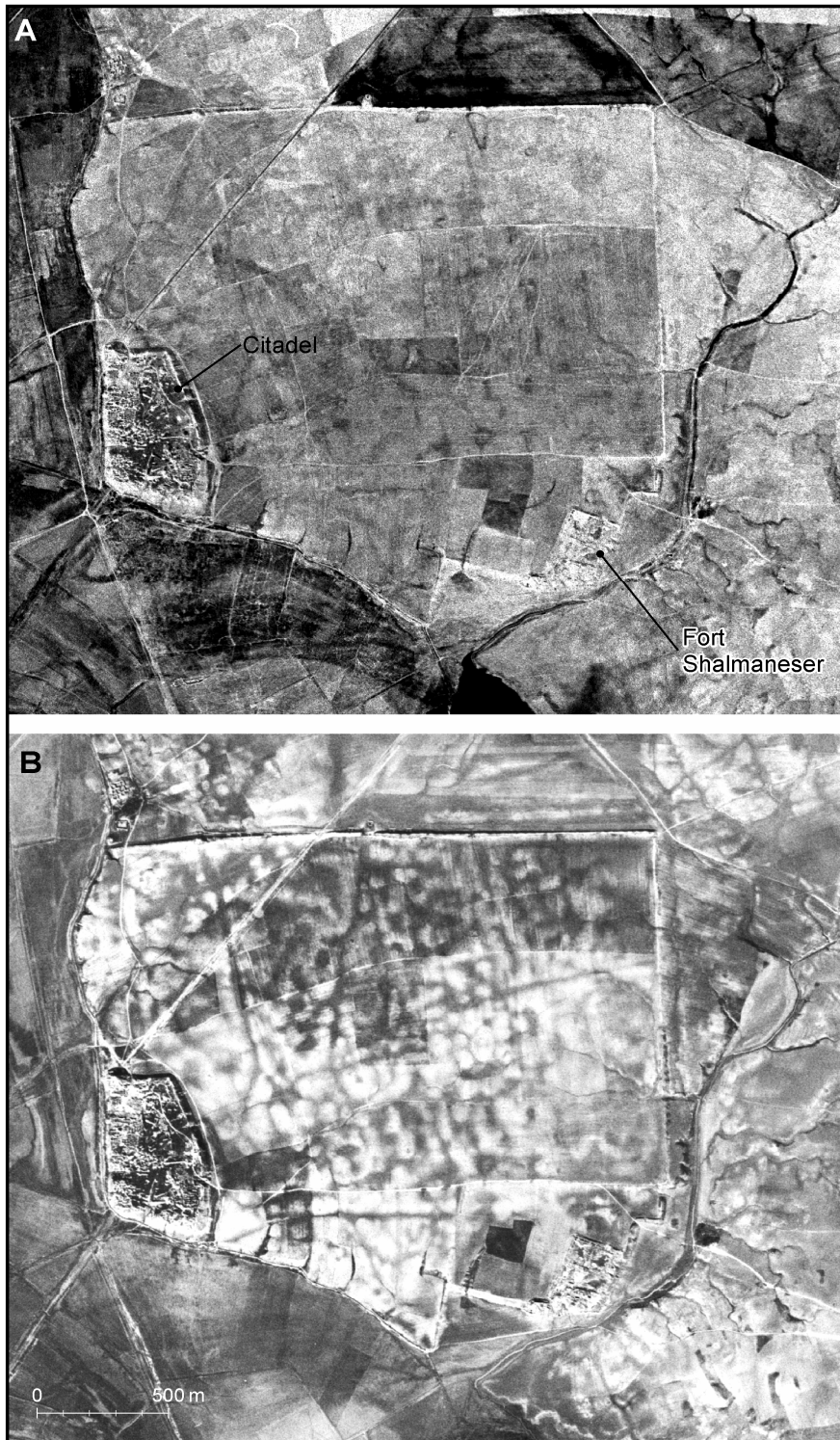


- Baghdad: Directorate of Antiquities and Heritage.
- Kühne, Hartmut. 2011. "Urbanism in the Assyrian Homeland," in *Correlates of Complexity: Essays in Archaeology and Assyriology Dedicated to Diederik J.W. Meijer in Honour of his 65th Birthday*, PIHANS 116. Edited by Bleda Düring, Arne Wossink, and Peter M.M.G. Akkermans, pp. 143-152. Leiden: Nederlands Instituut voor het Nabije Oosten.
- . 2012. "Water for Assyria," in *Proceedings of the 7th International Congress on the Archaeology of the Ancient Near East, 12-16 April 2010, the British Museum and UCL, London*. Edited by Roger Matthews and John Curtis, pp. 559-572. Wiesbaden: Harrassowitz.
- Larsen, Mogens Trolle. 1996. *The Conquest of Assyria: Excavations in an Antique Land*. London and New York: Routledge.
- Loud, Gordon, and Charles B. Altman. 1938. *Khorsabad, Part 2: The Citadel and the Town*. Oriental Institute Publications 40. Chicago: University of Chicago Press.
- Lumsden, Stephen. 2000. "On Sennacherib's Nineveh," in *Proceedings of the First International Congress on the Archaeology of the Ancient Near East*. Edited by Paolo Matthiae, Alessandra Enea, Luca Peyronel, and Frances Pinnock, pp. 815-834. Rome.
- Menze, Bjoern H., and Jason A. Ur. 2012. Mapping Patterns of Long-Term Settlement in Northern Mesopotamia at a Large Scale. *Proceedings of the National Academy of Sciences* 109:E778-E787.
- Morandi Bonacossi, Daniele. 2000. "The Syrian Jazirah in the Late Assyrian Period: A View from the Countryside," in *Essays on Syria in the Iron Age*, Ancient Near Eastern Studies Supplement 7. Edited by Guy Bunnens, pp. 349-396. Leuven: Peeters.
- Nováček, Karel. 2011. Archaeology of the Town under the Citadel Erbil/Hawlér. *Subartu* 4-5:10-13.
- Oded, Bustenay. 1979. *Mass Deportations and Deportees in the Neo-Assyrian Empire*. Wiesbaden: Ludwig Reichert Verlag.
- Parpola, Simo. 1995. "The Construction of Dur-Sharrukin in the Assyrian Royal Correspondence," in *Khorsabad, le palais de Sargon II, roi d'Assyrie*. Edited by Anne Caubet, pp. 47-77. Paris: Documentation française.
- Pedde, Friedhelm. 2012. "The Assyrian Heartland," in *A Companion to the Archaeology of the Ancient Near East*, vol. II. Edited by Daniel T. Potts, pp. 851-866. Malden and Oxford: Blackwell.
