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Management Plan

For the Protection of the Site of Iunca

Impact Case Study

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1 INTRODUCTION

1.1 Scope of document

1.1.1 During a period of three years (2017-19) the *Training in Action* project (TinA) was developed to provide an integrated approach to training and capacity building that responds to the problems and specific needs of Libyan and Tunisian heritage organisations. The project worked with a number of Libyan and Tunisian professionals, providing training in documentation and the management of archaeological sites. Each individual was taught a series of integrated skills from the disciplines of archaeology, conservation and heritage studies (Leone *et al* 2020). The project was funded by the Cultural Protection Fund (CPF), by the British Council partnership with the Department for Digital, Culture, Media and Sport.

1.1.2 *Training in Action* has been led by Professor Anna Leone from Durham University in collaboration with the Institut National du Patrimoine de Tunisie and the Department of Antiquities of Libya. Drawing on her long-running published research expertise on landscapes, buildings and portable spolia (Leone 2007, 2013, 2018), Leone co-developed this research training initiative with CPF funding. She has met an immediate need for training heritage staff that work on the ground to protect heritage assets in challenging circumstances and in doing so implemented a programme detailed here that has significantly advanced the protection measures for the internationally important site of Iunca.

1.1.3 The project trained 72 staff from respective Libyan and Tunisian national heritage organisations in documentation techniques, preventative conservation and heritage. It also sought to serve as a replicable model for Libyan and Tunisian heritage professionals to train new staff, creating a sustainable cultural protection model in turn. The project provided training in GIS and survey techniques, including app development, 3D modelling and geophysical survey; site monument and object recording and preventative conservation and heritage management on site and in museums.

1.1.4 In order to carry out the training the site of Iunca was chosen. The training activities took place at Iunca within the framework of the Agreement between Durham University (Prof. Anna Leone) and the Institut National di Patrimoine (Dr Ammar Othman).

1.1.5 This paper outlines the methodology employed to produce a preservation plan for the site of Iunca. The results are based upon the research data collected during the TinA project. This document has been created collaboratively by the Institut National du Patrimoine (INP) (Dr Ammar Othman) and Durham University (Prof. Anna Leone). The organization, and significance of the archaeological remains has been discussed by a team of archaeologists from the two institutions in order to enhance the protection of the site. This document indicates the work conducted so far and the results of the activities in order of priority for the long-term maintenance of the site of Iunca.

1.2 The site

1.2.1 The site of Iunca (Trousset 2003) is located 45 km south of Sfax on the southern coast of Tunisia (**Figure 1**).

***Figure 1**: Overview of the location of the training site of Iunca within Tunisia and the region of Sfax*

1.2.2 Although little known, there is evidence for a multi-period phase of occupation from the pre-Roman to Medieval and modern period and is similar to much of the archaeology along the North-African coastline. The site has several extant archaeological remains with the most obvious and well-known monument; a large fort of debated date (Othman 2004). There are also three important Christian churches, excavated during the French colonial period (in 1920 and in 1950). The churches were investigated without using stratigraphic methodologies, the mosaics were stripped, and the churches were then abandoned. The fort is still standing, and it was probably reused in the Ottoman period. It is evident that a portion of the monument was previously excavated however there is are no records associated with this intervention. A further two areas located inside the fort have also been excavated but unrecorded. Records from the INP indicate that in the 1980s the mosque in one corner of the fort was excavated. During the TinA fieldwork a team conducted a survey and study of the phases of construction of the fort. This was based upon the building techniques employed and it identified 8 phases of use and reuse. The first phase dated certainly to the Late Roman/Byzantine period, but it is not possible to identify what was the nature of this early structure with the current collected data. Further investigation would be required to identify whether the first phase of construction was a fort or a rampart (see grey literature – Utrero & Murillo 2019). Near the fort is a marabout still in contemporary use for festivities and worship (Othman 2004). All these monuments are located amidst an unexposed Roman city. The apparent lack of standing structures today is due to the encroachment of modern agricultural activities carried out by local landowners in the form of extensive olive groves.

1.2.3 A survey was conducted in 2016 and the major buildings were recorded, as part of the doctoral research of Nabil Belmabrouk (Belmabrouk 2016). In 2017 when the work started the site was significantly under threat because the full extent of the site's perimeter had not

been established. There was no demarcation or protection of significant monuments within the site. No signage, condition assessments or management plans had been created to preserve the site. Another aspect of the problem is that the site of Iunca is potentially very large and difficult to manage and oversee. Evidence of further risks such as looting of the archaeological monuments were also identified at this initial stage.

2 METHODOLOGY

2.1.1 During the training activities a basic element of the methodology set in place by Historical England for the definition of archaeological sites and landscapes was employed. The structure of this report follows these basic outlines.

2.2 Introduction

2.2.1 This section describes the methodology to be used in the assessment of the likely significant effects upon heritage assets at the historic environment affected by the impact of construction, agriculture, looting and erosion.

2.2.2 Heritage assets are defined as: “A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning and preservation decisions”.

2.2.3 Historic environments can be defined as: “All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscapes and planted or managed flora” (NPPF Annex 2 Glossary 2012).

2.2.4 The historic environment is generally and most easily divided into three key areas as follows:

- archaeological and palaeo-environmental remains including geological deposits that may contain evidence of the human past;
- historic landscapes; and
- historic buildings and the historic built environment.

2.2.5 Since this document has been written for the use of the INP, the concept of historic environments has been adapted to the Tunisian legislation and therefore in particular the palaeo-environmental and geological deposits are not the core of this plan. However, there is interest by the INP to implement this aspect in the future, for this reason one of the recommendations is to investigate the coastline of the settlement and evaluate the impact of the coastal change through time at the site.

3 ESTABLISHING THE BASELINE

3.1.1 A baseline of all known heritage assets will be collected from the following information:

- Buildings, structures and monuments which are of heritage significance
- Buildings identified from desk-based research or fieldwork.
- Known historic settlements including those identified as being of archaeological interest

3.1.2 Baseline data sources can include:

- Historic environment data, held by local planning authorities (Institut National du Patrimoine)
- Aerial photographs and satellite images held by, local authorities, and other appropriate repositories
- geological mapping and borehole information
- documentary, cartographic and other resources as deposited within local studies libraries, county and national records libraries and archives, including historic Ordnance Survey maps, tithe, estate and other maps, and other relevant primary sources
- readily available published and unpublished sources, building surveys and gazetteers

3.1.3 Supplementary data should also include:

- Date from preliminary works such as boreholes or test pits
- Data from a programme of non-intrusive survey, including geophysical survey
- Data from high resolution satellite imagery and aerial imagery
- Data from previous intrusive studies, for example excavation and building survey
- Data in respect of the zone of theoretical visibility as identified by the landscape and visual assessment
- Data obtained through site visits and walkover survey

3.2 Study Area

3.2.1 The site of Iunca will be the focus of the study area for data gathering to identify impacts upon heritage assets within the site, plus 2 km either side of the outer buffer zone.

3.2.2 The setting of heritage assets within the site of Iunca and within the 2 km study area will be assessed and geospatially located[1].

3.3 Significance Criteria

3.3.1 The significance of a heritage asset is defined as 'the value of a heritage asset to this and future generations because of its interest; that interest may be archaeological, architectural, artistic or historic. Significance derives not from the heritage asset's physical presence, but also from it setting.

