Preserving the Archaeological Heritage in Aleppo and its Hinterland

Report on a Project funded by the
Gerda Henkel Foundation
2018–2022

Mamoun Fansa and Kay Kohlmeyer (eds.)

2024
MÜNSTER
RHEMA

Gedruckt mit Unterstützung der Gerda Henkel Stiftung, Düsseldorf

Front cover:
Distribution of sites, QGIS map (Arie Kai-Browne)

Back cover:
Tomb in al-ʿAys, 3D documentation
(National Museum Aleppo / Arie Kai-Browne)

Bibliografische Information der Deutschen Nationalbibliothek

Die Deutsche Nationalbibliothek verzeichnet diese Publikation
in der Deutschen Nationalbibliografie; detaillierte
bibliografische Daten sind im Internet über
http://dnb.dnb.de abrufbar.

Gedruckt auf umweltfreundlichem, chlorfrei gebleichtem
und alterungsbeständigem Papier ♾ ISO 9706

1. Auflage 2024

Timothy Doherty, Münster
Eisenbahnstraße 11, 48143 Münster, Germany
Tel.: 0251 / 44088, Fax: 0251 / 44089
www.rhema-verlag.de

Satz: Rhema
Druck: Hubert & Co., Göttingen
Printed in Germany
ISBN 978-3-86887-054-1

Contents

Foreword and acknowledgements

Mamoun Fansa / Kay Kohlmeyer

When Mamoun Fansa met with Kay Kohlmeyer at one of Mamoun's legendary dinners in the summer of 2017 to discuss how best to support the Antiquities Service in Aleppo in carrying out its tasks professionally during and after the conflict, it quickly became clear that both had a different starting perspective: Mamoun was particularly concerned about the archaeological remains in the Old City of Aleppo – no wonder: he is from Aleppo, and he has repeatedly dealt with the destruction of the Old City as a world heritage site with various publication and conferences since 2013. Kay saw great dangers for the sites in the hinterland – in interpreting his excavations of the temple of the Weather God on the Citadel of Aleppo, it became clear how much the close and wider surroundings must be included in the considerations. It was obvious that both points of view complemented each other wonderfully, and work on a strategy should begin quickly. Thus, in the atmosphere of lavish oriental hospitality owed to Mamoun and his wife Hayfa, the project described below was born, which now, after four years, has come to what we consider an extremely positive conclusion.

It was evident for both of us that the Antiquities Service in Aleppo did not have a sufficient data basis for the management of archaeological heritage protection in order to quickly and effectively represent the interests of archaeology in the upcoming reconstruction and infrastructure measures in the city and the hinterland. At that time, we had no idea that the period of armed conflict and foreign occupation of parts of the Aleppo governorate would continue until today. At that time, we still formulated the objective as: "The aim of this project is to provide technical support to the Department of Antiquities in Aleppo in documenting archaeological relics during ground interventions of any kind in the run-up to construction work as well as during construction, and in recovering or conserving relevant structures in situ. A data collection is to be used to assess archaeological features and to determine and initiate the respective procedure for documentation or conservation."

A funding application was developed quickly and its approval enabled us to start an initial two-year project on 1 February 2018, limited to Aleppo and its immediate surroundings within a radius of 30–50 km.

We had asked ourselves which colleagues could be recruited for such a project, and great luck was with us: one of the undoubtedly best connoisseurs of the environs of Aleppo, Dr Roswitha Del Fabbro, who had done her doctorate on this topic, immediately agreed to collaborate. We received a second commitment just as spontaneously from Dr Youssef Kanjou, the former director of the Aleppo National Museum and Antiquities Service, who had also supported Roswitha in her field research. With these two specialists, without exaggeration, the success of the project was pre-programmed. Both of them put other current commitments on hold in favour of our project: Roswitha to continue her teaching activities, Youssef to complete his research on Syrian prehistory. Their contributions to the success of the project are impressively reflected in this publication.

From the beginning, the research fellow at HTW Berlin, Arie Kai-Browne M.Sc., supported us in all questions of systematic data acquisition from remote sensing to photogrammetry and Geographic Information Systems. His very intensive involvement is also likely to have limited the continuation of other of his projects. Some of his expertise and commitment is visible in this book, but does not reflect the full extent, as he spent countless hours supporting our partners in Syria with internet consultations, as well as training in Beirut and Aleppo.

In summer 2018, Mustafa Alnajjar M.A., at the time a doctoral student at the University of Basel, joined the team. He had already published on topics of prehistory in the Levant and the endangered Syrian cultural heritage, and was thus able to contribute specific knowledge and excellently strengthen the network with Syrian colleagues.

Not least at the request of our Syrian partners, we submitted an application in autumn 2019 for funding for a two-year project extension to cover the en-

1

Project aims and procedure

Mamoun Fansa / Kay Kohlmeyer

This report provides an overview of the Aleppo project which was approved by the Director General of the Direction Général des Antiquités et Musées (DGAM) and the Conseil des Antiquités, and which was funded by the Gerda Henkel Foundation (Düsseldorf). Its four-year duration began in February 2018 and ended in January 2022. In a first phase, the project only covered part of the Aleppo Governorate. In the second phase, the sites of the entire province of Aleppo were recorded using the same system.

A. Initial situation and project goals

The Department of Antiquities at the National Museum of Aleppo in Aleppo did not have a sufficient data basis for the management of archaeological heritage protection in the post-crisis period in order to quickly and effectively represent the interests of archaeology in the upcoming reconstruction and infrastructure measures. No systematic database on the archaeological heritage in the city and surrounding area had been maintained. As a result, the antiquities service could only intervene spontaneously and reactively in upcoming reconstruction and infrastructure measures in the city and the surrounding area. There was no way to help steer archaeological measures in advance. Apart from the resulting loss of archaeological substance, its role was consequently perceived by planners as inhibiting development and unpredictable, which severely limits its ability to exert influence.

For the management of archaeological heritage protection, and thus also of future archaeological research, this project is intended to provide technical support to the antiquities service to define the necessary archaeological framework conditions in order to be able to participate in development plans, as well as to deal adequately with the archaeological cultural heritage in the run-up to ground interventions as well as during measures. This requires a systematically and quickly accessible collection of data on the basis of which archaeological features can be assessed in order to initiate the respective procedure for documentation, conservation or preservation in a well-founded manner.

The project pursues the direct support of the Antiquities Service in Aleppo and the DGAM in Damascus. The data collection to be created is therefore in English and Arabic and is structured in such a way that the data can be easily and directly integrated into a digital archive and database of Syrian sites based on a Geographic Information System at the DGAM.

This approach coincides with the measures for the digitisation of site documentation as well as museum inventories, which the DGAM has been promoting over the last decade. Our colleagues in Damascus give an insight into this in chapter 2.

Old City of Aleppo

For the urban area of Aleppo, archaeological knowledge is still scarce; in general, the literature points out that Hellenistic and pre-Hellenistic structures are unexplored due to recent overbuilding (Klengel 1997). This situation allowed for highly hypothetical, unverifiable reconstructions (Nigro 1997–1999, 2000). Even on the Citadel, only a limited area, the interior of the temple of the Weather God, has been explored (Gonnella/Khayyata/Kohlmeyer 2005; Kohlmeyer 2009; Kohlmeyer 2016b). The actual residential settlement may have been located in the accumulation of cultural layers in the district of al-Aqaba (Sauvaget 1939; Sauvaget 1941). There is also no reliable estimate of the height of the cultural layers in the city area, as no information is available on the terrain surface before settlement began. Isolated evidences were obtained during the excavation campaigns at the Aleppo Citadel by visiting foundation pits for modern buildings.

tation of stratigraphic references. Attention should be paid to the deep craters (Fig. 3), which could provide insight into the oldest cultural layers. Under no circumstances should underground features remain undocumented and without interpretation.

Hinterland of Aleppo

The history of Aleppo cannot be understood without its hinterland and the sources located there, especially since political centrality in antiquity was not limited to Aleppo, but had at times shifted to places in today's surrounding countryside. And not only the city itself, but also the surrounding area has been severely affected by the conflict and must be looked after by the Aleppo Antiquities Service, not only in a future course of reconstruction and infrastructure measures but also as the destruction of sites is increasing dramatically.

