

## The Transformation of the Moroccan Landscape in the Early Islamic Period. Preliminary report on the 2017-2018 fieldwork.

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*This project considered one of the most understudied phenomena in the North African landscape: that of the transformations that occurred due to the coming of Islam to the Maghreb. We explore this question by applying archaeological techniques to the landscape of northern coastal Morocco. This was a zone known to have a long history of occupation from the Stone Age to the present. Surveys were conducted in the area between Tangiers and Asilah, both to identify sites of particular importance and to supply data for an analysis of settlement and land-use during various prehistoric and historic periods, with particular emphasis on the Islamic periods. Methods included detailed and controlled landscape survey (fieldwalking), remote sensing, sounding of selected sites, scientific dating of selected finds, and studies of the local ancient environment. Surface collections of materials helped in the dating and assessment of the settlement types. Soundings were conducted at two sites with important presence of material from the Islamic period, to more precisely date their occupation. More than 250 new sites were identified in the approximately 1000 square kilometer's area covered by the project, although only a fraction of this region could be intensively surveyed. The main results showed an important presence of Lower Paleolithic sites and a much more intensive rural occupation during the Early and Middle Islamic periods.*

### Introduction

The past 20 years have witnessed an important improvement in our understanding of Morocco's peopling during various prehistoric and historical periods. This part of Northwest Africa is an area whose access from the rest of Africa is made difficult by environmental barriers (the Sahara) and from Europe by the Mediterranean Sea, but shows clear connections with the Near East not only in the early Islamic period but also in other periods as early as the Stone Age and the pre-Islamic phases.

Three archaeological survey campaigns were conducted in October 2017, January-February 2018, and September-November 2018 in the region between Tangier and Asilah as part of the cooperation project between the Institut National des Sciences de l'Archéologie et du Patrimoine (INSAP-Rabat) and University College London - Qatar.

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The purpose of the project is to carry out prospections in the area covered by the El Manzla 1:50,000 map and the neighbouring maps of Asilah and Arba 'Ayacha, to collect data that allows for an analysis of the hierarchy of newly discovered sites, and to better understand the use of the landscape during prehistoric and historical periods, with particular emphasis on the beginning of the Islamic period.

Apart from this central objective, survey and fieldwork have focused on identifying the sites of all periods since prehistoric times in order to complete the maps of the occupation of the territory made during previous surveys, especially those conducted by Michel Ponsich in the 1960's, by the Moroccan-French mission of Dchar Jdid-Zilil between the seventies and the nineties, and by the prehistoric Moroccan-Belgian-Polish mission in the region of Tangier in 2000-2003.

The sites discovered were numbered according to a code proposed by INSAP, used for other sectors of the surveys conducted in the framework of the Carte Archéologique du Maroc project.

The area was chosen on the base of different parameters: as a bridge between Africa and Europe, the Tingitan peninsula holds answers to many questions on the relationships between the two sides of the Gibraltar strait, from the passage of prehistoric populations in either direction, to cultural exchanges during the Neolithic and Bronze Age periods. The Atlantic coast of Northern Morocco was also exploited for its rich marine resources, but besides the presence of some Phoenician emporia and several Roman installations for the production of *garum*, little is known on the type of exploitation of these resources through time. As far as the Islamic periods are concerned, we hoped to understand whether changes could be identified in the type of occupation between the late Roman and the Early Islamic periods, in terms of settlement size, type, and distribution in the landscape.

Another factor that was taken into consideration when the area was selected for the project, is that the three maps mentioned above (El Manzla, Asilah and Arba Ayacha) are the only three that had not yet been considered for the Carte Archéologique du Maroc: to the south, the area of Lixus and of the Loukkos river is the subject of investigations by several missions (AKERRAZ, EL KHAYARI 2000; AKERRAZ, COLLINS-ELLIOTT 2015), while to the east a Morocco-Spanish team recently published the conclusions of their survey project (RAISSOUNI *et alii* 2015).