3.3.2 Historic England defines 'significance' and 'heritage values' as being a collective term for the sum of all the heritage values attributed to a place, be it building, an archaeological site, or a larger historic area such as a whole landscape (Historic England, 2008). The same definition has been outlined by the INP Tunisie for the creation of the Atlas des monuments Historiques de la Tunisie (see https://journals.openedition.org/insitu/1744). For a definition of the system of heritage protection existing in Tunisia see https://books.openedition.org/irmc/691 (Le législation patrimoniale tunisienne). In

[1] For site definition in Tunisia according to the regulation of the Institut National du Patrimoine see Loi n.94-35 du 24 Février 1994, relative au code du Patrimoine archéologique, historique et des Arts traditionels.

assessing the significance of an asset, it is necessary to consider the heritage values which contribute to overall significance; comprising evidential, historical, aesthetic and communal values. UNESCO unit 6 – Significance assessment indicates that "The assessment of cultural significance has two interrelated and interdependent elements. The first element is the determination of that which makes a place significant and, therefore, the type (or types) of significance that it manifests. The second is the determination of the degree of significance that this heritage place has for society". (http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CLT/images/630X300/UNIT6.pdf).

3.3.3 In elaborating this management plan all these aspects have been considered: the value of the site historically (the fort is probably one of the few Aghlabids foundations still standing), the importance of the site for the community (the site is located near a marabout and place of pilgrimage and festivals), the value that the local communities attribute to it (the project has worked specifically with the civil society to learn about the monuments at Iunca and the Council of the city intends to include Iunca into a new touristic track). All these elements have therefore been considered in creating this document.

3.3.4 Heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments will be considered subject to the policies for assets that have been granted statutory protection.

3.3.5 The setting of a heritage assets is also important, and elements of setting may produce a positive or negative significance of an historic asset

3.3.6 Each identified heritage asset at the site of Iunca and within the 2 km wider study area will be assigned a level of heritage significance (value) in accordance with a four-point scale as shown in *Table 1*, below. This table provides guidance as to significance (value), but professional judgment will be applied in all cases regarding the appropriate category for individual heritage assets. If an asset is assessed with a greater or lower value than noted in the guidance table, justification must be provided. The aim of this table is to identify and priorities the monuments which are at more risk of being damaged or deteriorate.

Table 1 Significance (value) criteria for Heritage Assets

Significance (Value)	Asset categories
High	• World Heritage Sites • Listed Buildings • Archaeological sites, buildings, monuments, gardens or landscapes that can be shown to have demonstrable national or international importance (value) • Burial grounds and cemeteries • Well preserved historic landscape, character areas, exhibiting considerable coherence, time-depth or other critical factors
Moderate	• Archaeological sites, buildings, monuments, parks, garden or landscapes that can be shown to be of regional importance (value) • Historic townscapes, with historic integrity in that the assets that constitute their make-up are clearly legible • Averagely well-preserved historic landscape character areas with reasonable coherence, time-depth or other critical factors
Low	• Archaeological sites, buildings, monuments, gardens or landscapes that can be shown to be of limited or of local interest only (value) • Locally listed buildings as recorded on a local authority list, in the case of Tunisia- The INP • Historic assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a high grade

	• Historic landscape character areas whose value is limited by poor preservation and/or poor survival of contextual associations
Not significant	• Assets identified as being of no historic, evidential, aesthetic or communal interest • Assets whose values are compromised by poor preservation or survival or of contextual associations to justify inclusion into a higher grade • Landscape with no or little significant historical interest

4 DOCUMENTATION OF THE ARCHAEOLOGICAL REMAINS

4.1 Fieldwork Training and Data Collection

4.1.1 The TinA project provided training in a multi-disicplinary approach which included desk-based and field survey reconnaissance and data collection. The training focused on field walking with GPS, geophysical survey, remote sensing and aerial photographs integrated into GIS, and photogrammetry.

4.1.2 Intensive field walking was employed across the site of Iunca (see un published reports Nebbia 2017 and 2018), with a systematic sampling strategy to map the extents of the site and its sub-surface archaeological remains. Intensive field walking was employed across the site of Iunca, with a systematic sampling strategy to map the extents of the site and its sub-surface archaeological remains. An area of approximately 250 ha was surveyed following a track-walking strategy. The locations of all samples were recorded with the use of hand-held GPS devices (**Figure 2**).

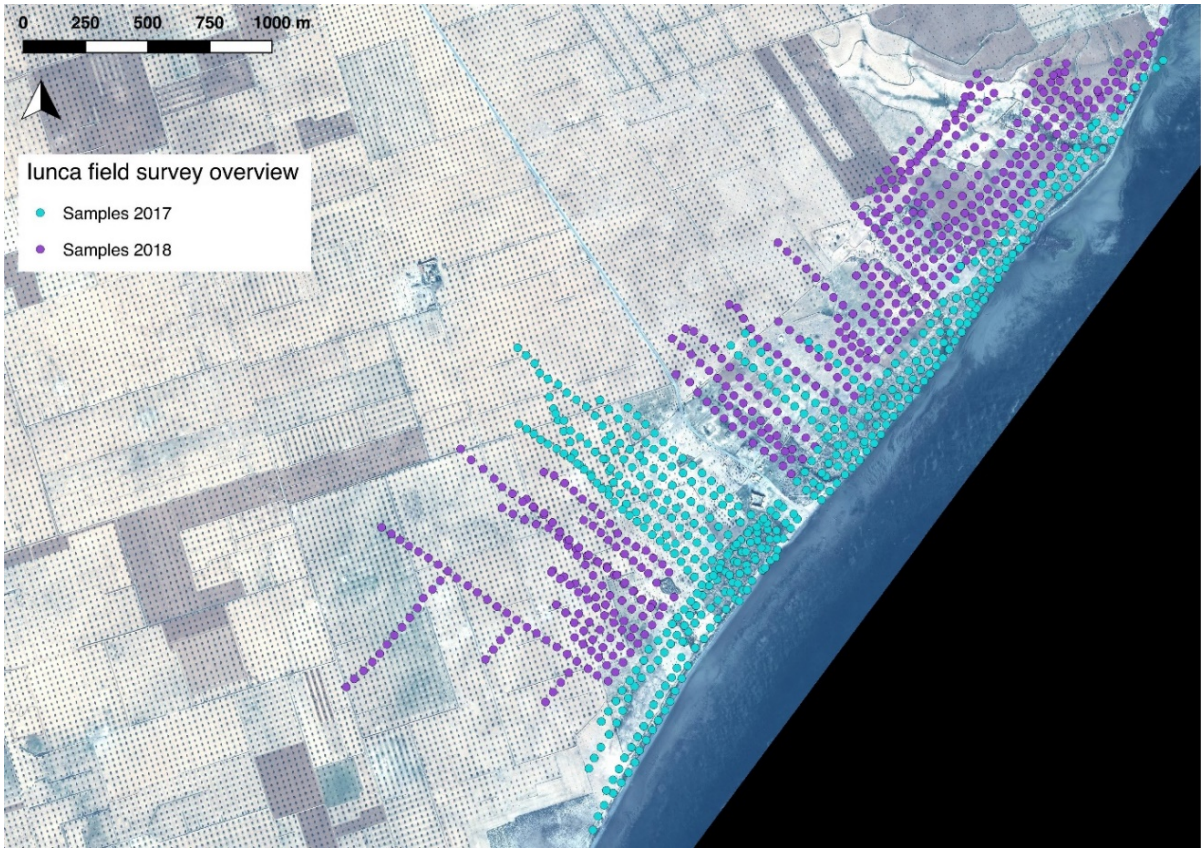

***Figure 2**: Overview of the regularly gridded samples where surface material was collected during two field seasons 2017 and 2018*

4.1.3 The results of the targeted field survey were used to define a buffer zone for the site (**Figure 3**) whilst also identifying damage and predicting potential dangers (Leone *at al* 2020). The

definition of this buffer zone at Iunca will be used to protect the site from encroachment and future development.