Now, in particular, sites in Turkish-occupied and contested northern Syria, including such important places as Ǧindīris (Figs. 4–8) and ʿAyn Dāra (Figs. 9–15), are affected by enormous devastation[2]. Ǧindīris (Jinderis, Gindaros) was already an important centre in the Bronze Age, but superposed by the Hellenistic city (Sürenhagen 1999, Khadour et al. 1997; Kramer 2004; Abdulrahman 2013). The temple of ʿAyn Dāra is one of the most important testimonies of Syro-Hittite religious architecture (Abū ʾAssāf 1990, 1993, 1994; Stone/Zimansky 1999; Kohlmeyer 2008). It dates to the 2nd and early 1st millennium BCE and was richly decorated with sculptures of lions and sphinxes as well as reliefs.

The series of satellite images Figs. 4–13 show examples of how sites are profoundly and extensively destroyed in a short period of time by acts of war and militarisation. It is shocking that internationally recognised principles of law for the protection of cultural heritage are being deliberately violated, and that there is almost no international reaction, except for a very short note in the UN report A/HRC/45/31, August 2020. Only one professional society of archaeologists, the American School of Oriental Research, documented the cultural losses as long as it was allowed to do so. This also applies to systematic looting, often with the use of bulldozers, and the disappearance of sculptures, such as the larger-than-life lion that was placed on the way up to the temple of ʿAyn Dāra. This site, formerly one of the most important monuments in the Near East and beyond, is a particularly scaring illustration of what lies at the end of an antebellum silence by the world: first the temple was bombed, then it became the site of combat exercises, then its last remains were further destroyed by bulldozer.

As described above, we started with the collection of data on 178 sites in an area extending about 50 km to the north and 35 km to the east, west and south of Aleppo, the basis of Roswitha Del Fabbro's dissertation, The Aleppo Hinterland (Del Fabbro 2015; cf. Del Fabbro 2012; Knitter et al. 2014). In the following step, survey data from the literature was systematised and incorporated. Processed were so far:

- The 'Land of Carchemish-Project', carried out in 2006 in the area between the Euphrates, the Saǧur and the Turkish border (Peltenburg/Wikinson 2008; Peltenburg et al. 2012; Ricci 2013; Wilkinson/Peltenburg 2009, 2010; Wilkinson et al.: 2011, 2012, 2016): 80 sites.
- Survey in the Aleppo-Manbiǧ-Maskana triangle, east of Aleppo, carried out in 1939 (Maxwell-Hyslop et al. 1942): 114 sites.
- Survey in the Ǧabbul Plain, east of Aleppo, carried out in 1996 (Schwartz et al. 2000; Yukich 2013); at its centre is Schwartz's excavation in Umm al-Marra (Curvers et al. 1997; Schwartz et al. 2012): 145 sites.
- Survey in the Wadi Abu Qalqal, a tributary of the Euphrates, carried out in 2004 (Mottram/Menere 2005): 34 sites.
- Survey in the Syrian Upper Euphrates Valley, carried out during the late 1980s (McClellan/Porter unpublished): 26 sites.
- Survey in the ʿAfrin Valley as part of the Amuq Plain Survey, as far as on Syrian territory, carried out in 1936 (Braidwood 1937): 19 sites.
- Survey of Paleolithic sites in the ʿAfrin Valley, carried out in 1987 (Muhesen/Akazawa/Abdul-Salam 1998): 12 sites.
- Survey in the Saǧur Valley, carried out in in the late 1970s (Besançon et al. 1980; Copeland 1985; Copeland/Moore 1985; de Contenson 1985; Moore 1985; Sanlaville 1985; Eidem 2013): 75 sites.
- Survey in the wider area of the river Quwayq, carried out between 1977 and 1979 (Matthers 1981): 88 sites.
- The so-called 'Dead Cities' of the Byzantine period, in the limestone massif west of Aleppo, as far as they lie in the governorate (Baccache 1979–80; Beyer 1925; Butler 1907, 1907–1949, 1929; de

2 https://dgam.gov.sy/sites-ain-dara/?lang=en, last accessed 10.02.2019.

Fig. 4: Ǧindīris, date of recording 18.6.2010: excavation areas and orthogonal Hellenistic street system visible as vegetation anomalies (Google Earth).

Fig. 5: Ǧindīris, date of recording 17.3.2018: artillery fire and military use as well as illicit excavations? (light spots in green plant cover, Google Earth).

B. Procedure of site documentation

The documentation process follows the flowchart.

Excel database

The first step is the basic documentation in Excel format, bilingual in English and Arabic (see chapter 4, catalogue of sites). This procedure has absolutely proven itself. If the interfaces / entry fields match, data migration from Excel to Oracle is unproblematic. The advantage of the Excel database is that everyone can handle it. The database has been completed for 809 sites; 103 of them are in the adjacent area of the Idlib governorate. They are included because they were registered in surveys that covered both the Aleppo and Idlib Governorates across borders. The data sets of these sites were further processed in the applications listed below in order to allow to expand the databases to the national scope one day. Screenshots illustrate the results exemplary (Fig. 19).

Google Earth application

Based on the Excel lists, short characterisations of the sites have been created, which are embedded in a Google Earth interface. The Google Earth application is used by the Aleppo Antiquities Service for orientation and to check the condition of the sites: a quick identification of the sites is given by coordinates and photos. Google Earth allows the user to view satellite images from different years and thus provides a quick overview of changes in condition over time. Interventions in the sites' state of preservation can thus be recognised and documented.

The application is completed and fully functional for 809 sites in the English and Arabic versions. The following screenshots show examples of the application (Fig. 20).

A limiting remark: Google Earth does not produce orthophotos, but consists of a mosaic of often differently distorted individual images. It is therefore not suitable for precise archaeological detail documentation. As a product of a commercial provider, there is also the risk of support being discontinued, which could result in the loss of all information about the sites in this application.

Locus Map documentation

To support the practical archaeological preservation of monuments, at the end of the project the Aleppo Antiquities Service will have access to the data on the sites in the office (on laptop and desktop in Google Earth and in a GIS database) and mobile in the field on tablets. The latter are also used for direct data recording, including photographic documentation and written notes, in each case during site visits. Five laptops and three tablets with installed applications have been handed over to the Aleppo Antiquities Service.

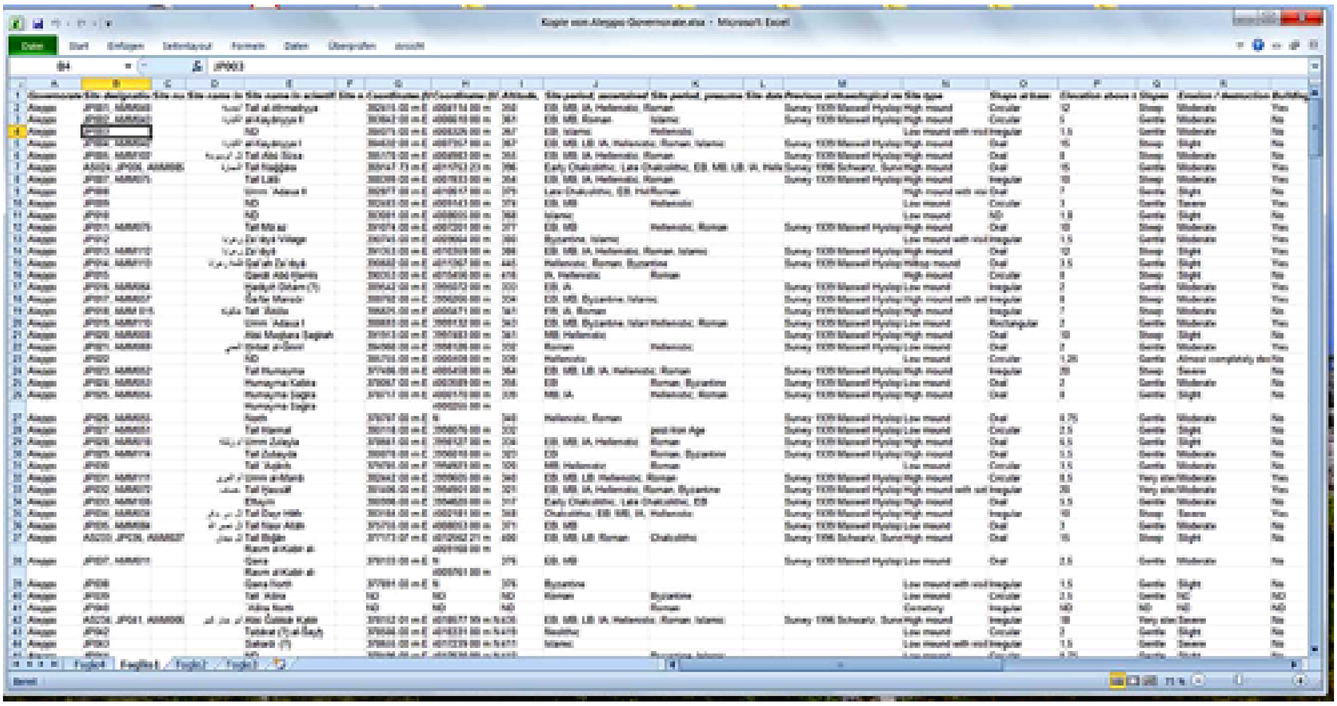

Fig. 19: Screenshot of excel list (1st part).

