

LANDSCAPES OF THE DEAD (FOLLOW THE POTS PROJECT): MAPPING, SURVEY AND SITE MONITORING AT FĪFĀ JORDAN - 2013 SEASON

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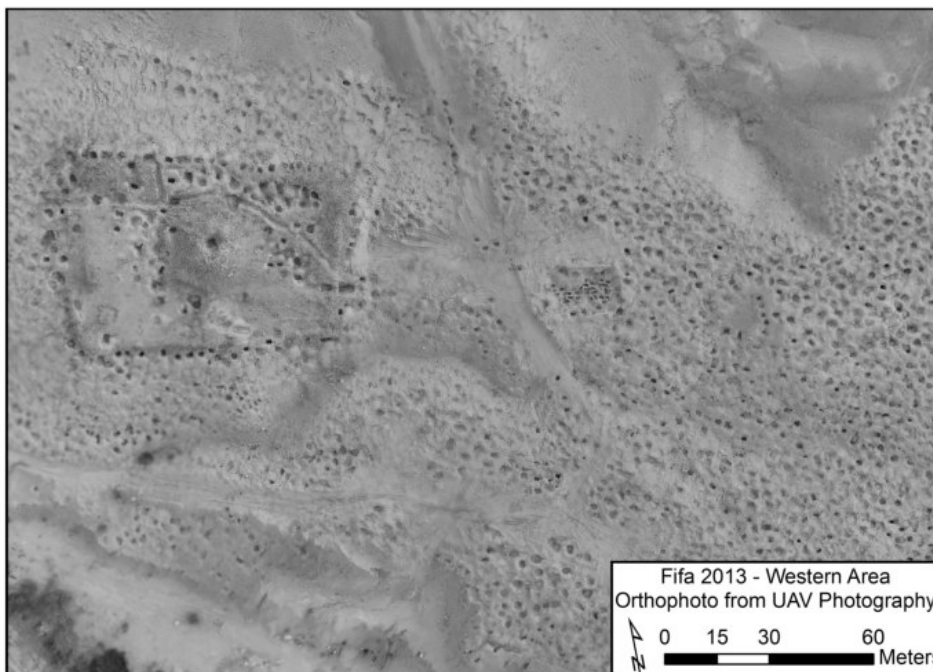
Introduction

The primary objective of the 2013 field season of the *Landscapes of the Dead Research Project at Fīfā* was to assess (through aerial photography and a pedestrian survey) the Early Bronze Age (3,500 - 2,000 BC) archaeological landscape at Fīfā in order to understand better both the ancient and modern uses of a mortuary site. During the process of formal recording in 2011, we recognized and documented ongoing threats to the site in the form of systematic looting to supply artifacts to the antiquities market. As part of a future comparative analysis of other Early Bronze Age cemeteries (Bāb adh Dhrā', Jericho and Naqa'), the 2013 season focused on providing a base line for looting at the site. By thoroughly documenting the site using Unmanned Aerial Vehicles (UAVs) we produced a composite 3D image of the site (see Fig. 1), which we will use as a comparison

in future seasons to assess cultural and natural transformations in the landscape. This was the first of a planned five-season project of site monitoring of this looted landscape. In addition to mapping and recording the site, we are interested in assessing potential cultural heritage protection strategies for safeguarding the past. Through aerial photography and pedestrian survey the change over time of this archaeological landscape was assessed. The main research goals of the *Landscapes of the Dead Project* are: (1) To obtain quantitative data on the scale and intensity of looting at Fīfā using innovative aerial photography, and (2) To continue recording and mapping the looted landscape of Fīfā.