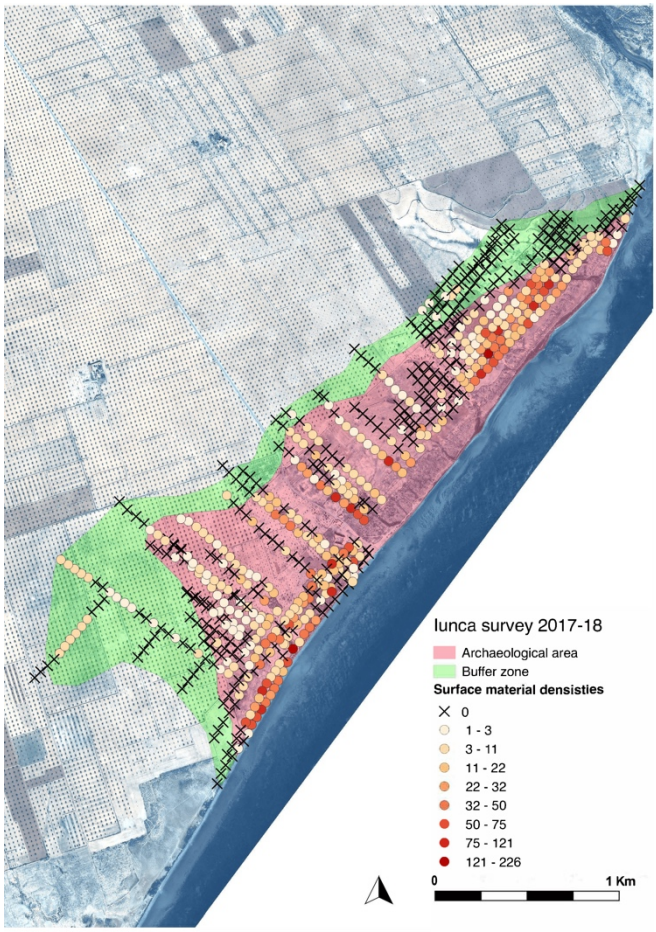

***Figure 3**: Overall distribution of surface material across the site of Iunca*

4.1.4 Following the remote sensing and field-walking, targeted geophysical survey training (Voke 2019*a*, 2019*b*, 2017*a*, 2017*b*) was carried out at several locations through the site at Iunca(**Figure 4**).

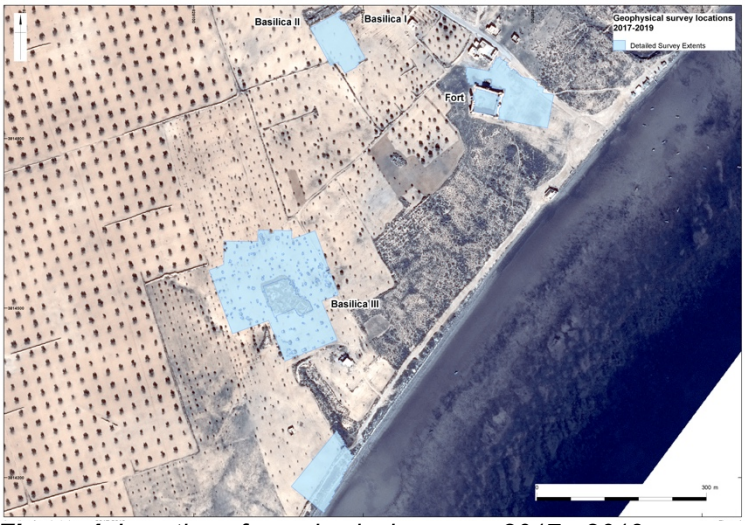

***Figure 4**: Location of geophysical surveys 2017 - 2019*

4.1.5 These sites were targeted around previously known archaeological monuments of the three basilicas, the inside and an area north and east of the fort. An additional area east of basilica III was also surveyed following data collected from fieldwalking. In total an area of 5.8 ha of gradiometer survey was achieved across the four survey areas. The gradiometer surveys were successful in identifying previously unknown subsurface archaeological features in all the survey areas (**Figure 5**).

***Figure 5**: Location of geophysical; surveys and interpretation 2017 - 2019*

4.1.6 However, the clearest of these features were identified surrounding Basilica III, where a previously unknown cemetery complex and enclosure were detected (**Figure 6**). Targeted test-pitting of the geophysical anomalies confirmed the presence of sub-surface archaeological remains. The results of these surveys will be integrated into existing research projects. Furthermore, the surveys have provided new information that will be used to inform the management and protection of the site.