Figs. 32/33: Beirut 2020, practical exercises in 3D photogrammetry: procedure in the field.

Fig. 34: Beirut 2020, practical exercises in 3D photogrammetry: data evaluation.

Fig. 35: Beirut 2020, discussion after the presentation of the actual Old City excavations.

The workshop offered the opportunity to present the project and its individual components as well as descriptions of the situation in Aleppo. In the discussion that followed, wishes and hopes were formulated that were associated with our project, with reference to the fact that it would have a pilot character for Syria. This was followed by an introduction and practical training on the equipment – laptops and camera equipment – that had been purchased for the Aleppo partners to carry out the project. The focus was on professional photography, supported by the pro-

Fig. 36: Beirut 2020, debate on the actual Old City excavations.

2

Management of archaeological sites and databases: projects started by the DGAM

Nazir Awad / Dima Achkar / Houmam Saad / Balsam Hassan*

Part 1: The Atlas of Syrian Archaeological Sites project

Introduction:

Syria is rich in its heritage and its prominent archaeological sites and monuments in terms of number and international importance, which document the history of the first human achievements from the Paleolithic period to the present time. The date of starting systematic excavations on scientific grounds in Syria goes back to the beginning of the twentieth century, which was limited to several sites using traditional techniques. Many studies and documents related to these sites have been lost, either due to damage caused by poor storage of paper material over a long time or as a result of the attacks that destroyed many archaeological sites throughout the Syrian territory and destroyed many related documents and studies.

The digitization of cultural heritage is imposing itself in light of the conditions of the war that Syria is going through, which made the Syrian cultural heritage face extraordinary challenges, which prompted us to carry out heritage preservation initiatives through digital technology, to preserve civilization and cultural identity and contribute to the preservation and promotion of tangible and intangible heritage, it has locally and globally and benefited from it in stimulating digital cultural tourism.

This prompted the General Directorate of Antiquities and Museums in Syria to start a project to document and digitize archaeological sites and buildings in Syria, using modern technology such as GIS (Geographical Information System), to create a map of all archaeological sites for preservation, archiving, and later cultural and tourism employment, in light of the difficulties being suffered due to the war and siege, which has been unjustly imposed on Syria.

The Atlas of Syrian Archaeological Sites project:

The project of documenting and archiving archaeological sites on the map began in the Directorate of Excavation and Archaeological Studies in several interrelated stages, as follows:

- First stage: Preparing the base map of the Syrian Arab Republic and returning it to the GIS programs, including the layers of governorates, regions, cities, villages, roads, rivers, and neighbourhoods (Fig. 55);
- The second stage: Establishing link points with all antiquities departments and divisions in the Syrian governorates, whose mission is to collect data, pictures, and plans about archaeological sites and provide them to DGAM regular;
- Third stage: is related to training the DGAM cadres in the Syrian governorates on mapping software, both mobile and on desktop PCs, to provide DGAM with location coordinates;
- Fourth stage: designing a special form for the site data and circulating it to the departments and people of antiquities in the Syrian governorates (Figs. 56, 57);
- Fifth stage: the process of collecting and evaluating information received from the governorates;
- Sixth stage: storing, archiving information and establishing a central database that includes the data of all archaeological sites.

* Dima Achkar is main author of part 2, Houmam Saad and Balsam Hassan main authors of part 1.

Fig. 65: Digitizing paper records in excel spreadsheet (screenshot with entries: DGAM).

past years. A number of Syrian museums were robbed without being completely able to trace the stolen objects back or recover them due to a lack of good photography and clear and detailed descriptions.

Given that regrettable fact, DGAM has quickly started the project of digitization Syrian museum collections, being very carefully not to forget any object and to verify and correct all associated information: number, acquisition method (from excavations, confiscated, gift, etc.), date, entry date, status, physical description, place of conservation, related written material. The aim is to inventorize the collections, the unrecorded objects and the missing items, and to determine if those items are damaged or looted. And if so, make every effort to recover them.

Fig. 66: Workflow of documentation.

The Digitizing Artefacts project:

As mentioned above, we are having great difficulties recovering our stolen antiquities in the absence of digital records, therefore it was our first priority to adopt the project of digitizing all the items of Syrian museums.

But the embargo imposed against our country and the position of many foreign archaeological missions who refused to help us in the implementation of the project, made it difficult to obtain necessary tools, equipment and instruments and to find qualified staff, able to conduct the necessary work, especially photography.

Despite all the difficulties we faced, the project was initiated in 2021, within the available means.

The main objectives of the project are:

- Provide an inventory of each museum's antiquities;
- Digitize the paper records in Excel spreadsheets (Fig. 65);
- Verify digital records;
- Take high-resolution images of the objects (Fig. 64);
- Enter missing information (weight, dimensions, etc.);
- Provide the accuracy of descriptions provided.

When documentation process is completed, DGAM will make sure to maintain the new files in an appropriate place, to preserve the collections and to do whatev-

3

Data structuring

Tamader Almuftah / Mustafa Alnajjar / Roswitha Del Fabbro / Mamoun Fansa /
Arie Kai-Browne / Youssef Kanjou / Kay Kohlmeyer

As mentioned above, the final goal of the project is the transfer of all data into a Geographic Information System. For this purpose, its data structure was defined after long, intensive discussions and trial application in various surveys. The categorisation and thesauri were sent to the DGAM, as the GIS database could be transferred to the whole of Syria.

Currently, 809 sites are registered in the QGIS database (see Fig. 25). Of these, 103 are located in the neighbouring governorate of Idlib. These sites were included from the corresponding survey publication. Of course, the data collection is only a snapshot of the current state of knowledge. Not all regions of the governorate have been researched with the same intensity, and some areas have not yet been researched at all. Since the project is primarily intended to serve the preservation of cultural heritage, all sites in reservoirs that have been definitively lost have been omitted.

The terminology developed avoids terms that are not on the same level, i. e. in particular a mixing of subordinate and superordinate categories. It is also intended to be as free of interpretation as possible. It should also not pretend to be more precise than the material collected on the surface allows.

Each survey develops its own classes of sites (cf. for example Wilkinson 2004: 55–56), sometimes on a subjective basis. Therefore, when transferring information from the literature, an adaptation to our terminology had to be made, which was mainly checked by means of satellite images. An exact localisation could not always be achieved: in this case, the site was omitted from further processing due to a lack of geo-referencing.

For the short designation of a site or monument we chose the combination of an abbreviation for the respective survey and the numbering given by the survey. If a numbering was not available, we assigned the count ourselves, and indicate this with an asterisk as placeholder for "Count added". This way, each site or monument has a unique identification.

Basically, our structure should be able to cover the vast majority of archaeological sites and monuments, and the database is expandable (see chapter 8).

Figs. 67–70 show the distribution of the sites in the evaluated surveys.

Structure of the database

1 – governorate (thesaurus) المحافظة

2 – site / monument designation (abbr. of latest survey + numeric, starting with 001)
رمز الموقع (اختصار آخر مسح)

3 – site / monument number according to national heritage list (numeric)
رقم تسجيل الموقع

4 – site / monument name in Arabic (plain text)
اسم الموقع بالعربية

5 – site / monument name in scientific transliteration following DMG standard (plain text)
اسم الموقع (بالاعتماد على معايير الجمعية الشرقية الألمانية)

6 – site / monument name, variants (plain text)
اسم الموقع (التهجئات المختلفة)

7 – coordinates (WGS 84) (decimal E/N)
الاحداثيات (وفقا للنظام الجيوديسي العالمي 84 و الدرجات العشرية)

8 – altitude, m a.s.l. (numeric later added)
الارتفاع فوق سطح البحر

4
Catalogue of sites and monuments

Roswitha Del Fabbro

Arabic adaptation: Youssef Kanjou

The following catalogue includes all Aleppo Governorate sites and archaeological off-site features that have been included in the database so far. It is extracted from the Excel list on which the data collection is based. As described at the beginning, the Excel database contains 809 sites, 103 of which are in the Governorate of Idlib (see chapter 1). All data sets were further processed, including the GIS database. The following catalogue, however, is limited to the sites in Aleppo Governorate.