Background

Located approximately 30 kilometers south of the southern shore of the Dead Sea, the

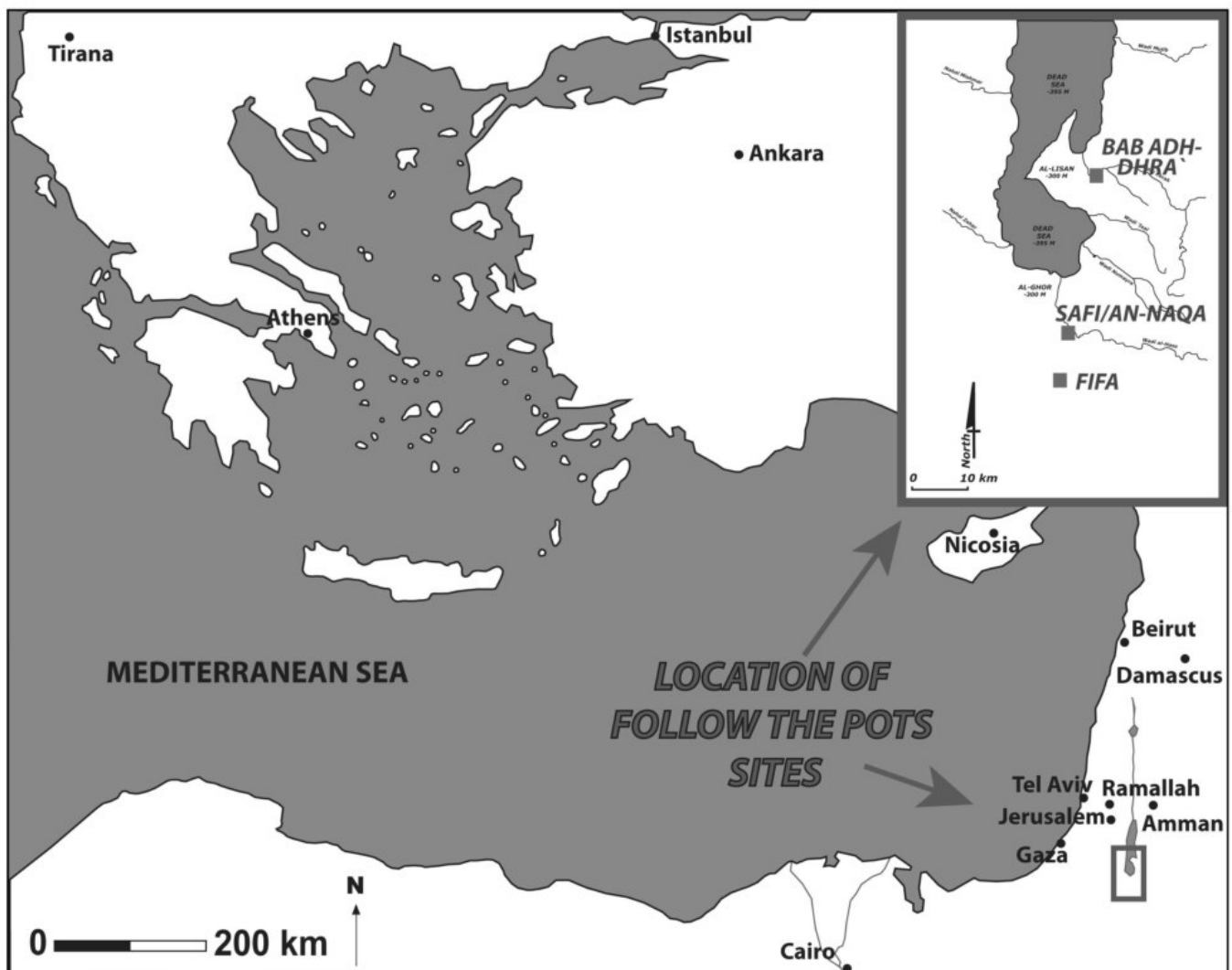


1. 3D ortho photograph of the western area of Fīfā, 2013.