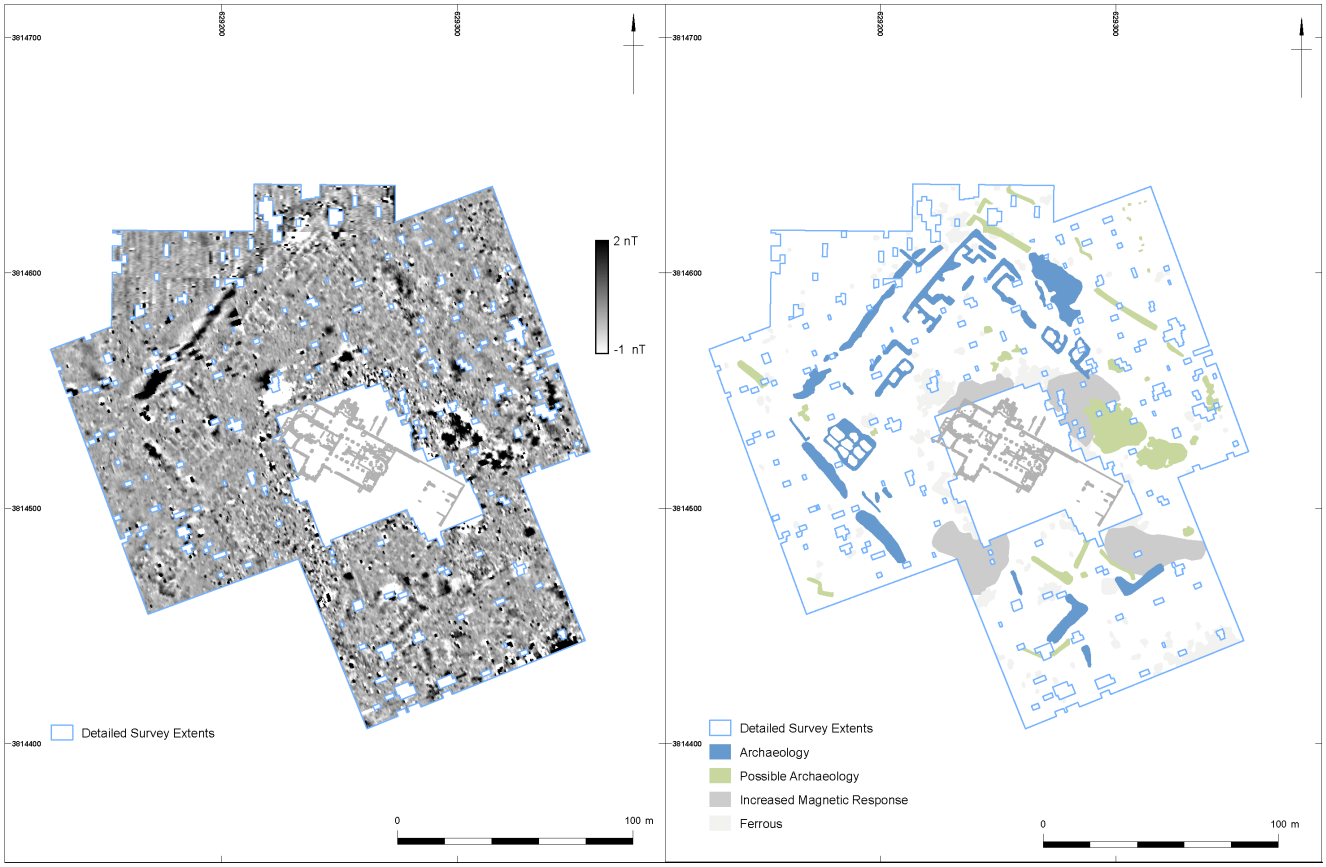

***Figure 6**: Iunca Basilica III: Detailed gradiometer results and interpretation*

4.2 Site Condition Assessment of the Fort

4.2.1 The fort is the only standing, visible structure at the site, and it is subject to local tourism. This is currently an almost empty building, slightly trapezoidal in plan (**Figure 7**), with perimeter walls and hollow towers nearly completely preserved to full height.

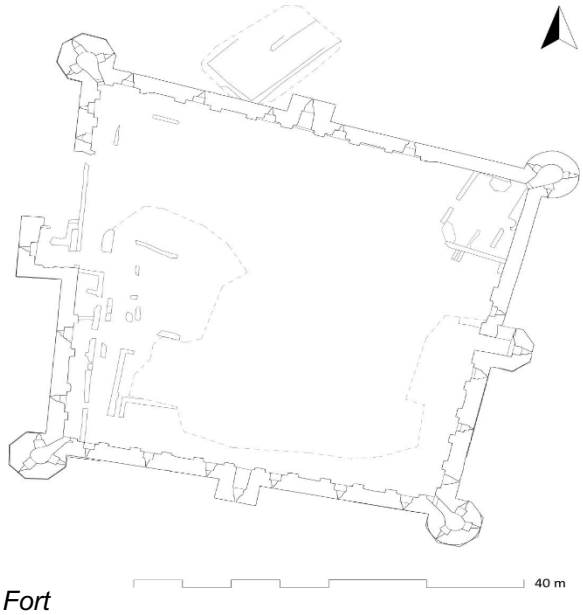

***Figure 7**: Map of the Fort*

4.3 Conditions and Work carried out

4.3.1 From 2017 to 2019 within the framework of the TinA project several activities were conducted in an around the building. A new map and photogrammetric model of the fort was completed. The resulting photogrammetric elevations and plans made by M. Brizzi during the field work in 2017 were used to carry out an archaeological analysis of the standing structures by means of stratigraphic and typological criteria. This examination was undertaken by M.ª Ángeles Utrero Agudo and José I. Murillo Fragero and made it possible to identify up to eight historical phases (**Figure 8** and **9**), dating to from the Late Roman period until today.

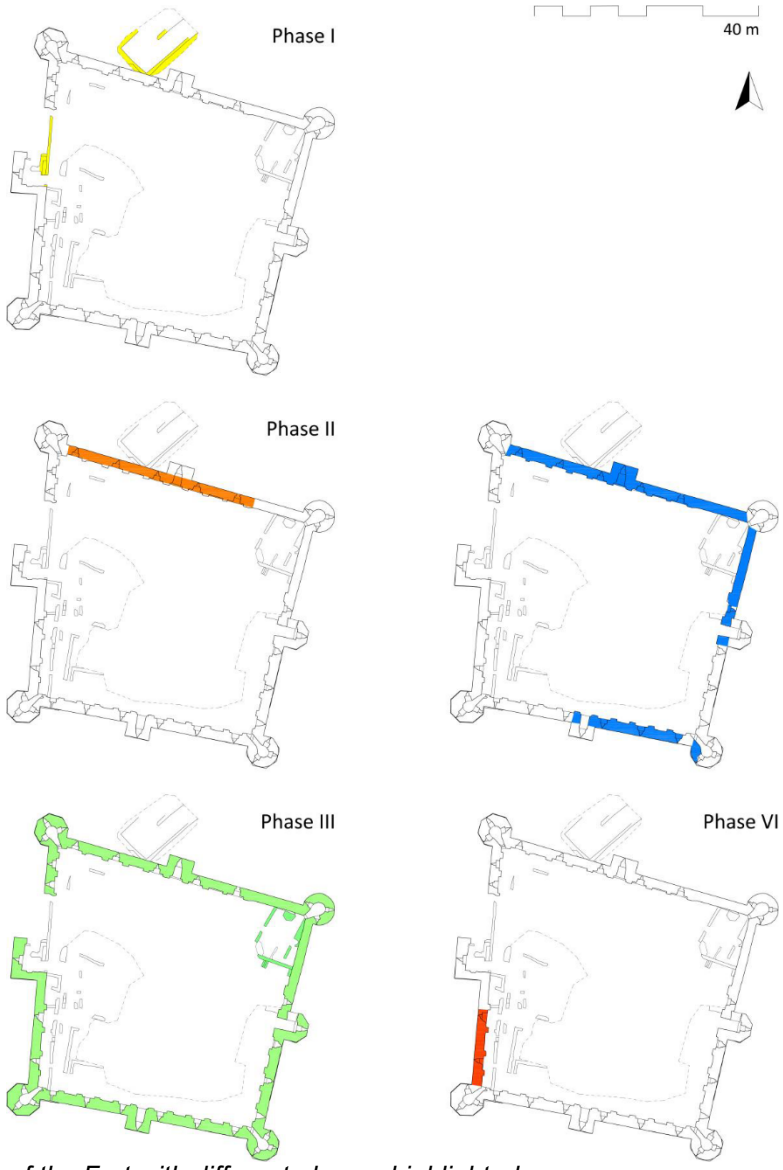

***Figure 8**: Map of the Fort with different phases highlighted*

4.3.2 This analysis obtained an historical sequence strictly based on the methodology of the archaeology of architecture, in the hope that future excavations, archival consultation and further analysis (such as those of the mortar samples) will complete this preliminary history of the building, which seems to start in the Late Roman period (Phase I). This analysis also revealed how the contemporary restorations (Phase VIII) had affected the standing building. From the 1980s onwards, the site has been restored by introducing new stones with the aim to reinforce the lower parts of the structures and the openings (remaining unfinished in

the south wall). The structure has some visible cracks which compromise the stability of the wall.

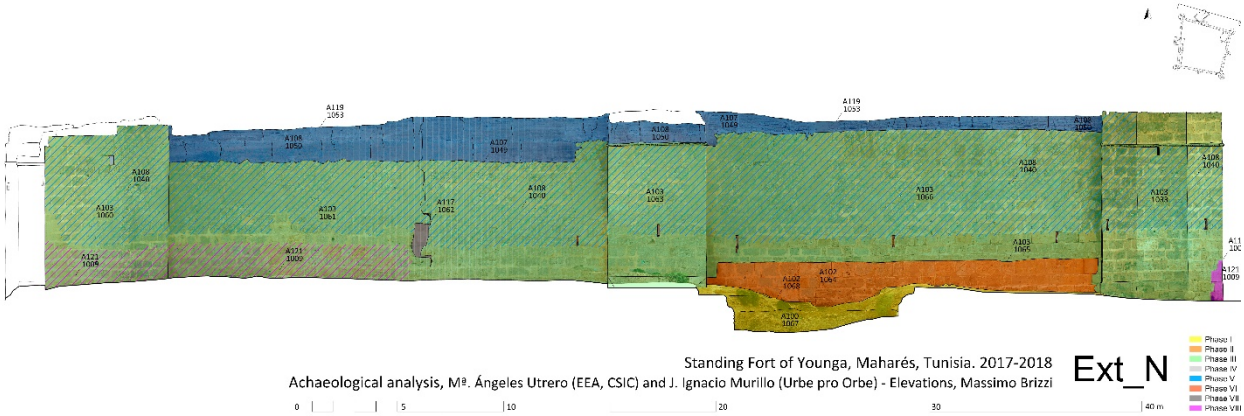

Figure 9: *Archaeological analysis of the external North wall of the Fort*

4.3.3 These works also included the cleaning of the interior of the fort which had been damaged by a number of unsanctioned excavations. Some of these intrusive activities included; eliminating ruined elements, such as the vault of the entrance; emptying spaces, like the interior of the mosque; and opening trenches close to the foundations of the south and east walls, thus damaging thre preservation and fundamental stratigraphic relationships between ground and architectural elements.