For reasons of space, the records given here have been shortened by eight categories although they are included in the processing: Site number according to national heritage list / Site date(s), specified / Building structures on site / Modern graveyard on site / Damages before 2011 / Damages since 2011 / Notes / Extensive dossier / Photos/plans.

Accordingly, the records of this catalogue are structured as follows:

- Site designation (Governorate)
- Site name in Arabic
- Site name in scientific transliteration; Site name, variants; proposed or confirmed ancient name
- Coordinates (UTM 37N WGS84) – Easting; – Northing; Altitude, m a.s.l.
- Site period, ascertained; Site period (presumed)
- Previous archaeological research
- Site type; Shape at base; Elevation above the surrounding plain (m)
- Slopes; Erosion, destruction, Approximate size in ha
- Bibliography

(for further explanations see chapter 3).

The transliteration of Arabic names follows the convention of the Deutsch-Morgenländische Gesellschaft. If geographical names on maps or in publications have '*tall*' or 'Ḫirbah' as components, we have left them as they are. The names have grown locally, and modifications just for the sake of standardisation – such as omitting '*tall*' as a part of the name – is therefore not appropriate.

The abbreviations used are: EB, MB, and LB: Early, Middle, and Late Bronze Age; IA: Iron Age; N/A: data not available.

AAS053 (Aleppo) تل مروانية

Tall Marwāniyah

284239.00 m E; 4032734.00 m N; 201 m.a.s.l.

Survey 1937 Braidwood

LB, Hellenistic, Roman, Islamic; Late Chalcolithic, EB (presumed)

High mound; Rectangular; Elevation N/A

Very steep; Slight; 13 ha

Braidwood 1937.

AAS058 (Aleppo) جنديرس

Ǧindīris; proposed or confirmed ancient name: Gindaros, Gindaroupolis, Gandarīs

292722.00 m E; 4029172.00 m N; 228 m.a.s.l.

Survey 1935–45 1956 1963–1975 Tchalenko, Survey 1937 Braidwood, Excavations 1993–1995 Khadour Suleiman Sürenhagen

EB, MB, LB, IA, Hellenistic, Roman, Byzantine

High mound; Oval; Elevation N/A

Steep; Slight; 18 ha

Braidwood 1937; Cohen 2006; Dussaud 1927, pp. 241, 434, 479, Karte 12B3; Honigmann 1923, pp.

149–193, Honigmann, pp. 1–64 Nr. 197; Kettenhofen 2001, p. 672; Kramer 2004; Marmier 1884, p. 7; Schiwietz 1938, pp. 180–187; Suleiman/Khadour/Sürenhagen 1997, pp. 118–119; Sürenhagen 1999, pp. 159–167; Tchalenko 1953–1958, Vol. 1–2: pp. 147, 153; Vol. 3: p. 95.

AAS059 (Aleppo) تل باب ليته

Tall Bāb Līt
304201.00 m E; 4040155.00 m N; 322 m.a.s.l.
Survey 1937 Braidwood
EB, MB; IA, Hellenistic (presumed)
High mound; Irregular; Elevation N/A
Gentle; Slight; 7 ha
Braidwood 1937.

AAS061 (Aleppo) تل المحمدلية

Tall al-Maḥmudliyah
301986.05 m E; 4037788.47 m N; 360 m.a.s.l.
Survey 1937 Braidwood
IA; Late Chalcolithic, EB (presumed)
Low mound; Irregular; Elevation N/A
Gentle; Slight; 3 ha
Braidwood 1937.

AAS063 (Aleppo) تل شيخ عبد الرحمن

Tall Šayḫ ʿAbd al-Raḥman
299758.00 m E; 4035942.00 m N; 341 m.a.s.l.
Survey 1937 Braidwood
EB, MB, LB, IA, Hellenistic
High mound; Trapezoidal; Elevation N/A
Steep; Slight; 3,2 ha
Braidwood 1937.

AAS064 (Aleppo) تللف

Tilif
303349.00 m E; 4034440.00 m N; 372 m.a.s.l.
Survey 1937 Braidwood
Islamic
Hilltop mound; Circular; Elevation N/A
Steep; Moderate; 3 ha
Braidwood 1937.

AAS065 (Aleppo) تل باسوطة

Tall Asyan; Geri Asian, Tall Bāssūṭah
308474.00 m E; 4034917.00 m N; 218 m.a.s.l.
Survey 1937 Braidwood
IA, Hellenistic, Roman; LB (presumed)
High mound; Circular; Elevation N/A
Steep; Slight; 0,65 ha
Braidwood 1937.

AAS066 (Aleppo) تل قوربه

Tall Qūrbah; Tall Quraybah
297008.00 m E; 4032898.00 m N; 265 m.a.s.l.
Survey 1937 Braidwood
Late Chalcolithic, EB, LB, IA
Low mound; Rectangular; Elevation N/A
Gentle; Slight; 11 ha
Braidwood 1937.

AAS067 (Aleppo) تل حمو

Tall Ḥamū
300268.00 m E; 4032586.00 m N; 232 m.a.s.l.
Survey 1937 Braidwood
EB, LB, IA
High mound; Oval; Elevation N/A
Gentle; Severe; 1 ha
Braidwood 1937.

AAS068 (Aleppo) برج عبد الله

Burǧ ʿAbd Allāh
306767.00 m E; 4031472.00 m N; 207 m.a.s.l.
Survey 1937 Braidwood
MB, IA, Hellenistic; Late Neolithic (presumed)
High mound; Trapezoidal; Elevation N/A
Very steep; Slight; 6,2 ha
Braidwood 1937.

AAS069 (Aleppo) تل فراق

Tall Farāq; Tall Firāq
299342.00 m E; 4029092.00 m N; 168 m.a.s.l.
Survey 1937 Braidwood
Hellenistic; Neolithic (presumed)
High mound; Oval; Elevation N/A
Steep; Slight; 0,5 ha
Braidwood 1937.

5

Documentation of pre-Hellenistic and Hellenistic structures in the area of the Old City of Aleppo, special requirements and strategy

Kay Kohlmeyer

With contributions by Mustafa Alnajjar / Mamoun Fansa / Youssef Kanjou*

State of knowledge

In the area of the Old City of Aleppo, there are only two significant mounds: al-ʿAqaba in the west and the Citadel height in the east. Jean Sauvaget developed the idea that the actual ancient Near Eastern settlement area should be separated from the cult area, and considered al-ʿAqaba to be the ancient *tall* of Aleppo (Sauvaget 1939; 1941, pp. 28–30). His idea that the cult centre was hidden beneath the Islamic palace city on the citadel has been confirmed by archaeological research, but the size and location of the ancient Near Eastern settlement area is disputed and unresolved. With a diameter of 200 × 220, maximum 240 m, al-ʿAqaba has a rather small extent compared to other contemporaneous centres and thus does not at all correspond to the imagination of the capital of a large empire, that of Yamḫad, which extended over large parts of the Near East in the Middle Bronze Age, the early second millennium BCE. Nevertheless, we agree with him that al-ʿAqaba, which is over 12 m high, was the site of the ancient settlement mound in the immediate vicinity of the once abundant Quwayq River.

The possibility that arises is that Middle Bronze Age Aleppo extended far beyond the old settlement mound (Nigro 1997–99 and 2000) and even had the size of the Islamic medieval city area, as a predecessor of the Ayyubid city wall was reported by Ibn as-Saddad, possibly also dating to this period (Gaube/Wirth 1984, p. 165). The issue will not be discussed further here (Kohlmeyer 2019 and 2020, p. 53), but according to recent research on the hinterland of Aleppo (Del Fabbro 2012; Knitter et al. 2014), the livelihood for such a large city is questionable, and from a philological perspective, the hypothesis has been developed that the kings of Yamḫad had moved their residence to Ebla (Durand 2018).

The archaeological evidence remains insufficient (Fig. 71). Even on the citadel, only a small area has been excavated, with the temple of the Weather God dating back to the Early Bronze Age, abandoned in the Early Iron Age (Kohlmeyer 2020). At least at times, a building or palace may have been adjacent to it.