cemetery is situated to the north of Wādī Fīfā on a low east - west ridge overlooking Ghawr Fīfā to the west (see Fig. 2). Also west of the site is the modern town of Fīfā. At the western base of the cemetery promontory is a modern cemetery. Early evidence for the site comes from Frank, who in 1932 referred to an Early Bronze (EB) scatter at Fīfā (Frank 1934). During his survey of Transjordan in 1936, Nelson Glueck also mentioned the site (Glueck 1937). As part of their *Survey of the Southeastern Plain of the Dead Sea in 1973* Walter Rast and R. Thomas Schaub (1974) recorded Early Bronze Age, Iron II, Roman and later Islamic period pottery at the site. During this survey Rast and Schaub noted similarities in setting with the Early Bronze Age town site and cemetery at Bāb adh Dhrā‘,

which led them to suggest that Fīfā was one of a series of Early Bronze Age settlements along the south-east Dead Sea plain. They reported looting at the site and disturbances of the associated material culture from the tombs at this cemetery. This is the earliest mention we have of archaeological site destruction at Fīfā.

Subsequent visits by Rast and Schaub and identifications by *the Southern Ghors and Northeast Arabah Archaeological Survey* (MacDonald *et al.* 1992) raised doubts about the presence of an EB walled settlement at the site. Based on the distribution and concentration of Iron Age pottery, MacDonald and colleagues (1992) redesignated the walled structure as Iron II, which they named Site 75. The EB cemetery was named Site 76; Neolithic and Chalcolithic



2. Map of the Follow the Pots field sites.

ceramics were noted in the area and looting of the site was confirmed (MacDonald *et al.* 1992).

The results of the MacDonald survey were instrumental in arriving at goals for the 1989 - 1990 systematic archaeological excavations carried out at Fīfā by Rast and Schaub. The first objective of the three-week season was to explore and determine the extent of the cemetery. Rast and Schaub thought that data recovered from Fīfā, taken in consideration with those from Bāb adh Dhrā', would contribute to ongoing discussions surrounding the transition from the Chalcolithic to Early Bronze Age. A second goal was to determine the occupational history of the walled area - conclusively dating the area to the Early Bronze or Iron Age.

In three trenches Rast and Schaub exposed eighteen tombs, excavating eleven. All of the tombs were burials in stone-lined cists with slab roof coverings (see Fig. 3). Typically apsidal, the average size of the tombs is 1.66 m, about 70 - 80 cm in width and about 1 m deep. Based on a survey of the looted tombs, in our 2011 season we determined that there were three different types of tombs: slab-lined (see Fig. 4), boulder-lined (see Fig. 5) and slab- and *wadi* cobble-lined (see Fig. 6), confirming some of the findings of Rast and Schaub in 1990. Between one and six

individuals (combination of subadults and adults) were interred in each of the excavated tombs. Rast and Schaub (1990) estimated a density of six tombs in a 50 sq. m area. If this estimate is consistent across the site, Fīfā may rival Bāb adh Dhrā' in cemetery size. Fīfā, however, is unique in that it contains only EB I. As an element of the *Landscapes of the Dead* project, we are interested in determining the extent of the site through pedestrian and aerial survey.

In response to reports of increased looting and destruction at the site, Dr Mohammed Najjar excavated an area of 20 m x 10 m (approx. 177.5 sq. m) in 2001 on behalf of the Department of Antiquities, uncovering 50 graves.

In the 2011 season of the *Follow the Pots Research Project* (FTP) (co-directed by Morag M. Kersel and Meredith S. Chesson) the team (Morag M. Kersel, Isabelle Ruben and Hugh Barnes) surveyed and mapped the extent of the cemetery using a handheld GPS unit and a total station. Data from previous excavations and visits to the site, in combination with aerial photographs, indicate that there are thousands of looters' pits at the site, many of which have destroyed stone-lined cist tombs containing secondary burials, ceramic and stone vessels, shell bracelets, stone mace heads and beads.