- Russell, John Malcolm. 1991. *Sennacherib's Palace Without Rival at Nineveh*. Chicago and London: University of Chicago Press.
- Scardozzi, Giuseppe. 2011. Multitemporal Satellite Images for Knowledge of the Assyrian Capital Cities and for Monitoring Landscape Transformations in the Upper Course of the Tigris River. *International Journal of Geophysics* 2011:Article ID 917306.
- Scott, M. Louise, and John MacGinnis. 1990. Notes on Nineveh. *Iraq* 52:63-73.
- Stronach, David. 1994. "Village to Metropolis: Nineveh and the Beginnings of Urbanism in Northern Mesopotamia," in *Nuove fondazioni nel Vicino Oriente antico: Realtà e ideologia*. Edited by S. Mazzoni, pp. 85-114. Pisa: Giardini.
- . 1995. "Notes on the Topography of Nineveh," in *Neo-Assyrian Geography*. Edited by Mario Liverani, pp. 161-170. Rome.
- Stronach, David, and Stephen Lumsden. 1992. UC Berkeley's Excavations at Nineveh. *Biblical Archaeologist* 55:227-233.
- Ur, Jason A. 2003. CORONA Satellite Photography and Ancient Road Networks: A Northern Mesopotamian Case Study. *Antiquity* 77:102-115.
- . 2005. Sennacherib's Northern Assyrian Canals: New Insights from Satellite Imagery and Aerial Photography. *Iraq* 67:317-345.
- . 2010. *Urbanism and Cultural Landscapes in Northeastern Syria: The Tell Hamoukar Survey, 1999-2001*. Oriental Institute Publications 137. Chicago: University of Chicago Oriental Institute.
- . in press-a. "Declassified Intelligence Satellite Imagery and Ancient Near Eastern Landscapes," in *Space Archaeology: Mapping Ancient Landscapes with Air and Spaceborne Imagery (in Observance of the 40th Anniversary of the World Heritage Convention)*. Edited by Douglas C. Comer and Michael J. Harrower: ICAHM.
- . in press-b. "Physical and Cultural Landscapes of Assyria," in *Blackwell Companion to Assyria*. Edited by Eckart Frahm. Oxford: Blackwell.
- Wilkinson, Keith N., Anthony R. Beck, and Graham Philip. 2006. Satellite Imagery as a Resource in the Prospection for Archaeological Sites in Central Syria. *Geoarchaeology* 21:735-750.
- Wilkinson, T.J., and D.J. Tucker. 1995. *Settlement Development in the North Jazira, Iraq*. Warminster: Aris & Phillips, Ltd.
- Wilkinson, T.J., Eleanor Wilkinson, Jason A. Ur, and Mark Altaweel. 2005. Landscape and Settlement in the Neo-Assyrian Empire. *Bulletin of the American Schools of Oriental Research* 340:23-56.