Architectural remains of the Middle Bronze Age also came to light during stabilisation measures of the Umayyad Mosque in 1999 to 2000. The Syrian rescue investigations were supported by team members of the excavation on the citadel and have so far not been published (Figs. 72–74). During the aforementioned measures, deep excavations were carried out in front of the wall edges and around the pillars, which were subsequently filled with cement. No systematic preliminary archaeological investigation or monitoring was planned, and only some of the shafts could be documented at all. The most important area, in which we think we can recognise a characteristic part of an 'anten temple', was quickly cemented over before the documentation began.

The lowermost building layer is founded on the natural ground, which slopes from 2.3 m below the current floor of the prayer hall in the east to 7 m below the current floor in the west. The natural subsoil consists of a thick yellowish-white weathering horizon with red marl inclusions, which rests on white limestone rock. A wall slightly rotated from the west – east

* With use of two unpublished reports by Antoine Suleiman and Kay Kohlmeyer.

6
Documentation of sites in Google Earth

Roswitha Del Fabbro / Youssef Kanjou

Remote sensing technology, and especially satellite Earth observation, has become an indispensable tool in archaeological and cultural heritage. Google Earth, which is the descendant of a CIA-funded project, has become probably the most influential and popular open-access satellite-imagery program in the world. Since its public release in June 2005, Google Earth – formerly known as Keyhole EarthViewer – has found its way in various fields of research, including archaeology: it represents, in point of fact, a powerful tool for archaeological and cultural heritage applications. After the first years, the technical level of the relevant imagery has registered a rapid improvement. The resolution of some areas, which at the launch of the program were almost useless due to their poor quality, is at present very similar to that of the best commercially available satellite pictures.

Google Earth, a large Earth-observation data-based geographical information computer application, is an intuitive three-dimensional virtual globe. It enables archaeologists around the world to communicate and share their multisource data and research findings. Different from traditional geographical information systems (GIS), Google Earth is free and easy to use in data collection, exploration, and visualization.

Based on geographical tools and multi-temporal very high-resolution satellite imagery, Google Earth has been shown to provide spatio-temporal change information that has a bearing on the physical, environmental, and geographical character of the archaeological cultural heritage. Google Earth may be used effectively to investigate the archaeological heritage at multiple scales: e. g. discovering new archaeological sites, monitoring historical sites, and assessing damage in areas of conflict, documenting looting and site damage. However, Google Earth and other similar services do not update imagery very often, and therefore are of limited use in cultural heritage monitoring of contemporary conflict zones.

Google Earth is also being used retrospectively by creating and publishing Keyhole Markup Language (KML) files of key findings to supplement scientific publications and broaden the dissemination of knowledge.

Information on 809 archaeological sites in northwestern Syria (Fig. 78) have been recorded on Google Earth site cards both in English and Arabic, providing the following information: ID number, site type, site area, description of the site and its immediate surroundings, state of preservation of the site, proposed date, photos of the site, ancient name/s, damages since 2011, previous archaeological research (surveys, soundings and excavations), bibliography.

The sites were grouped in different folders, one for each of the following geographical areas of the Aleppo Governorate: Aleppo hinterland (Del Fabbro's survey; site designation: AS); River Quwayq (Matthers' survey; RQ); Aleppo-Manbiğ-Maskana triangle (Maxwell-Hyslop's survey; AMM); Maṭḫ region (de Maigret's survey; MR); Ğazr plain (Ciafardoni and Mazzoni's surveys; JS); Land of Carchemish (Wilkinson's survey; LCP); Bab region (registered in National List, not surveyed; BR); Syrian Upper Euphrates (McClellan/Porter's survey; SUE); Sağur region (Moore, Sanlaville and Copeland's surveys; SA); Ğabbul region (Schwartz's survey; JP); Arid Margins region (Geyer's survey; AM); Ebla Chora region (Mantellini, Peyronel and Michale's survey; EC); Dead Cities (div. surveys; DC); ʿAfrin valley, part of the ʿAmuq-Survey (Braidwood's survey; AAS); ʿAfrin valley (personal communication; AVC); ʿAfrin valley – Paleolithic sites (Muhesen, Akazawa and Salam's survey; AVP); Wadi Abu Qalqal (Mottram and Menere's survey; WAQ); Swayḥāt region (Wilkinson's survey; SS).

To display pictures on Google Earth site cards, the function “add web image” was used. The function “add local image” allows to upload images directly

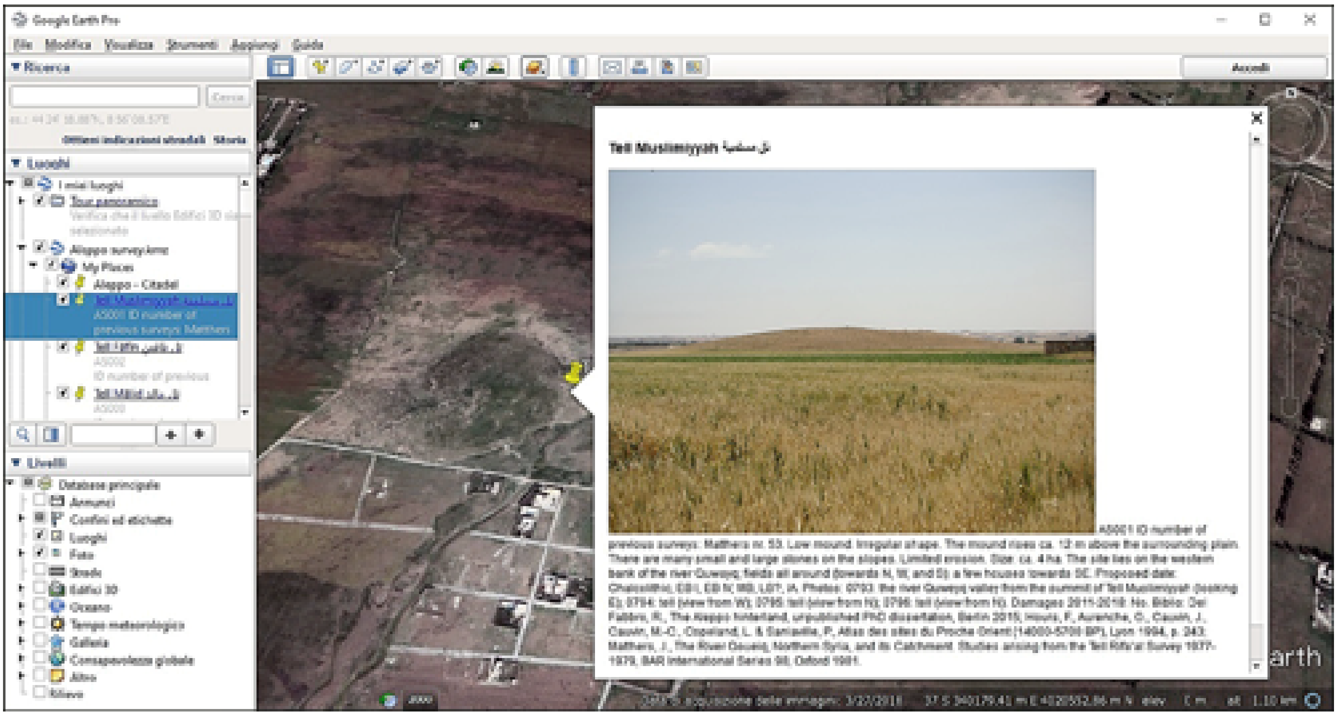

Fig. 79: Example of Google Earth site card in English: Tall Muslimiyah (AS001, with entries: Roswitha Del Fabbro).

Fig. 80: Example of Google Earth site card in Arabic: Tall ʿAran (AS025, with entries: Roswitha Del Fabbro).

from the desktop. However, there are some issues to consider. In this case, images will be packaged with the saved layer from Google Earth (a KMZ file). Images, especially large ones, could greatly increase the size of this file and make it difficult to share. In addition, the size of the image could make it difficult to view. While it is possible to change the HTML code to resize the picture, it is best for both file size and viewing if the image is resized before adding it to the marker. To overcome these problems it was decided to use links to an external website, where the images of the archaeological sites have been uploaded.

In Figs. 79 and 80 two examples are provided, namely the English site card of Tall Muslimiyah

7
Documentation of sites in Locus Map Pro 3

Arie Kai-Browne

For documenting and disseminating the current condition of the archaeological sites in Aleppo and its surrounding area it was necessary to develop efficient workflows to capture descriptive as well as pictorial information on site under less-than-ideal conditions. Although Google Earth has its advantages, especially in regards to the accessibility of multi-temporal, very high-resolution satellite imagery, it is less suitable for field work where descriptive and pictorial information has to be linked to spatial data in an efficient manner that can be easily transferred to other applications. Additionally, Google Earth requires a steady internet connection, which, due to the current situation in Syria, cannot be guaranteed at all times. Therefore, a mobile application capable of basic geographic mapping features without requiring permanent internet access was necessary for documenting the current condition of archaeological sites in and around Aleppo.