3. Cross-section of a cobble-lined cist tomb with slab covering.



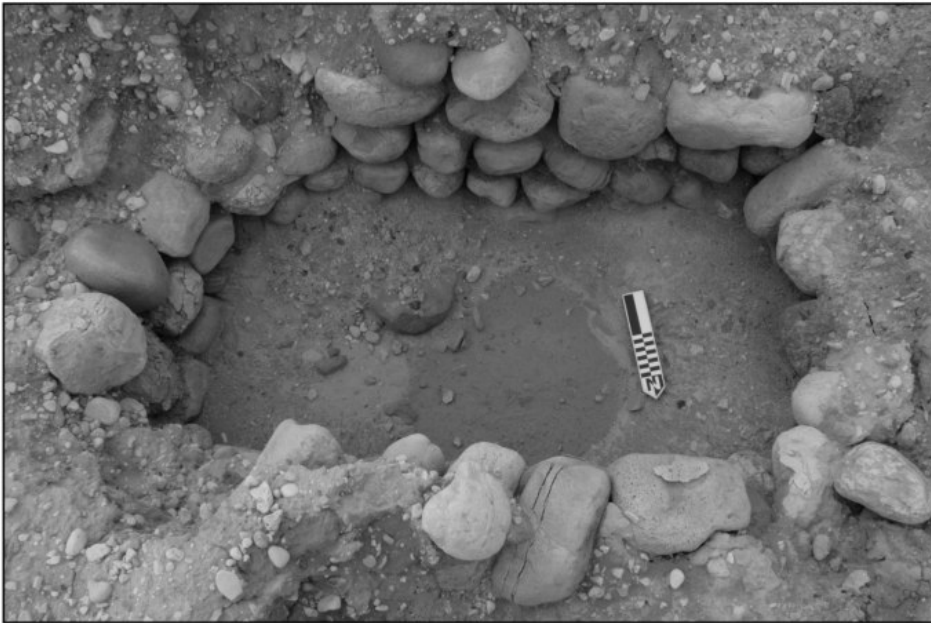
4. Slab-lined cist tomb, Fīfā.



5. Boulder-lined cist tomb, Fīfā.

In 2011 the site resembled a moonscape, with looters' trenches extending across rolling hills as far as the eye could see. The ground is covered with spoil heaps of dirt, human skeletal remains and broken artifacts. Such a scale of destruction makes total documentation of all looters' pits impossible, but we addressed the salient question posed by Webb and Frankel (2009), which challenges conventional archaeological investigations by asking: Is a cemetery that has been robbed and pillaged for generations

worthy of systematic research? Ground-truthing of the looted Early Bronze Age IA cemetery at Fīfā in 2011 demonstrated that looted cemeteries are crucial to a holistic methodical investigation of an archaeological landscape. These aspects have been discussed in publication (see Kersel and Chesson 2013a; Kersel and Chesson 2013b). In December of 2013 we launched an Arabic / English website (www.followthepotsproject.org) in order to disseminate the results of our research more effectively.