4.3.4 Amongst all of these activities, the reconstruction of the lower part of the southern external wall with new stones is the most worrying recent intrusion. The condition assessment has identified that this modification is further compromising the integrity and stability of the structure. The stones used for the restoration are soft limestone, which is heavily damaged by wind and salinity coming from the adjacent sea (for the analysis we thank Lisa Mol). Moreover, in a later medieval period, after a phase of abandonment of the fort, this was reused, and its southern and eastern walls were then elevated through the reconstruction of the upper parts of the walls with a mud structure. These upper parts were also consolidated in the 1980s with white mortar lied out on the top of them (**Figure 10**).

Figure 10*: Restoration of the top of the mud-walls with white mortar*

4.3.5 This intervention has caused the collapse of the former in the south façade, since the mortar is much heavier than mud and reacts in a different way to natural events. This is clearly visible in the external south wall (**Figure 11**).

***Figure 11**: Restoration of the curtain walls of the fort – southern external part of the wall*

4.4 Emergency Excavation

4.4.1 Within the framework of the TinA project, training and excavation was conducted at the site of Basilica III and was carried out by a team from Durham University (Prof. Anna Leone)in collaboration with the Institut National du Patrimoine in Tunisia (INP) (Dr Ammar Othman) – see grey literature - report submitted by Durham University to INP –region of Sfax. Basilica III was previously excavated non-stratigraphically between the 1940's and 1950's with three campaigns of excavation. The remains of the basilica were subsequently abandoned following these investigations and the remains were left partially exposed.

4.4.2 Since 2017, a secondary aim for the TinA project has been to rescue the monument through cleaning and restoration. The church was in danger of being lost, due to invasive vegetation, modern agricultural activities and looting. In accordance with the INP the first interventions took place to remove vegetation and spoil heaps from the colonial period excavations. These spoil heaps were in danger of collapsing the upstanding archaeology as they were predominately covering the walls of the church. Following this cleaning, a condition assessment was carried out of the monument (see Leone – Nebbia 2017). Several conservators were employed to carry out targeted preservation for the most at risk mosaics and structural remains. Detailed cleaning, excavation and recording were carried out during 2018 and 2019.

4.4.3 A new plan of the church has been redrawn, which demonstrates the discrepancies in dimensions and layouts of the colonial plans published by Garrigue and Duval (Marinato - Pavan 2020). Furthermore, a previously unexcavated burial vault was unearthed south of the eastern apse. Upon excavation is was discovered that the vault contained between 55-60 individuals. The excavations at Basilica III reveal that previous excavations and vegetations encroachments of these monuments have left the structural remains in desperate need of action. It is also clear that cleaning and limited excavation can provide long term preservation and new accurate information for these monuments. The complexities of ensuring the preservation of the site in Iunca are represented in microcosm at the site of Basilica III. There are several monuments across the site facing similar problems and careful management is paramount for their continued survival.

4.5 Community Engagement Activities

4.5.1 An important component is to emphasise the inclusion of people, stakeholders and members of the local community, in the management and protection of archaeological sites. The effectiveness of managing cultural heritage in both countries requires the development of a vision that cares as much for those connected to the material remains as about the

material remains themselves. During the duration of the project, activities were conducted involving the local civil society, featuring discussion on the importance of site and its preservation; values and problems were tackled with the aim to spark the interest of the local population. In order to increase the historical interest of the site, was organised a one-day festival at the site of Iunca, with the participation of traditional musicians, food and art-crafts. The project participants engaged with the community offering tour of the monument and designed and conducted games and activities for children. Finally, a series of conference were organised for the local communities, during the fieldwork, presenting the results of the fieldwork in different phases of the project.

5 HERITAGE ASSESTS LIST AND SIGNIFICANCE (VALUE)

5.1.1 Following the completion of the fieldwork all heritage assets within the site boundary were identified and assigned a significance (*Table 2*).

5.1.2 In addition, the fieldwalking identified two defined zones. These zones were where the densest concentration of surface material was collected (**Figure 12**)

5.1.3 These two areas are located surrounding the fort and the three basilica's and a further area north-east of the fort. It is possible to define an approximate boundary based upon the distribution of collected material. Whilst these areas have numerous ceramic sherds which could indicate buried archaeological remains, there is little structural remains visible. Therefore, these areas have been defined as *unknown significance* and would require further archaeological investigation to understand them.

Table 2 Heritage assets at Iunca and their significance (value)

Heritage asset ID.	Heritage Asset	Description of asset (Monument, building landscape etc.)	Location (Grid Reference) Coordinate system: WGS 1984 UTM Zone 32N	Significance (Value)
1	Fortress	Remains of fortress Previously excavated at not known date and in 1980s. The fortress was restored several times, being the largest restoration intervention conducted in 1980s, with the reconstruction of several walls. Study of the stratigraphic sequence of the structure and drawing of the new plan conducted in 2017-2019	E:629615 N:3814860	High
2	Basilica III	Remains of Basilica III and associated buildings. Previously excavated in the 1940s and 1950s during French colonial period. Re-excavated and preserved during 2017-2019	E: 629258 N: 3814520	High
3	Basilica III Cemetery	Subsurface remains of cemetery covering approximately 3.5 ha surrounding Basilica III. Including numerous limestone grave structures, an enclosure ditch and associated undefined archaeological features. Identified during geophysical survey 2017-2019.	E: 629197 N: 3814561	High

4	Basilica I	Remains of covering an area of 1748 m^2. Excavated during the French colonial period. Poor state of preservation and collapse.	E: 629325 N: 3815020	High
5	Basilica II	Remains of covering an area of 622 m^2. Excavated during the French colonial period. Poor state of preservation and collapse.	E: 629379 N: 3815010	High
6	Possible archaeology	Possible archaeological site identified from geophysical survey in 2017. Large concentrations of pottery on surface.	E: 629351 N: 3814223	Low
7	Possible archaeology associated with fort	Two possible, rectilinear structures identified east of the fort from geophysical survey 2017.	E: 629692 N: 3814850	Moderate
8	Unknown structure	Unknown structure identified from remote sensing measuring 497 m^2	E: 629462 N: 3814750	Low
9	Unknown structure	Unknown structure identified from remote sensing measuring 456 m^2	E: 629497 N: 3815131	Low
10	Marabout	Place of worship and festivals	E: 629616 N: 3814950	High
11	Cistern associated with fort	Cistern associated with fort	E: 629653 N: 3814930	High
12	Cistern	Isolated cistern	E: 630491 N: 3815860	Moderate
13	Unknown structure	Possible, rectilinear structure associated with Basilica I identified during geophysical survey 2019	E:629340 N:3814990	Moderate
14	Unknown structure	Unknown structure identified from remote sensing measuring 322 m^2	E:629385 N:3815240	Low
15	Unknown structure	Unknown structure identified from remote sensing measuring 846 m^2	E:629475 N:3815300	Low

6 PRESEVATION MANAGEMENT PLAN

6.1 Introduction

6.1.1 From the results of the fieldwalking and remote sensing it was possible to define the perimeter of the site at Iunca. Analysis of the distribution of surface finds identified that the site covers an area of approximately 200 ha. With the densest concentrations of anthropogenic material surrounding the fort and the three basilica's and another area to the north of this.

