

Endangered Archaeology in the Middle East and North Africa.

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Abstract:

The **Endangered Archaeology in the Middle East and North Africa** (EAMENA) project is discovering, documenting and recording archaeological sites and assessing threats to these sites, using satellite imagery and aerial photographs. An open-access web-based information system (database) has been designed to allow basic information about each site, and the significant threats to them, to be easily accessible for anyone interested in preserving archaeological sites in the region.

The biggest threats to these archaeological sites are not just conflict and looting but also agricultural activities, road and dam building, and the huge increase in village, town and urban expansion, as a result of the quickly rising populations.

The paper will explore issues of identity, the value of the cultural heritage to international, national and local communities, appropriate preservation strategies, training needs and issues around sharing information about archaeological sites in a responsible way.

Introduction.

Archaeological sites across the Middle East and North Africa are at risk from a range of threats: intensification of agriculture; population growth and the concomitant expansion of villages, towns, and cities; industrial developments, dam, and road building; looting and the illicit traffic of artefacts; warfare and deliberate and targeted destruction of heritage for religious or ideological reasons. Moreover, in many countries the pace of change is accelerating either because the economy is growing, or because there is conflict. These conflicts not only affect the individual countries where they are fought, but also neighbouring countries with the movement of refugees. This is happening in Iraq, Libya, Syria, Yemen and, to an extent, Egypt and Tunisia. The situation is fluid and is unlikely to improve in the short term, and may become worse unless the conflicts are resolved soon, which is unlikely.

Discussions about 'endangered archaeology' in the Middle East and North Africa have a long pedigree. In Jordan, Nelson Glueck lamented the growth of modern villages over

ancient ruins in the 1930s (Glueck 1939). Discussions to develop this project on 'endangered archaeology' began in 2014 and built on previous archaeological surveys in Jordan, especially by Kennedy and Bewley (2004) and a pilot-study in Saudi Arabia by Kennedy and Bishop (2011: 1284–93). Previous work demonstrated that the very rich archaeological resource of the Middle East was under enormous pressure, from a variety of agents (Kennedy and Bewley 2010).

Similarly fieldwork conducted in North Africa by Mattingly and colleagues at the University of Leicester demonstrated that the project should also include that region (Mattingly 2013; Mattingly and Sterry 2013).

The Endangered Archaeology in the Middle East and North Africa (EAMENA) project began in January 2015, generously supported by the Arcadia Fund (www.arcadiahfund.org). The project is based in the School of Archaeology at Oxford University in partnership with the School of Archaeology and Ancient History at the University of Leicester under the supervision of Professor D. Mattingly, and the Department of Archaeology, University of Durham under the supervision of Professor Graham Phillip. The project stretches from Mauretania to Iran (<http://eamena.arch.ox.ac.uk>).

The approach for the project is what might be termed 'rapid archaeological survey' involving the examination of satellite imagery, historical aerial photographs, and other sources to provide the location and brief description of each site and an assessment of threat. It is a first, but major, step in creating and then disseminating information about archaeology, which is at risk or 'endangered'. The intention is that this will help those with the responsibility, or desire, in their respective countries, to preserve and conserve those archaeological sites that need better protection, so that future generations can study, enjoy, and profit from them.

Although the world's media have recently focused on the shocking and headline-grabbing events in Iraq and Syria in 2015 (for example at Hatra and Nimrud in Iraq, and

Palmyra in Syria), similar incidents of wanton destruction have also occurred much more widely across the MENA region. This includes the destruction of many Islamic monuments alongside the non-Islamic heritage; the latter has received more media attention in the West.

Methodology

Unlike much of western Europe where many archaeological sites have been ploughed, and some of the remains are buried, largely invisible beneath the soil, in the arid or semi- arid regions of the Middle East and North Africa many sites remain visible on the surface and are made of stone or earth, rendering them detectable by means of aerial photography and satellite imagery. The vast majority of the sites we examine have not been recorded and are largely unknown to the relevant authorities in the countries concerned. The use of satellite and aerial imagery is especially important for those countries where access on the ground is either impossible or severely restricted. The methodology for discovering and obtaining information about endangered sites consists of three elements:

1. the systematic analysis and interpretation of satellite and air-photo images utilizing established techniques and in conjunction with regional maps and historical aerial photographs;
2. the creation of individual site records (using internationally recognized data standards) and building on work and procedures developed by the APAAME project (www.apaame.org) and others;
3. monitoring the condition of sites using a combination of remotely-sensed data and ground verification to provide appropriate documentation of the status of the visible remains so that their management can be improved.