6. Cobble-lined cist tomb, Fīfā.

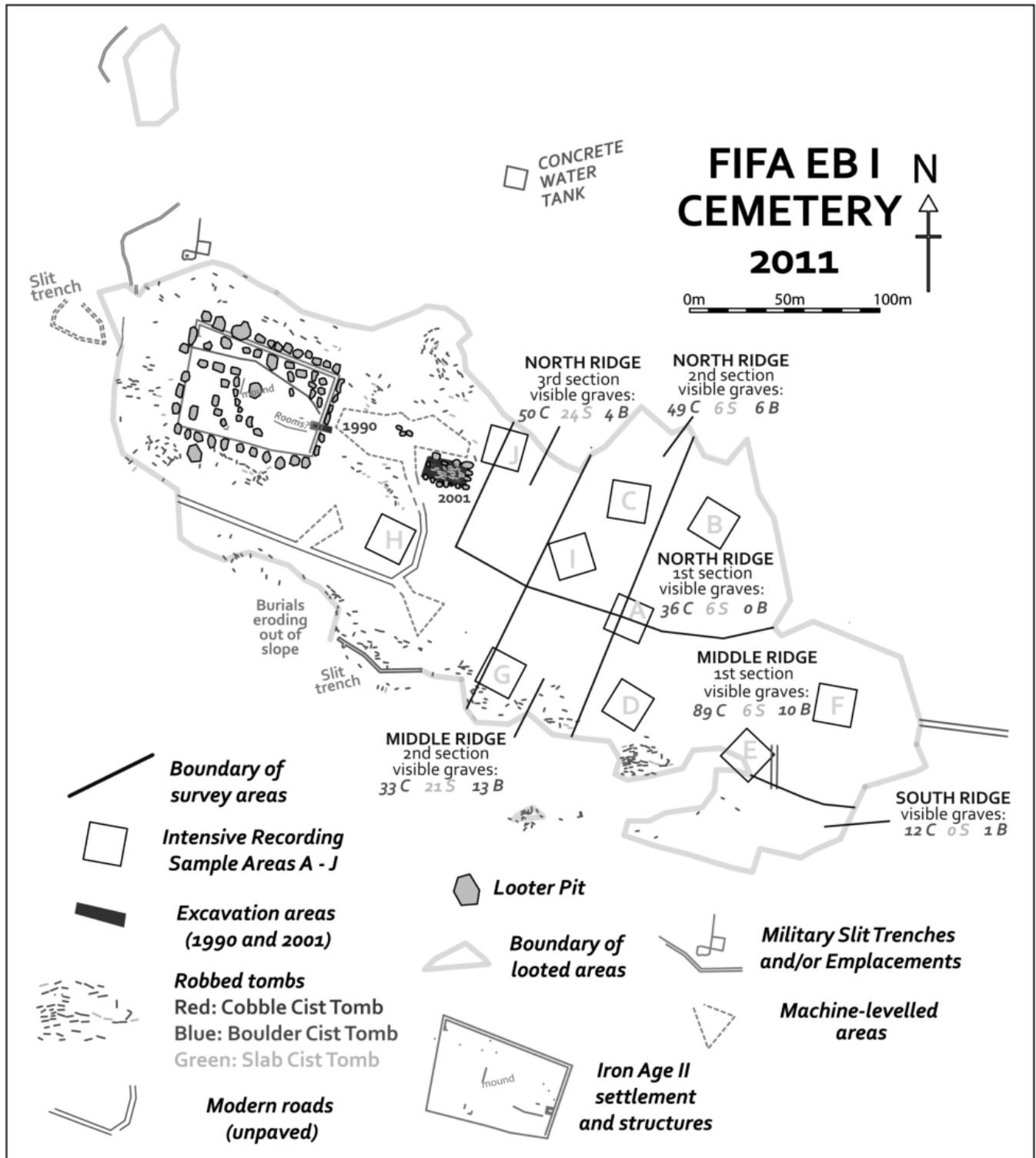
Field Work Strategy (Methods)

Two components of fieldwork at Fīfā were undertaken in January - February 2011. The first included intensive surface mapping, documenting the extent of the cemetery using a GPS and total station to record the terrain. The second involved a sampling strategy of recording looters' pits and visible tombs. Although not part of the original scope of the project, this second aspect tested the recent proposal of Contreras and Brodie (2010) to use Google Earth to record looting. Contreras and Brodie (2010: 109) assert, "There is no guarantee that all of the looting pits penetrated burial chambers, though it seems most likely that pitted areas do represent looted tombs". In ground-truthing the cemetery, FTP investigated the assumption that every pit equals a successfully looted tomb. As a result FTP recorded and quantified evidence of archaeological site looting in a systematic fashion, providing a more accurate account of the destruction of this ancient landscape. The results indicated that, in fact, every hole does **not** equal a tomb. This demonstrates that Google Earth may be useful, but ground-truthing is required for an accurate assessment. The initial mapping of the site indicates an estimated area of 64,000 sq. m for the cemetery (see Fig. 7). Our

mapping recorded over 800 graves in the looted landscape, although thousands more exist, yet to be looted or excavated. In the examination of back dirt piles from looting we were able to determine that there were different looting episodes. This background information and map allowed us to formulate the methodology and goals for the five-year (2013-2018) *Landscapes of the Dead Project*.