For this purpose, the application Locus Map Pro 3 was used (Fig. 93). Some of the decisive factors for choosing this application was the possibility to use it fully offline, it does not have a cloud based subscription i. e. a one-time payment for a licence [1] and it has all geo-related features required for the actual field work. New points with corresponding descriptions, such as the current condition, can be easily created within the applications using the mobile devices GNSS and even can be linked to geotagged images taken in the field (Fig. 94). The location of each georeferenced image can be displayed within the map and the coordinates of each image are stored in the EXIF data. Even the direction in which the images were taken can be recorded using the device's internal magnetometer.

In addition, the application allows the import and export of common geodata formats and therefore can easily be used in other applications like in a Geographic Information Systems (GIS). It also offers the possibility to use self-created maps or satellite imagery, which can be used as base maps offline.

Another bonus is the highly customizable user interface of the application. Many features offered by Locus Map Pro 3 are not needed for fulfilling the project's goals and being able to customize the user interface based on the requirements needed definitely helps with creating an efficient workflow.

As described in the previous chapter, Roswitha Del Fabbro mapped the archaeological sites around Aleppo before the conflict and compiled the site distribution with short descriptions and images within Google Earth. For using the information during the fieldwork it was necessary to transfer the data to Locus Map Pro 3 while maintaining the spatial position as well as the corresponding images of the sites. For this purpose, Google Earth's KMZ [2] format was used. Minor adjustments to the KMZ file had to be made since the images linked in Google Earth were webbased and therefore not accessible in an offline capacity. After extracting the KML file, which is a ASCII file format, from the original KMZ file the image paths could be updated to a local, relative path. The images and the updated KML file then were compressed again into the KMZ format. This format was imported to Locus Map Pro 3 and enabled the offline use of the site distribution with the corresponding images.

As a base map for offline use, the Sentinel-2 true colour satellite images provided free of charge by the European Space Agency (ESA) as well as a terrain relief of the ALOS World 3D were processed [3] and imported to Locus Map Pro 3 (Fig. 95). For this, the original geotiff data had to be converted into a tiled

1 Unfortunately this has changed with the release of Locus Map 4, where only subscription based licences are available. In our case this circumstance would have made the use of the app impossible.

2 https://developers.google.com/kml/documentation/kmlreference.

3 For more details on the remote sensing data, please refer to chapter 8.

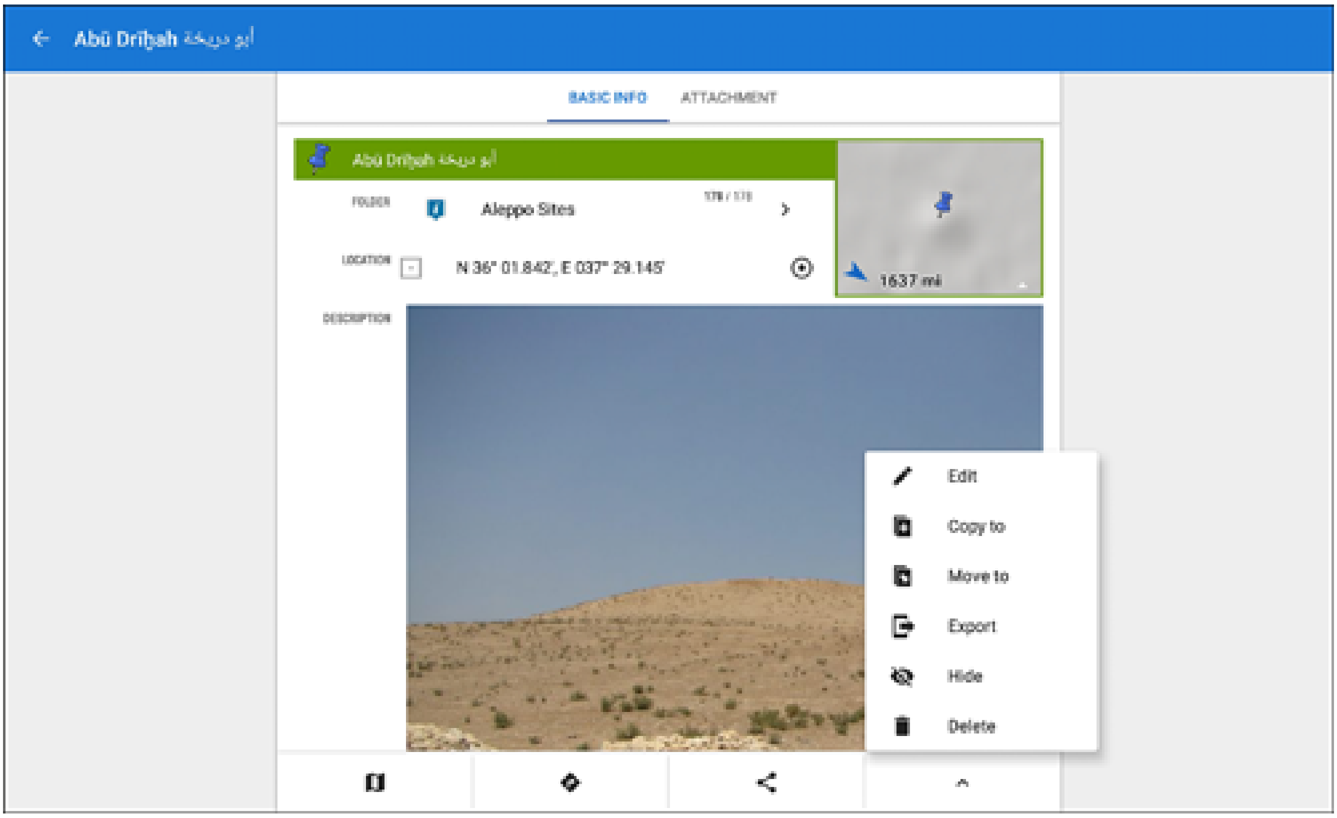

Fig. 94: Example of the geotagged images within Locus Map Pro 3 (screenshot Arie Kai-Browne).

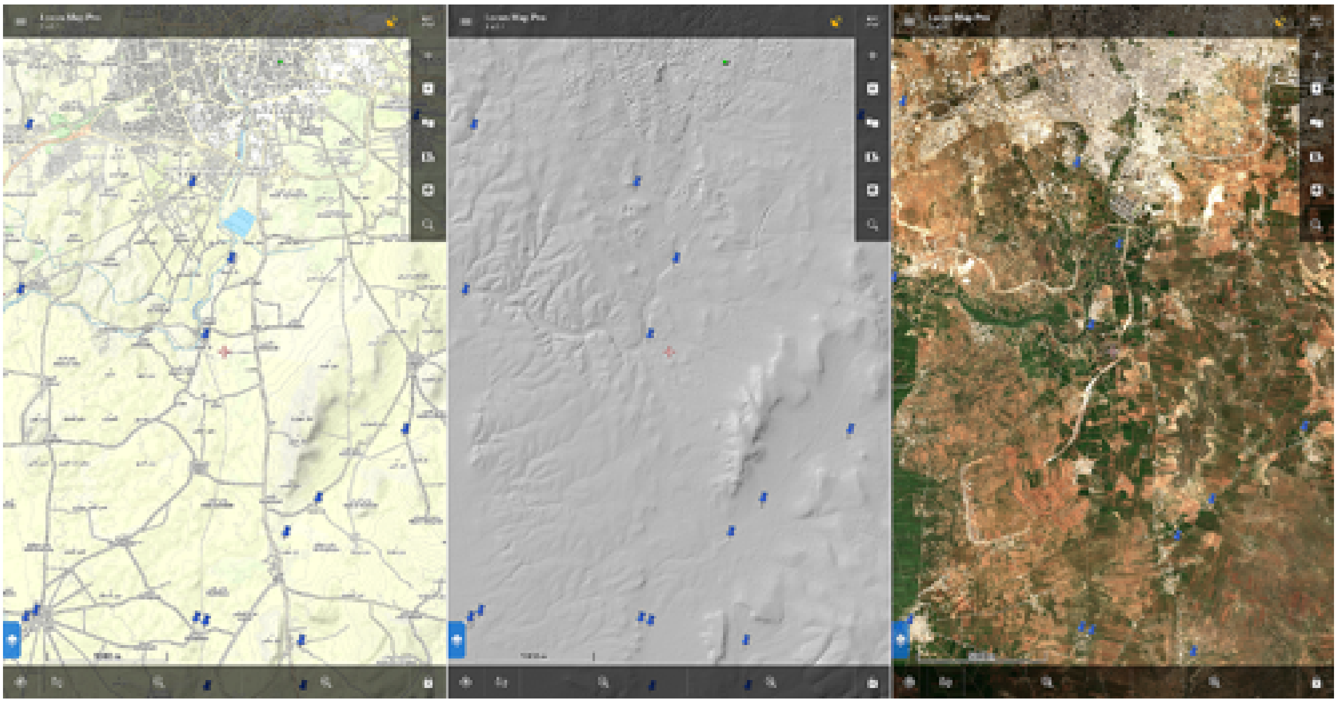

Fig. 95: Various base maps in Locus Map Pro 3. The relief and colour image were acquired from a third party and imported to Locus Map Pro 3 (screenshot with entries: Arie Kai-Browne).