One of the main aims of the project is to create an open access recording system. This database has been created using the Arches open-source software (version 3),

developed by the Getty Conservation Institute and the World Monuments Fund, as an open source data management platform for the heritage field (Myers 2016: 102).). The policy is for open access to the database, i.e. it is free for non-commercial use by *bona fide* archaeologists and interested parties. As with any data concerning archaeological sites there will be confidential or private information that cannot be shared, so levels of access are being developed and will be implemented during 2017.

Preliminary Results.

The Aerial Archaeology in Jordan project and the archive (www.apaame.org) was one of the foundations and test beds for developing the EAMENA project. Using a combination of historical aerial imagery (the 1953 Hunting Aerial Survey in particular), Google Earth imagery, and an active aerial reconnaissance programme (for over 19 years, 1997 to 2016) thousands of sites have been photographed and recorded in Jordan; many are new discoveries. The overwhelming impression from this work has been the rapidly changing nature of the landscape. The pace of change is also accelerating, with a huge and recent rise in population in Jordan, the demand for more land for agriculture and for road and house building is having a direct and negative impact on important archaeological sites.

The focus of the EAMENA project in Jordan has, so far, been on recent road building; some years ago we photographed as much as we could of the planned southern by-pass of Amman (Kennedy and Bewley 2010). More recently we were alerted to the intended construction of a by-pass for the Azraq; and in 2014 we saw (by chance) the beginnings of a by-pass road for Irbid, and therefore made this a focus for our aerial reconnaissance in 2015 (see www.apaame.org).

For the EAMENA project, however, we wanted to try to begin surveys in advance of any construction work starting. After consultation with the Department of Antiquities we examined a corridor of land through which the Madaba ring road would be constructed. In total, 141 potential archaeological sites were recorded during this rapid investigation.

Of these, 41 are site features or sub-sites, mostly of the city of Madaba (29) and Khirbet al-Mukhayyat (6). As many as eleven sites will be directly affected by the ring road and development in its immediate vicinity (within a buffer zone of 500 m on either side of it). Many of the sites are 'new' to the record; of the 141 sites examined, 86 do not have records in the MEGA-Jordan database (MEGAJORDAN 2017). We provided a report for the Jordanian Department of Antiquities to enable them to develop mitigation strategies in advance of the construction of this road.

One of the key objectives of the project is to work with the national agencies in all the countries to effect the transfer of information and data collected by the project (primarily the EAMENA database) for their use, if they wish it, as a record of their archaeological sites. An individual country will not need to have information from other countries, so we are devising ways of providing nationally-specific databases. The first country this is likely to become a reality for is Yemen but we are in detailed negotiations with a number of other countries too. Systematic investigation of over 82,000 sq km of Yemen resulted in the recording of over 42,000 sites (Banks et al. in press). While many of them appear to be in good condition, there have been some notable examples of destruction caused as a result of human action: conflict, agricultural development, construction, and looting, and there is also evidence of destruction by natural events (e.g. flash flooding). Among the sites affected by the ongoing conflict are the city wall and temple of Nakrah at Baraqish, the Dhamar Regional Museum, the al-Qahira fortress in Ta'izz, and the Ma'rib dam (Bewley et al. 2015: 923). An international initiative coordinated by UNESCO (Doha office) is aiming to build a national inventory of archaeological sites for Yemen's General Organisation of Antiquities and Museums (GOAM). EAMENA is a major partner to this initiative, to which it has been contributing not only data, but also the technical expertise to develop the underlying heritage management platform on which this inventory will be run (Zerbini pers. comm.). Similarly the project's partnership with the University of Durham is working on a similar

approach for a national database for Syria, in association with SHIRIN International (SHIRIN 2017).

The database is also a basis for research, especially for those interested in the wider region, beyond national boundaries. Regional studies will also be significant in the wider educational aspect of the project's work, to increase understanding of the past and the future preservation of local archaeological remains. At the time of writing the total number of records in the database is 154,312; with each record representing a definable archaeological site; for larger, more complex, sites there will be multiple records, for a single burial cairn for example, only one. The definition of an archaeological site is an arbitrary one, as we know that what we can see from the satellite imagery is a partial view. Each site has a record that shows (at least) its location, function (when possible from the evidence that the interpreter has), overall site morphology, shape, and cultural period (if this can be interpreted from the evidence available). Each record has certain values attached to it; for example there are a number of 'certainty' scores (high, medium or low) for the interpretations (date, function and condition). There are also fields in the records for bibliographical references. The records are created as the product of an interpretative process and require testing by further research, in the air, in the field; possibly by ourselves, but more likely by those living and working in the region. When assessing the condition there are six categories from 'good' to 'destroyed', allowing for more subtle analyses to be carried out and for future monitoring of the sites to show a change through time.