**Fig 1 : Assyria Map**





**Fig2 :**  
**Nimrud 1104-1039**



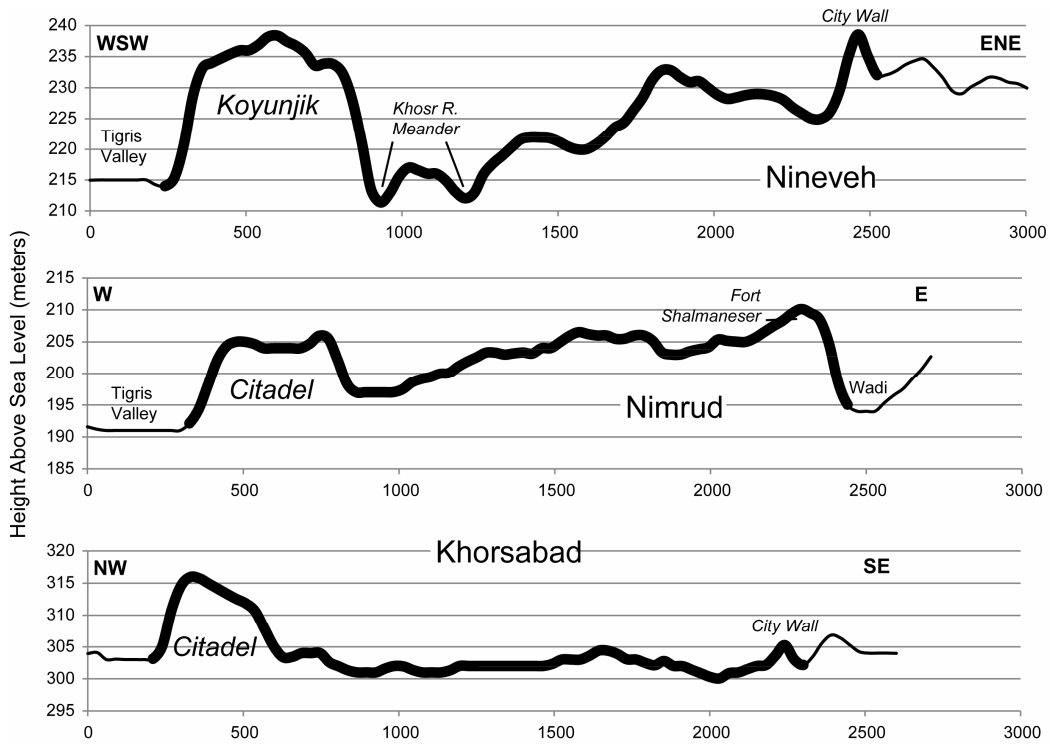


Fig 3: urban\_profiles



Fig 4 : Ziyaret Shemamok