6.1.2 The heritage assets recorded in *Table 2* were detected through a combination of remote sensing, fieldwalking, geophysical survey and excavation and are considered highly important for the initial preservation and management plan at the site (**Figure 12**).

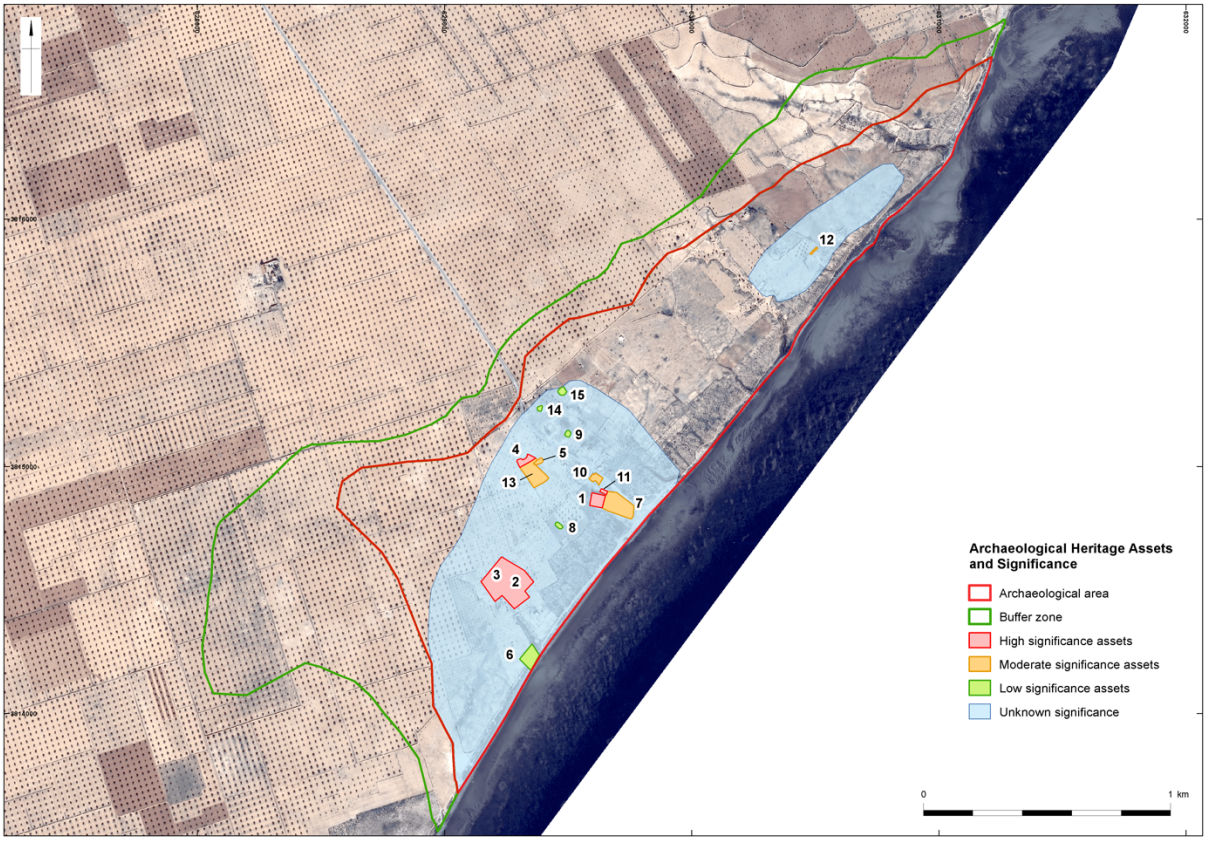

***Figure 12**: Archaeological Heritage Assets of Iunca and significance*

6.2 High Significance Heritage Assets

6.2.1 Heritage assets that have been deemed of high significance (Heritage Asset ID: **1**, **2**, **3**, **4** and **10 -11**) require the highest level of protection and management. These sites are of significant regional and national importance and require further protection for their survival. No new development or continued agriculture should be carried out in these areas. A management strategy should be proposed for these sites. This should include demarcation of the monument's boundary and new signage and information about the site. A management plan and a condition assessment should be carried out for each heritage asset and this should be checked and maintained on a yearly basis. Conservators should be trained and employed to carry out systematic conservation and monitor work conducted by specialists on the most at risk monuments identified from the condition assessments.

6.2.2 Although the marabout is currently still in use it also should also be considered among the monuments of high value, being a place of worship, and considered of great importance by the local community. The Saint - Sidi Ahmad `Absa – is indicated in the ancient sources as living in the fort (Othman 2004) and it is likely that there is archaeological evidence also in the area surrounding the marabout. Some specific research should be conducted at this site, to evaluate the extent of the ancient occupation in this sector especially in the early Islamic period.

6.3 Specific recommendations for the Churches and the Fort

6.3.1 Based upon the significance rating in *Table 2* several heritage assets have been deemed of high significance or value. These are the Fort and associate cistern (Heritage Asset ID: **1** and **11**) The three churches associated cemetery of Basilica III (Heritage Asset ID: **2** – **5**). These sites are the most prominent, extant archaeological remains at the site of Iunca and have been investigated in antiquity as mentioned previously. It was considered essential therefore to document specific recommendations for these highly significant monuments.

The Three Churches

6.3.2 The three churches have been exposed through non stratigraphic excavation, Basilica I and II were subject to investigation in the '20s, while Basilica III was excavated in 1950s (**Figure 13** - See more recently and previous bibliography Baratte and Bejaoui 2014, 241-253). The latter has been subject to cleaning and first intervention of restoration to consolidate walls and mosaics during the TinA project. A new plan of the monument has been produced, which has allowed the identification of different interventions of the monument, which due to the removal of all the stratigraphic material cannot be dated. An initial assessment has been conducted on the two churches which are located east of the fort. All the churches are located in an area which is cultivated, surrounded by olive trees, figs and almond trees.

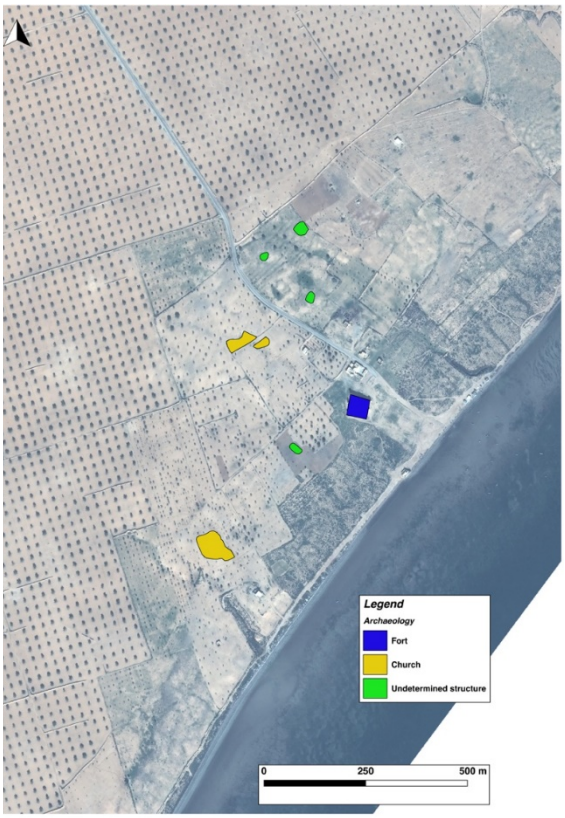

Figure 13: *Location of the three Churches*

Church I and II

6.3.3 *Conditions:* The two churches, excavated in 1920s, are in a very bad state of preservation. The excavations did not entirely expose the monuments. Only an approximate plan of the monuments was created during this period of excavation. During the excavation the spoil heaps were accumulated around the monuments and left there. Over the years the spoil heaps have collapsed and have covered almost the entirety of the buildings. As a result, the excavated remains are much lower than the level of the present-day surface.