In serving the EAMENA project Libya has been one of the countries where there have been a number of archaeological surveys that provide very good sources of information and evidence of the nature and types of archaeological sites (Barker et al. 1996a and b; Mattingly 2013, 2004). This information is being incorporated into the database, and the team have also examined areas not previously surveyed. In one example of the coastal zone of Zliten, in the Murqub District of Libya, there are 278 sites (in an area of

c. 600 sq. km.), mainly buildings and enclosures with 170 (61%) in a good condition, 50 (18%) were assessed as fair, 24 (9%) as poor, 15 (5%) as bad, and 16 (5.5%) as completely destroyed (Rayne et al. forthcoming). Of the Libyan data so far collected, 16 sites have since been destroyed. This demonstrates the project database can act as a useful tool for assessing the state of archaeological sites, and one which will be of enormous potential use in assessing post-conflict scenarios.

Conclusions

The EAMENA project is still in its data collection phase, and further research will be required to refine these results, but they indicate that human action in the landscape (urban and rural), for a variety of reasons, is the major cause of damage. As archaeologists we are responsible for protecting the past from deliberate destruction, so that future generations, if they so wish, can understand and enjoy it. Therefore making information available to as many people as possible about their past is a key task if we are to preserve even a small fraction of the archaeology which is all around us. Recent research in the UK has shown that visiting sites and heritage tourism is a £12.4bn (\$10.4bn) a year industry, and this makes a significant contribution to the economy (Bewley and Maeer 2013; Heritage Lottery Fund 2010). In many of the MENA countries this is not going to be a factor until the conflicts have ceased; even in Jordan the tourism industry had reduced by up to 50%. However, the future potential of heritage tourism in purely economic terms is clearly immense, and needs to be considered in all post conflict heritage discussions.

The philosophy underlying this project is that by discovering and recording archaeological sites the information thus created will provide for better conservation and protection of the region's heritage. The responsibility for protecting sites lies with the national or regional authorities in each country and we are working with as many of the Department of Antiquities as we can to target areas within each country, which may be under threat from planned infrastructure projects, so as to mitigate the possible

damage. The majority of the sites we record have not been systematically recorded before; their destruction is irreversible. This project is therefore a-once-in-a-generation opportunity. We are acutely aware that only a small sample of sites will be protected but we are, at least, improving the knowledge base so that informed decisions can be made. Only by knowing the nature of the threats to ancient sites can archaeologists advise national authorities to plan how to salvage a vital part of our shared human heritage. The preservation of the archaeological remains should not take priority over the lives of those having to live in areas of conflict. Once the conflicts do end, the destruction of the archaeological sites should diminish, and the preservation and conservation of those sites that have been affected can be improved. It is important that for the post-conflict era, however far in the future that is, the rebuilding phase does not destroy the fragile heritage any further. This a key reason why the EAMENA project and others too (Casana 2015) have an important role to play in not only recording the archaeological sites as they are today, but also providing this information in a usable form for those with the responsibility for their future protection in each country.

Understanding why people might wish to destroy the remains of the past, because it represents a particular view of their society (which they wish to deny or eradicate) is a key to the future; education concerning cultural heritage, and an awareness of the vital role it can play in a post-conflict situation is an important element of the project's future plans. With a grant from the Cultural Protection Fund the EAMENA project will be undertaking training courses in Beirut, Tunis and Amman for local heritage professionals in the EAMENA methodology from six countries: Jordan, Lebanon, Libya, Palestine, Syria and Tunisia. In addition there will be touring exhibitions and workshops for the decision makers, officials, and politicians in local, regional and national governments to raise awareness of the existence of the cultural heritage under threat. These workshops will also discuss the future protection of archaeological sites. This approach builds on the first two tiers of the four-tier approach (Stone 2013,173) that argues for long-term awareness training (tier 1) and specific pre-deployment training (tier 2). Although these

tiers are aimed at military involvement in particular, the relevance here is that each region, each country, will have its specific needs, from a conflict or non-conflict perspective, in terms of future training. Any training in protecting cultural property, at any point (pre- or post-conflict) can only be encouraged.

We may not be able to prevent destruction in the future but we may be able to adapt the way sites are presented so they are seen to represent a borderless and common past rather than an interpretation of the past to promote either a disputed national identity or a specific ideology. Unless we understand the nature of our past and our collective human heritage, we run the risk of losing an untapped, invaluable resource. There are many who value the past at a number of levels but it will never compete when the basics of human survival are at stake – food, water and shelter. Therefore we do have to aim to prevent the loss of cultural heritage, and be prepared, anywhere in the world, as we do not know where the next conflict will be. Many archaeological sites have only ever been recorded from the air, or from a satellite, and although this is no substitute for a more detailed survey, it is often all that exists. Therefore using the information gained from these archaeological surveys is a crucial step in understanding the nature of the archaeological resource in any country and region. Without this information the future preservation and presentation of archaeological sites and landscapes will be much harder.

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