Methodology for the Landscapes of the Dead Project, 2013

Aerial photography. The primary element of this field project is the use of aerial photography as a method of site assessment and monitoring. The advantages of gaining a good aerial view of the ground are well established and appreciated by archaeologists; a high viewpoint permits a better appreciation of fine details and their spatial relationships within the wider site context. Rather than relying on satellite images or Google Earth for aerial images of Fīfā, which provide insufficient resolution for identifying site details, multiple images of the site were taken using a remote controlled plane. Aerial photography from UAVs is one low-cost, inclusive, environmentally friendly alternative to more expensive satellite imagery and



7. Comprehensive plan of Fīfā, 2011.

traditional aerial photography (Verhoeven 2009). *Site recording.* This research builds on and expands the 2011 preliminary survey of the site, which embarked on a more intensive recording of the individual graves by taking two measurements when possible, one at each end of

the grave in order to show its orientation (see Fig. 7 - map of the site). During this season we took a series of images of the tombs exposed during the 2001 systematic excavations of M. Najjar and the Department of Antiquities in order to create 3D models of the tomb types. This work enhances

the existing database of tomb types, established during the 2011 Follow the Pots survey season.

Preliminary Results

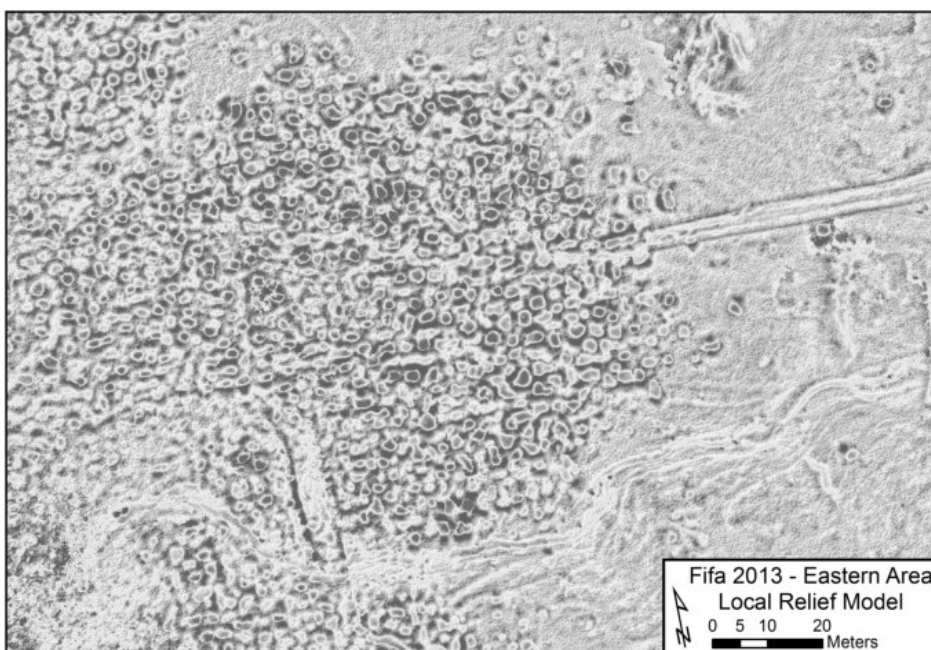
A small fixed wing UAV provided a platform for stable, low elevation aerial photography, making it possible to both document looting and destruction at Fīfā as well as generate spatial data for digital mapping (Fig. 8). Aerial survey at the site utilized novel photogrammetric image post-processing to produce high-resolution digital elevation models (DEMs) of the site. A chronological assessment of looting at Fīfā will assist the identification of new looter's pits and determinations of whether any of the looter's holes had been revisited, whether or not the looting was recent (indicated by fresh earth) and whether there is a discernible difference in looting episodes. The continued mapping and ground-truthing of the landscape during the 2013 season supported our conclusion that looters are revisiting earlier looter's holes and that there is ongoing, recent looting. This season of aerial site monitoring was the first of a five-year plan to revisit the site at the same time each year to investigate change over time, using high resolution, spatially accurate 3D models, and to assist the Jordanian Department of Antiquities' assessment of anti-looting campaigns