Recommendations

6.3.4 Uncover the buildings again and proceed with restoration would require very high costs, beside not knowing the current state of preservation of the monument, uncovering may incur the collapse of the complex. Therefore, it is recommended that the visible structures are studied and mapped and a condition assessment of the monument is carried out. The structural remains should be located with accurate co-ordinates and reburied to assure long term protection (on reburial of ancient monuments and its practice see Demas 2004). It is highly recommended that the area where the two structures are located is fenced, and clearly demarcated (**Figure 14**). This would allow for continued control of the area and the protection of this sector from tree planting and cultivation.

Figure 14: *Location of the protection zone for Basilica I & II based upon geophysical results*

Church III

6.3.5 *Conditions and work carried out*: The work of the TinA project has focused on Basilica III for different reasons:

6.3.6 Despite its conditions, the monument was the best preserved of the three churches, therefore it was considered the most appropriate structure for rescue and future community

and public engagement. Basilica III is the only transect church in North Africa, and therefore is scientifically extremely important and investigation of this monument highly desirable. The owner of the land had planted two olive trees within the monument and excavated a well of 10 m diameter and 20 m deep. In the 1950s when the monument was excavated the excavation strategy was to follow the wall lines in the attempt to discover mosaics and identity the plan of the structure. In order to achieve these aims the spoil heaps were accumulated outside the wall. These spoil heaps have over the years progressively collapsed on the structural remains, provoking the collapse of some parts of the church.

Interventions at the church:

- Cleaning of the monument and removal of vegetation (2017).
- Progressive removal of the spoil heaps behind and over the wall which were compromising the walls, continued cleaning to uncover all the church (2018-2019 – report Marinato, Pavan), creation of a new map of the monument with phasing (**Figure 15**).
- At the same time onsite conservators headed by Paola Stradella consolidated the walls (after they had been recorded and studied) and the floors (fragments of mosaics and mortar, as well as the mortar preserved on the walls (2018-2019 – conservation report by Paola Stradella).

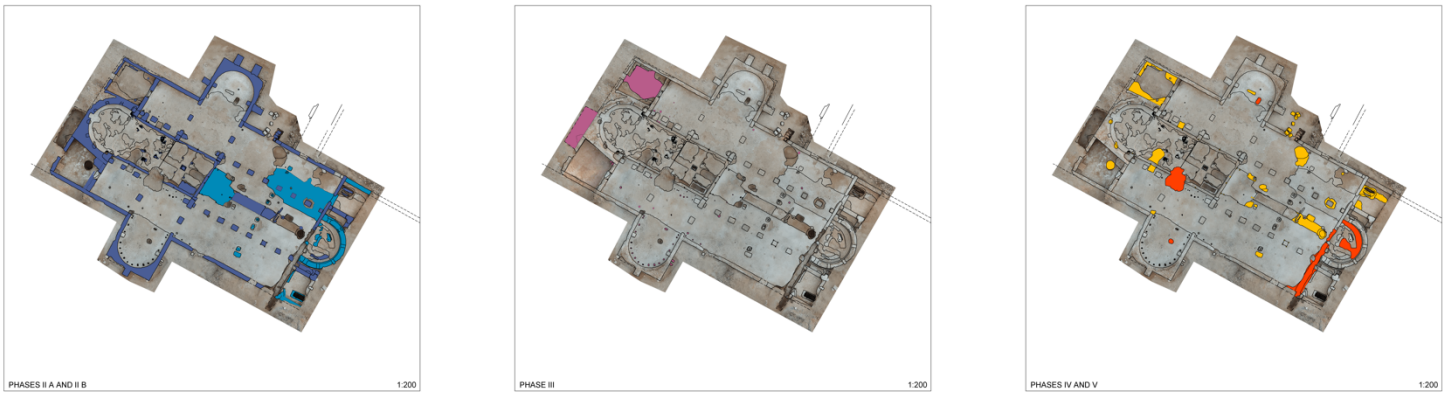

Figure 15: *Phase plans of Basilica III*

Recommendations

6.3.7 In order to leave the monument accessible to the public it will be necessary to carry out a more systematic and in-depth consolidation of the walls. Conservators and architects will also have to study and plan a system of water drainage, for heavy rain, so that the water is conducted away from the structures rapidly, without causing major damage. It is recommended that the small portions of mosaics still preserved, now that have been consolidated and documented, are covered with sand to be protected. The floors of the church, although only the mortar preparation is preserved will have to be also covered with sand for long-term protection.

Recommendations for the long-term preservation of Church III

6.3.8 After the restoration will be completed, in order to provide the long-term maintenance of the monument, it is necessary to provide a regular activity of cleaning and removal of vegetation every two months in winter and once a month in spring and summer. This work should be supervised by archaeological professionals. The monument is also sometimes subject to the presence of sand brought by heavy winds. When this occurs, the monument will need

to be cleaned from the sand, to avoid that the sand will cover again the structure in the long term. All these activities have always to be conducted under the control of archaeologists.

6.3.9 Archaeologists will need to carry out every year and assessment of the condition of the walls, and, if any issue is identified, a restoration will need to be planned and conducted immediately.

6.3.10 Create an explanatory board with information for the tourists and maintain the area of the fence that surrounds the church is another essential element, in order to provide constant protection for the structural remains.

6.3.11 Given that the geophysical survey identified a much larger area of subsurface archaeological remains surrounding the church protection zone should be extended to correspond with these results and no further cultivation should be allowed in this area in the future (**Figure 16**).

Figure 16: *Location of protection zone for Basilica III based upon geophysical survey results*

The Fort

Evaluation of the danger for the public

6.3.12 The monument is often visited by national and foreign tourists. The previously mentioned archaeological analysis provided some material for the creation of an explanatory board which is now visible on site to inform tourists. During the work at the site, it was noticed that children were climbing on the walls and walking along the edges. Given the height of preservation of the monument, this is extremely dangerous. Therefore, the INP were asked to place a board indicating the danger and that it is forbidden to walk on the walls. The INP was also in charge of restoring part of the east curtain wall (internal face, close to the central tower) in 2018. This was in high risk of falling. Unfortunately, a lot of rubbish had

accumulated surrounding the fort as a result from tourists and the local community. This was cleared by the trainees during the TinA project.

Recommendations for immediate actions to preserve the Fort

6.3.13 It is advised that the council provides rubbish bins in the area closest to the fort and organises the rubbish collection at least once a week, especially in summer. Fines should be given to those who leave the rubbish in the monument or in its vicinity and to those who carry out graffiti on the walls. This is necessary to discourage this type of behaviour. Graffiti can cut and damage both the historical stones and the mortar. These inscriptions can be found almost everywhere in the fort.