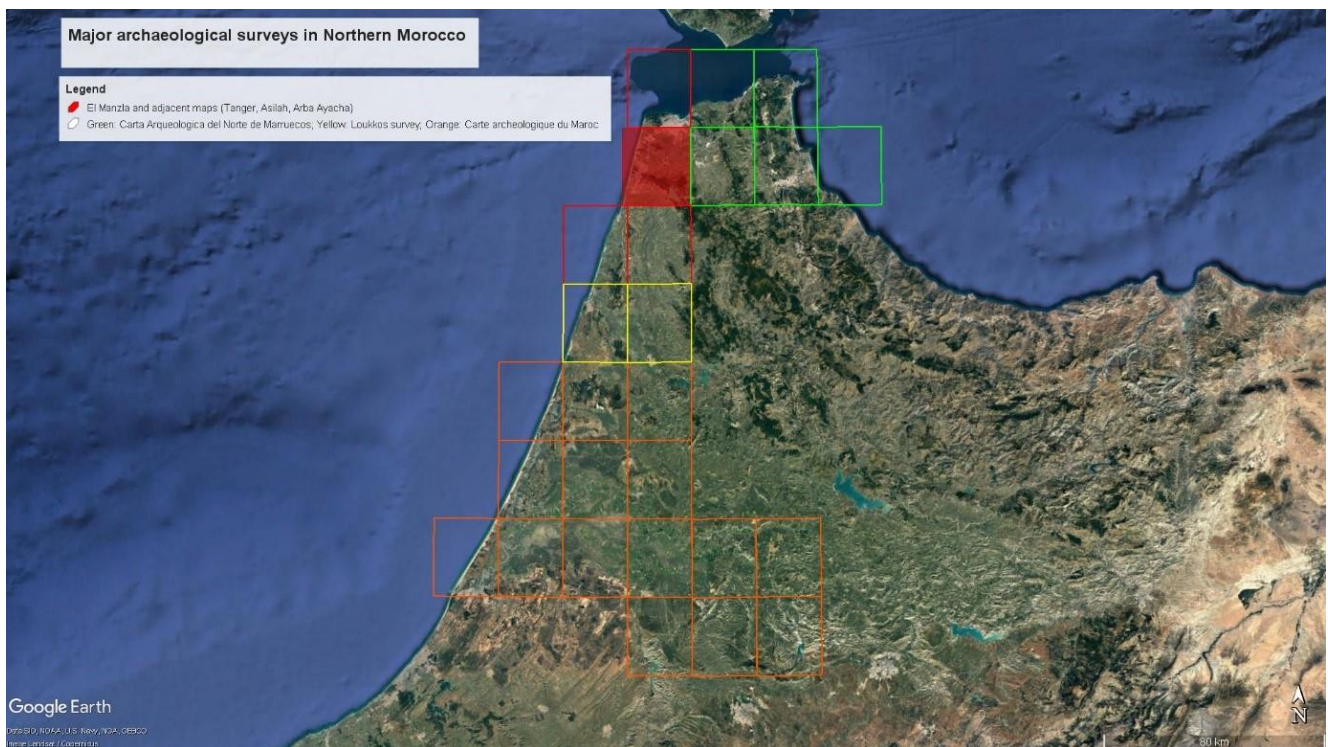


Fig. 1: Major archaeological surveys in Northern Morocco: the red shows the three 1:50,000 maps (El Manzla, Asilah and Arba Ayacha) that were the subject of the investigation.

### *Research history in the area*

Although several surveys were conducted in the region, only three were more systematic than others:

1- The Atlas of the Tangier region published by M. Ponsich in 1964 provides 100 site notes of which around forty are found in the maps that are the subject of our project. It should be noted that it is not always easy to find the sites reported by Ponsich because the author used 1:100,000 maps and the coordinates of the sites are not always accurate. His survey methodology consisted in low-altitude aerial reconnaissance to identify possible communication routes, accompanied by ground truthing and visits to potential site locations. Although some sites could already be identified from the air, such as Kouass (PONSICH 1964:256-257), most of the sites he identified were discovered following on the ground hypothetical communication routes.

2- The Moroccan-French mission of Dchar Jdid/Zilil identified 128 sites in the survey area. Apart from the sites published by Akerraz *et alii* (1982) and by Lenoir (1993) the results of the surveys of this mission remain unpublished. Akerraz (pers.comm.) mentioned that the survey was not the main aim of the Zilil project, which concentrated on the excavation of the site. Surveys were conducted occasionally by the team, in order to draw a first map of the Roman occupation in the region. Also in this case, they mostly followed hypothetical communication routes, visiting specific locations which were identified on the 1:50,000 maps available to them and that could conform to site typologies known from other regions of northern Morocco, such as the hinterlands of Lixus and Volubilis. The material found at these sites, its position, and, in some cases, the presence of wall remains, helped to classify the site as military or rural exploitation.

3- The Moroccan-Belgian-Polish prehistoric mission has identified 51 sites on the map of Al Manzla (OTTE *et alii* 2004). The survey concentrated on the piedmont and along streams in search of prehistoric material. Sites were identified as surface concentrations of flint scatters and in some cases as deposits visible in the stream sections.

Besides these surveys, all the sites mentioned in other publications have been placed on the maps, although for many of them the coordinates are approximate.

### *Method*

A mix of methods were adopted during the project, given the limited time available and the different typology of sites investigated: the prehistoric survey concentrated its efforts on the search for the earliest human occupation in the region. For this, it was necessary to investigate areas where Villafranchian deposits were on or close to the surface. Following the study of geological maps and observations on the ground, this was found to be the case in the region of Arba Ayacha, where most of these surveys took place. A number of seasonal streams were followed by a team of 4 to 5 archaeologists, in order to check the presence of prehistoric deposits that were visible in the sections cut by the stream waters. Although this survey concentrated on prehistoric periods, any eventual historic material found was collected in order to be analysed later at the base camp. Collections were in general limited to diagnostic material. Occasionally, a site showing a larger variety or quantity of tools was sampled more systematically.