and outreach programs.

Incidents of Looting

During our second day on the site (15 June 2013), in the early morning, we placed plastic plates at 50 m intervals (using a handheld GPS) to be used in georectifying the images in order to create 3D plans and a comprehensive base map of the area. At approximately 10:00am we headed in to Ghawr aṣ-Ṣāfī to get cement and rebar in order to establish a datum for future research. As we gathered our equipment and prepared to leave the site we noticed a couple of men on the far eastern edge of the site; one waved and said good morning. We started back toward the car and as we left we noticed something unusual on the south-eastern edge of the main wadi: flying, loose dirt. The two men were digging a tomb. We decided to leave our equipment and assess the situation. They appeared to be 're-excavating' an old looter's pit and had recovered three vessels (two Ṣāfī cups; one juglet) (see Fig. 9). The looters were using a large pick, a shovel, a long metal pry bar for leverage and two screwdrivers to excavate. We asked if we could take some images; they said yes. They asked us if we were also digging and if we wanted to buy a pot.

Our DoA representative, Jihad Darweesh,



8. Local relief model of the eastern area of Fīfā, 2013.



9. Confiscated looted vessels, Fīfā 2013.

called the local police who came to arrest the two looters. Jihad Darweesh confiscated the pots, which will be used as evidence in the courts. Later we documented and recorded the looted area. After a comprehensive pedestrian survey of the site, we concluded that looters in the area are revisiting tombs that have been previously looted. They are using a technique where rather than finding a tomb and digging from the top down, they are digging from the side at the bottom of an already looted tomb. The close proximity of tombs (sharing walls; abutting each other [as demonstrated by the Najjar / DoA excavations in 2001]) results in the successful acquisition of pots in this manner - digging from one tomb into an adjacent one. This method requires less work than excavating from the top down, especially when adjacent tombs are covered by previous spoil heaps that would need to be moved first.

Concluding Remarks and Future Work

UAV-based aerial photography is a low-cost, inclusive, environmentally friendly alternative to more expensive satellite imagery. A remote controlled plane, which allows for stable, low

elevation aerial photographs, is an efficient tool for recording looting and site destruction at Fīfā. It is clear from the ongoing looting that site guards are required to keep the looters at bay. If Jihad Darweesh had not been working with us in the field, the looting incident on 15 June 2013 would have gone unreported. Additional funds from the DoA would be very helpful in assisting local inspectors to monitor looting at the various sites under their jurisdiction. Looting is harmful to our understanding of the past and we should all be assisting in the monitoring and recording of looted landscapes.

The myriad consequences of the illegal excavation at Fīfā on the interpretation of changing mortuary practices and social differentiation may never be known and valuable data has been and continues to be lost, distorting our understanding of Early Bronze Age burial customs. Damage caused by looting places severe limitations on attempts to describe the orientation and original condition of the tomb chambers accurately and document the extent of the cemetery site, creating *lacunae* in the archaeological record. This project will make a significant contribution to our understanding

of the genesis of complex societies during the Early Bronze Age period of the southern Levant, while assessing the efficacy of aerial photography as a means of monitoring archaeological site destruction.

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