6.3.14 As we have indicated above, some parts of the monument have collapsed, or are at risk of collapse. Therefore, a second board indicating to stay away from the walls, inside and outside the monument should be put in place.

6.3.15 Trenches close to the internal curtain wall remain open (see dashed lines in **Figure 7**). It is necessary to either fence or seal these trenches in order to protect the foundations of the monument and prevent people from falling down. A big hole, a cistern, is open in the ground close to the west wall. This is protected by a movable fence (actually a mattress base or similar) and lacks any further signage. It is considered a very high risk of danger for every person visiting the fort. Permanent protection and signage to indicate the danger of this feature should be implemented immediately.

6.3.16 Accesses to the towers should be fenced off because of the following reasons. First, their vaults are weakened by the presence of cracks and the lack of any further external covering. There is the risk that some of their voussoirs may fall down. Second, the internal spaces of these towers contain irregular paving that cause trip hazards. Additionally, these areas are used as frequent places for fires and camping. The results of these activities generate large quantities of rubbish choking the base of the towers. Finally, the access point for these towers is approximately 1 m from the ground surface making it difficult to enter and exit the towers safely.

6.3.17 The mosque which was excavated in the 1980s, is unprotected. Its mortar pavement is especially fragile and has been damaged by vegetation and people walking on it. The mosque is in front of the northeast tower and is therefore frequently walked over. It is recommended that its pavement and limits of the monument should be covered with an appropriate textile and soft sand to ensure its protection.

6.3.18 Close to the external northern wall, a huge norther cistern remains ruined, with the vaults collapsed, and thereby hollow. Its perimeter should be fenced with the aim to prevent people from falling in when they approach the fort from this northern side.

Recommendations for the long-term preservation of the fort

6.3.19 The monument currently presents several problems of stability and requires a substantial intervention of restoration. It is recommended that small interventions in the most damaged parts of the monument are limited. Instead in order to protect the monument in the long-term, it is necessary to gather a group of expert conservators, substantial funds and proceed with a systematic, well planned restoration of the monument, to guarantee its security. Among others aspects, this future intervention should take into account the historical sequence, with the aim of preserving the stratigraphic limits and thereby the history of the building; the diversity of materials employed (limestone, mud walls), which require different treatments and demand compatible materials; and the geographical situation of the place, close to the coast and therefore exposed to strong natural erosion.

6.3.20 The local council intends to develop a touristic track to include the site of Iunca. The visit to the fort and to the church should be closely monitored. Before this activity occurs, it is

recommended signage that displays the danger of climbing on the walls and the necessity of being aware of the holes and trenches of the fort are put in place.

6.4 Moderate Significance Heritage Assets

6.4.1 Moderately significant heritage assets (Heritage Asset ID: **5**,**7**, **12** and **13**) should also be given a high level of protection. However, it would be advantageous to carry out further archaeological research at these sites to fully understand these features. Small scale archaeological excavation such as test pitting would be beneficial. No new development or continued agriculture should be carried out in these areas. A management strategy should be proposed for these sites. This should include demarcation of the monument's boundary and new signage and information about the site. A management plan and a condition assessment should be carried out for each heritage asset and this should be checked and maintained on a yearly basis.

6.5 Low Significance Heritage Assets

6.5.1 Heritage assets that have been recorded as low in significance (Heritage Asset ID: **6**,**8**,**9**, **14** and **15**) should be initially assessed and investigated to gain further understanding of these sites. Following assessment if they are still deemed of low significance it may be possible for future development and agricultural activity to be carried out under archaeological supervision. However, following further assessment if the significance value is amended to high or moderate the management plan should be changed accordingly (see above).

6.6 Long Term Recommendations for the overall site

6.6.1 The fieldwalking identified two zones where the densest concentration of surface material was collected (**Figure 12**). These two areas are located surrounding the fort and the three basilica's and a further area north-east of the fort. It is possible to define an approximate boundary based upon the distribution of collected material. However, it is possible that this could indicated numerous, sub-surface archaeological remains. It is recommended that detailed gradiometer survey should be carried out in these two areas. If any archaeological remains are detected they should be further investigated with test pitting to characterize and confirm the nature and chronology of the detected features. Following this characterization, they should then be assigned a significance value as detailed in *Table 1* and an appropriate management plan activated.

6.6.2 Relatively little is known about any underwater archaeological features at the site of Iunca. The coastal zone is currently used for domestic and small-scale commercial fishing. It is considered that the settlement of Iunca would require a large harbour. In 2016 a survey was conducted (Belmabrouk 2016) and identified possible vats for fish salting activities. A further survey conducted in 2017 identified the presence of potential warehouses to the south of the fort. This was due to large quantity of amphorae, dated principally to the 6th and 7th c. AD recorded on the surface in this area. Therefore, it is deemed highly important to investigate the coastline and locate any underwater archaeological remains potentially covered due to rising sea levels. Another important element to identify is the location of the harbour, which has never been identified. During the project and initial underwater survey was conducted along the coast, and some structures appear to have been identified in relation to the potential warehouses of the Byzantine city. More research will need to be carried out in intertidal zone and underwater to guarantee the protection of all the buildings of the sites in the long term. Further management plans should include underwater surveys of the coastline adjacent to the perimeter of the site. Any archaeological features identified should be documented and then assigned a significance value as detailed in *Table 1* and an appropriate management plan activated.

6.6.3 Further archaeological fieldwalking and remote sensing should be continued along the coastal zone to the north and south of the site at Iunca. The information gathered would help to contextualize the site of Iunca. The occupation of the site was extensive and multi-period and may extend beyond the archaeological area identified during the TinA project.

7 COMMUNITY ENGAGEMENT AND OUTREACH

7.1.1 The long-term protection of the site also requires the involvement and the increasing awareness of the local populations and tourists. In order to achieve these aims a number of activities have already been put in place, which include:

7.1.2 Explanatory notice boards have been produced for the fort and the site of Iunca. It is recommended that further signage and information boards are created for each of the churches and the marabout.

7.1.3 During the course of the TinA project leaflets in French, English and Arabic were produced to inform the local community about the site of Iunca. These leaflets were distributed among the hotels adjacent to the site and to the City Council. It is hoped that these leaflets will provide new information and renewed engagement for the local community and their heritage. The TinA also produced documentation and information for the municipality of Mahares. Forging close links with the municipality helped to facilitate the development of a future touristic plan of the city which includes the site of Iunca.

7.1.4 Finally, it is deemed highly important and beneficial that the INP continues to engage with the local community, so as to maintain awareness of the importance of the cultural heritage at Iunca. It is particularly important to ensure sustained engagement of younger generations with the site. This could help to safeguard and protect the site in the future. It is recommended that the INP should facilitate an open day for tourists and the local community with special activities on the site at least once a year. These open days should also be organised with the support of the municipality of Mahares and local hotels and restaurants. This would guarantee a sustainable touristic track that would elevate the profile of Iunca whilst providing potential economic benefits to the local community.

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المعهد الوطني للتراث

1510

16 JUIN 2020

Tunis, 16 Jun 2020

I endorse that the recommendations and protection measures stated here, result from a detailed co-produced programme of training and research for officials, initiated and led by Professor Leone in collaboration with Dr Ammar Othman, within the framework of the legal agreement between Durham University and the Institut National du Patrimoine de Tunisie to conduct scientific research at the site of Iunca and to develop a plan for the management and the long-term protection of the site.

This project and initiative have significantly advanced the skills of those involved in heritage protection, but have also improved the implemented protection measures for the internationally important site of Iunca, as well as the site presentation to the public.

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