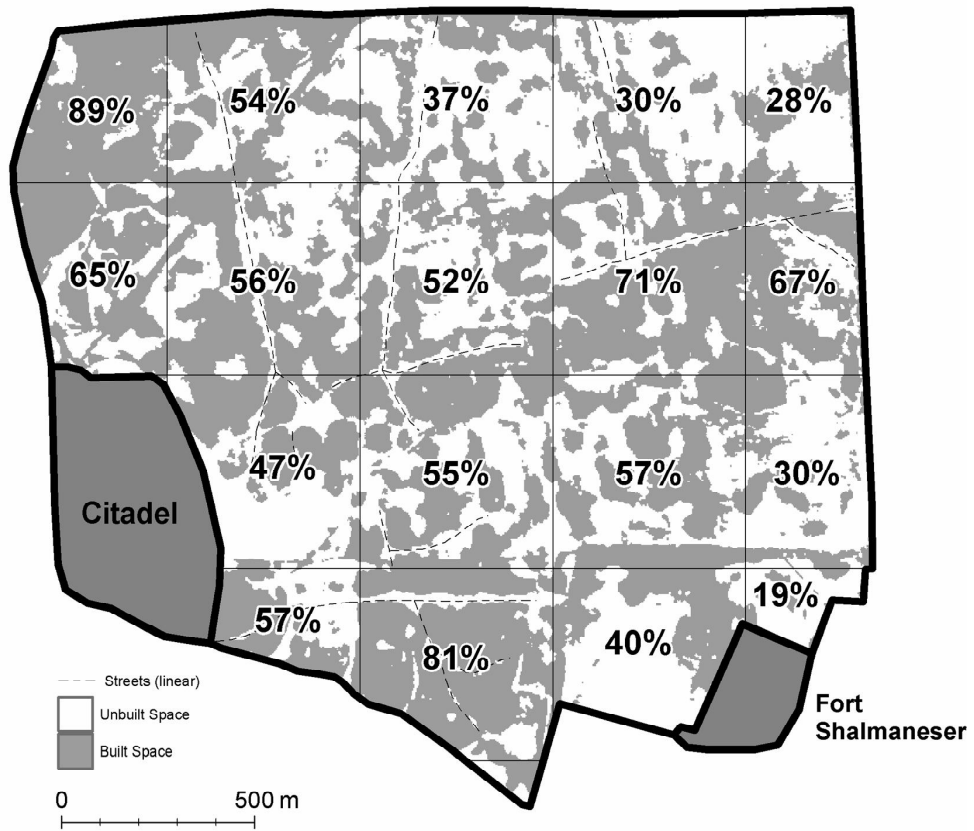


Fig5 : Nimrud Classif



Fig6 : Balawat Khorsabad

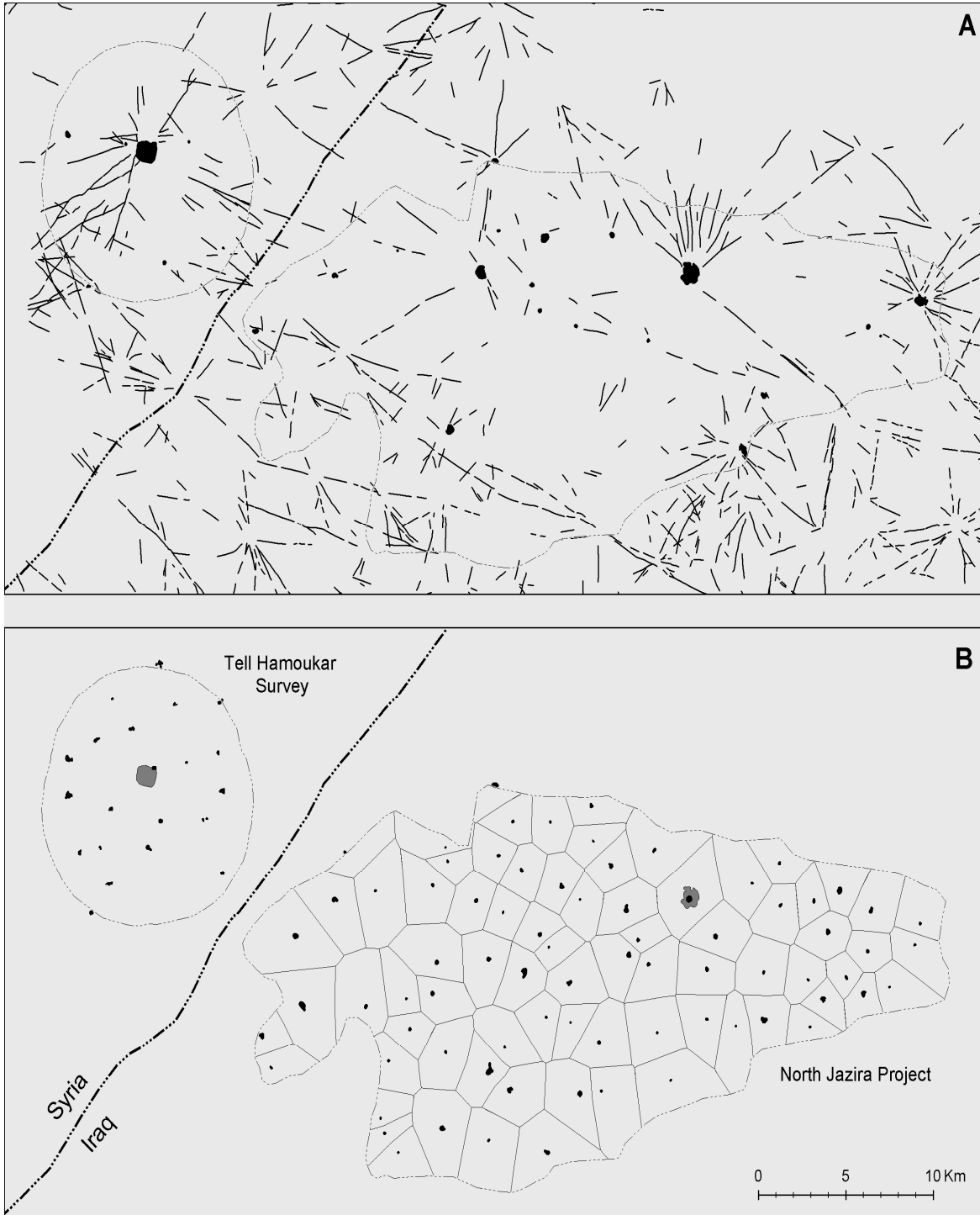


Fig7 : THS-NJP Settlement