8
Documentation of sites in QGIS

Arie Kai-Browne

With contributions by Tamader Almuftah

The use of a Geographic Information System (GIS) for studying archaeological sites is a well-established approach due to the manifold benefits a GIS offers for entering, processing, analysing and visualising large amounts of geodata[1]. Part of this project was to facilitate a GIS to merge various surveys of archaeological sites in the provinces Aleppo and parts of Idlib.[2] During the conceptual phase of creating the data structure multiple aspects of potential use cases were considered. The primary goal was to assist the DGAM in managing a large number of archaeological sites with particular consideration regarding assessing and monitoring the current condition of the sites. In addition to the attributes on the site's condition before and after the war, supplementary information on the type of sites, the periods, descriptions and more enable various other applications related to archaeological research.[3]

Within this project, various datasets including both vector and raster based data were compiled within the open-source software QGIS. The decision on using QGIS as the main application was based on the following: It is free and open-source, therefore one does not have any problems in regards to sharing project files with others since anyone can download the software. QGIS has a simple user interface and offers a vast amount of geoprocessing tools that easily rival commercial solutions. Finally, due to QGIS being open-source, all data processing is easily reproducible since the used algorithms can be accessed at any time.

1 For a detailed treatment of the importance and development of GIS in archaeology, see Wheatley/Gillings 2002 and McCoy/Ladefoged 2009.

2 On the specifics of the survey data please refer to chapter 4.

3 The type of attributes are presented and discussed in chapter 3.

As base maps for the GIS various remote sensing data sources were acquired. These include the Sentinel-2 true colour satellite images provided free of charge by the European Space Agency (ESA). The Sentinel-2 satellite records a total of 13 spectral bands[4], four of which have a spatial resolution of 10 m, six with 20 m and three with 60 m per pixel.[5] The absolute geolocation error for Sentinel-2 MSI L1C is 8m CE95.[6]

To cover the area of Aleppo and its surrounding, a total of 7 Sentinel-2 MSI L2A[7] datasets were acquired (Fig. 97). The datasets include separate images for each of the above mentioned spectral bands as well as already processed true colour images[8] with a geometric resolution of 10 m per pixel. While the geometric resolution of 10 m per pixel is too coarse for detecting illicit excavations or mapping archaeological structures such as building remains, necropolises and similar, it is sufficient for general orientation purposes and can be used to determine the extent of some sites to a certain degree (Fig. 97).

In addition to the true colour image, a digital surface model (DSM) provided by the Japan Aerospace Exploration Agency (JAXA) was acquired. The DSM is based on the Panchromatic Remote-sensing Instrument for Stereo Mapping (PRISM), which is a sensor on board of the Advanced Land Observing Satellite "DAICHI" (ALOS). The freely available dataset

4 Spectral bands: 10 m – 490 nm, 560 nm, 665 nm, 842 nm; 20 m – 705 nm, 740 nm, 783 nm, 865 nm, 1610 nm, 2190 nm; 60 m – 443 nm, 945 nm, 1375 nm.

5 Sentinel-2 User Handbook 2015 p. 52–54.

6 Gascon et al. 2017 p. 58–59.

7 Level 2A products – On the specifics of the different processing levels please refer to Sentinel-2 User Handbook 2015

8 The true colour images were created by layer stacking the bands B04 (red), B03 (green) and B02 (blue).

9

Damage assessment of sites

Youssef Kanjou / Mustafa Alnajjar

With contributions by Zakeia Abdalhy / Desbina Baslan / Nigar Khojeh / Ahmad Othman / Ibrahim Al-Sulaiman / Batoul Sirees

The state of the war in Syria throws a shadow over cultural life, archaeological sites, and historical monuments in the country, especially in Aleppo Governorate, which witnessed massive destruction in large parts of the Old City and the surrounding countryside. The archaeological surveys and excavation projects that were underway before 2011 were stopped; Due to the military conflict and the general security situation in the vicinity of Aleppo, the guard personnel of archaeological sites, who were directly responsible for monitoring and protecting the sites, had to quit their work. Also, all field activities and official documentation of the extent of damages of archaeological sites by archaeologists working for the Directorate of Antiquities and Museums of Aleppo had to stop as well in the period from 2011 to 2019. At this phase, the first damage documentation work was limited to satellite images (Google Earth) and social media, which usually provide a general and not accurate picture. For this reason, the urgent need arose to carry out systematic documentation work on-site to determine the level of damages as well as to verify the results of information gathered from satellite imagery. A number of field surveys were conducted during the period from 25.10.2020 to 21.9.2021. The main goal of these was to provide comprehensive documentation of the archaeological *talls* in Aleppo Governorate according to international standards, including linking satellite images, field documentation, photographic images and further information with each other.

The state of archaeological sites in Aleppo region during the war

Archaeological sites in Aleppo Governorate were subjected to extensive destruction, especially the archaeological *talls* in the surrounding areas of the city of Aleppo, which were used as military bases, due to their strategic geographical location and their height above the surrounding plains. The causes of the destruction of these *talls* were not limited to various military activities such as digging trenches and establishing military bases, but civil activities, such as new buildings and agricultural works, in addition to illegal clandestine excavations which spread on a large scale, that played a huge role in the destruction of these *talls*.

Usually, the destruction of most parts of the archaeological sites are associated with military activities, where the upper parts appear most affected. In most sites the upper parts of the archaeological *talls* were removed, while the side slopes are exposed to the excavations of trenches and tunnels. Qalᶜah al-ᶜAys (south Aleppo), Tall Al-Naᶜam and Tall ᶜAlam (east Aleppo) are considered one of the most important examples of the military use of the archaeological *talls*, as their positioning on the battle map against IS in southeast Aleppo and near the military sites made them vulnerable to destruction (Fig. 100). The same thing applies to Tall Ḥağīrah, Tall ᶜAran, Tall ad-Duwayr (east of Aleppo), Tall al-Malīhiyah (south of Aleppo), where trenches of varying dimensions were dug, sometimes more than 100 m, with a depth ranging from 1 to 2 m (Fig. 101). Therefore, the most severe type of damages to archaeological *talls* were the trenches since they did not only destroy the surface layers but caused great damages to the lower layers as well (Fig. 102). While Tall Bīdūrah (east Aleppo) is an example of the extensive surface bulldozering (Fig. 103).

10

Guidelines for 3D documentation of small-scale excavations under difficult circumstances

Arie Kai-Browne

A. General introduction

The documentation of archaeological excavations is of great importance since an excavation is an irreversible, destructive process. The documentation serves as the basis for all further research and is, with exception of the finds and probes, the only remnant that is passed onto future generations of researchers. An archaeological documentation must encompass a multitude of different aspects to make the excavation as comprehensible as possible. It includes a written description of what exactly has been excavated, the methods used as well as first interpretations on the context of what has been excavated.[1] In addition to the written description, which can only hold a certain amount of comprehensible information, further visual and spatial information has to be recorded as well. This is usually achieved with a combination of photographic images, scaled drawings and additional measurements within a coordinate reference system.

In the last decade the use of methods for capturing high-resolution 3D data for the documentation of archaeological excavations has seen a rapid increase.[2] While laser scan technology is still used comparatively seldom and quite often only under special circumstances due to the high acquisition and maintenance costs, image-based modeling[3] is becoming more and more a standard for the 3D documentation in archaeology. Image-based modeling merely requires a digital camera, a PC, appropriate software and a measurement device such as a total station or a RTK/PPK capable GNSS. This equipment is usually already part of every excavation. In cases where a measurement device is not available, a local coordinate system can be set up using a manual approach, which will be described in this guide as well.

The following guide does not cover all aspects of image-based modeling but is mainly intended to give a brief summary of the most important aspects when using this method for the documentation of small-scale archaeological excavations.[4] Even though the data processing will be done using Agisoft Metashape Professional, the general principles of data acquisition can be applied to other software as well.

B. Data acquisition

The data acquisition is one of the most essential parts in image-based modeling and determines the resolution as well as the accuracy of the final 3D-model. In general, data acquisition can be divided into two main areas: The photographic process and the distribution of camera positions in space (camera pose). The former is related to the fundamentals of photography, where aspects such as correct exposure, sufficient depth-of-field, motion blur and low image noise

1 For an overview on what an archaeological documentation should include see Drewett 1999 pp. 58–75, Renfrew/Bahn 2006 p. 115, Howard 2007 pp. 7–11.

2 Some good examples of applying image-based modeling for archaeological documentation can be found in Neubauer 2008; Doneus et al. 2011, De Reu et al. 2013, De Reu et al. 2014, Koenig et al. 2017.

3 Image-based modeling is a term used for describing the entire pipeline for computing 3D-models from a set of digital images using Structure-from-Motion and Multiview Stereo algorithms. For an in-depth explanation on the functional principles please refer to Robertson/Cipolla 2009, Verhoeven 2011, Abdel-Wahab et al. 2012, Westoby et al. 2012.

4 There are multiple excellent guidelines explaining various applications of image-based modeling for documenting cultural heritage. Historic England 2017 covers the basic principles, a range of spatial scales, from aerial imagery to artefact documentation and gives an in-depth explanation on various aspects of camera equipment. Over et al. 2021 published a very detailed guide on data processing in Agisoft Metashape with excellent explanations of camera calibration, georeferencing and much more.

15
Appendix: Dossiers on selected sites

Roswitha Del Fabbro

With contributions by Youssef Kanjou / Mustafa Alnajjar / Kay Kohlmeyer

DOSSIER – SITE AS 012

Site name:

Aḫtarīn اخترين

Coordinates:

351199.71 m E; 4042274.79 m N.

Description:

Aḫtarīn is located ca. 38 kilometres north-east of Aleppo.

The *tall* is approximately 250 metres in diameter and it rises about 24 metres above the surrounding plain. It is much eroded at the base. A stone wall surrounds the *tall*. There is a partially excavated gate on the northern side. A water tower is located on the summit of the mound.

Present-day size:

ca. 3,5 ha.

The modern village extends immediately to the south and west of the *tall*. To the north-east the site is surrounded by fields (Fig. 134).

Many ancient travellers have described the site. Carsten Niebuhr (1733–1815) was a German traveller, cartographer, and explorer in the service of King Frederick V of Denmark. He was the sole survivor of the first scientific mission to Arabia, which began in 1761 and which he continued alone in the following years visiting other Near and Middle Eastern countries. On the route between Mardin and Aleppo, he thus described Aḫtarīn:

> *"Achterân scheint ein ansehnlicher Ort gewesen zu sein, jetzt aber ist es nur ein schlechtes Dorf. Die Häuser sind hier gänzlich von ungebrannten Mauersteinen gebaut, und haben ungefähr die Figur eines Zuckerhuts, eine Art Baukunst, die man nicht nur in vielen Dörfern um Haleb, sondern sogar in den Vorstädten dieser Stadt sieht. An der Nordostseite des Dorfes Achterân sieht man noch vieles von einer alten Mauer um einen Hügel, ingleichen einen alten Chan, der gewölbt und überhaupt stark gebaut ist".* (Niebuhr 1774–1778, II, p. 413 f.)

The old walls mentioned by Niebuhr are still visible nowadays and they retain a considerable elevation, in particular toward the north-west, where the structure reaches a height of about 4 metres (Fig. 135). This defensive feature surrounds the base of the archaeological mound, which is located to the north-east of the modern village. It was built using big unhewn stone blocks, arranged adopting a Cyclopean technique.

The site was described also by James Silk Buckingham, an English writer and traveller, who started his travels from Aleppo to Baghdad in May 1816. He chose the route north of Aleppo, along the river Quwayq to reach the banks of the Euphrates. The author gave a vivid description of the village of Aḫtarīn and of its *tall*, encircled by the above-mentioned ancient walls (Fig. 135):

> *"Our course had been nearly north, throughout the whole of the preceding day, but it now bent towards the north-east, in pursuing which direction we reached, in an hour after setting out, a village called Oktereen [= Aḫtarīn]. There was a smaller one, about a mile to the north of it, which bore the same name, and both were at this moment inhabited by peasants who cultivated rich corn lands on a fine red soil, and of great extent. The style of building in both of these villages, like that of the ruined ones we had already passed, was remarkable, each separate dwelling having a high pointed dome of unburnt bricks, raised on a square fabric of stone; so that, at a little distance, they resembled a cluster of beehives on square pedestals. (…) Near it [a caravanserai of*

16

Appendix: Destruction of archaeological sites in the ʿAfrīn Valley and its surroundings

Kay Kohlmeyer

In our introductory remarks on the fate of archaeological sites in the hinterland of Aleppo, we discussed two sites where the progressive destruction can be exemplified by satellite photos: Ǧindīris and ʿAyn Dāra (pp. 12–18). The former fell victim to military use, the latter to systematic looting using heavy equipment, following partial destruction in the course of 'Operation Olive Branch'. The significance of both sites is highlighted in dossiers (pp. 224–234 and pp. 273–279).

In this appendix, the focus is on further sites that came under the de facto control of the Turkish army and allied militias with 'Operation Olive Branch'. The military offensive on the ʿAfrīn district officially began on 20 January 2018 and ended on 18 March 2018 with the capture of the eponymous centre. Satellite photos from 2019 show bulldozing of sites across the country in search of antiquities. In the report submitted to the Human Rights Council of the United Nations A/HRC/45/31 of the 45th session 2020, a short paragraph is dedicated to the destruction of ʿAyn Dāra and the important Hellenistic to Byzantine city of Cyrrhus/Kyrrhos, today's Nabī Hūrī. It is not apparent from the report how extensively the other sites in the ʿAfrīn region were also demolished and how systematically this was done.

In addition to Ǧindīris and ʿAyn Dāra, another 41 sites are documented here, each with a photo taken before the destruction began, and two photos of the further course of destruction. In the near future, many of the sites will no longer be recognisable in the field, because only traces of earthmoving will be visible. In order to preserve the knowledge about them for the scientific community, they are depicted here in detail. For many of them, further information on dating is missing; for some of them, building structures are recognisable on the satellite images. The sequence is according to Chapter 4, Catalogue of sites and monuments (pp. 47–132).

Excavation with heavy machinery (cf. fig. 158 on p. 233) took place mainly in 2019 to 2021, but continued in 'profitable' sites such as Cyrrhus (Fig. 371a–c), presumably until today. Satellite photographs from 2022 show selective re-excavation taking place at a number of sites. From 2021 onwards, satellite photos show looting excavations with the same technical input in the area of 'Operation Euphrates Shield', especially in the valley of the Balīḫ, as far as it is under the de facto control of Turkey and allied militias. An important ancient metropolis, located in today's Tall Ḥammām at-Turkmān and only examined in small parts in Dutch excavations, has fallen victim to this. As of spring 2022, the destruction also extends beyond the river valley, for example to the important early Islamic settlement of Madinat al-Far, a German excavation site. The destruction of this archaeological cultural landscape is not further discussed here, as it is located in the ar-Raqqa governorate.

Not only prominent, large talls are affected by the illicit diggings, but also shallow settlement remains, sometimes located in plantations, and small ruins, whereby the size cannot be taken as an indication of the cultural-historical significance. Especially in the plantations, the procedure is easily recognisable: first, search trenches are dug between the rows of trees, which, showing ancient structures, are then extended over a wide area. Only very occasionally, as at Tall Ṭūrundah (Fig. 339a) and Tall ʿAyn Dībah (Fig. 345b), is a previous use as a military camp recognisable. A military conversion can be traced at Tall al-Ǧāǧiyah (Fig. 338a–c), where no large-scale bulldozing was carried out. The destruction with bulldozers therefore has no military-strategic background.

Fig. 336a–c: site AAS070, Tall Tabārat Zalāqah,
recording date: 10.4.2019, 28.9.2019, 10.2.2021 (Google Earth).