The historic survey team, consisting of 5 to 8 archaeologists, used different methods for its survey: the coastal region was surveyed intensively with the team walking along the beach in a 100m-wide transect. Intensive surveys also were conducted in the region of Ain Dalia, 10km south of Tanger, where a large development project is being implemented. In this case the team explored the southern side of the Oued Mharhar covering 100 to 150m wide transects between the road and the valley bottom. In the rest of the survey area the survey included ground truthing (satellite imagery from Google Earth was used to identify possible site locations, which returned a positive identification in approximately 50% of the 39 locations examined), and targeted surveys around topographically-defined units, such as hills and valleys, especially in areas untouched by previous surveys. In total, approximately 5% of the area was intensively surveyed.



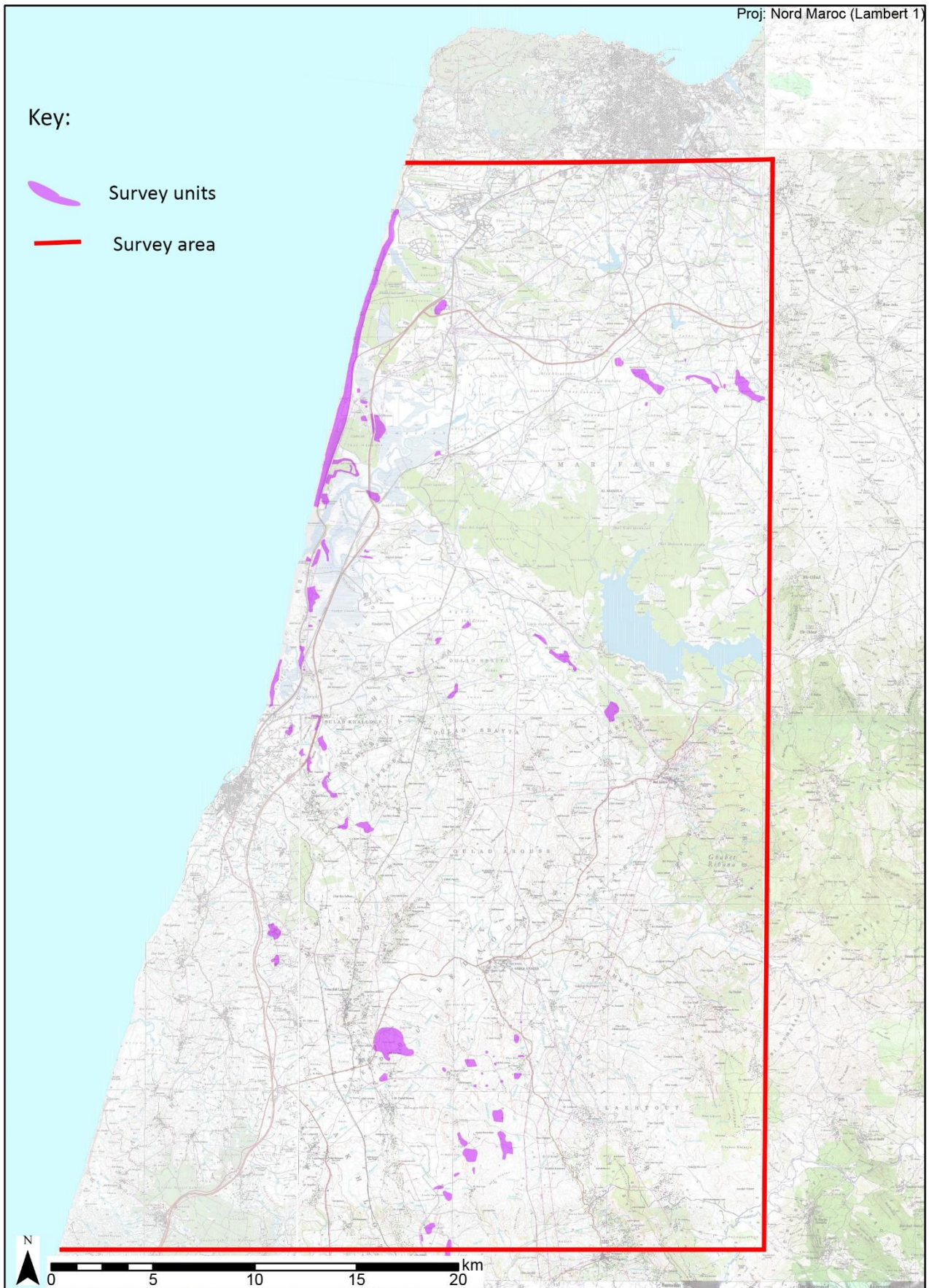


Fig. 2: Survey area and survey units.



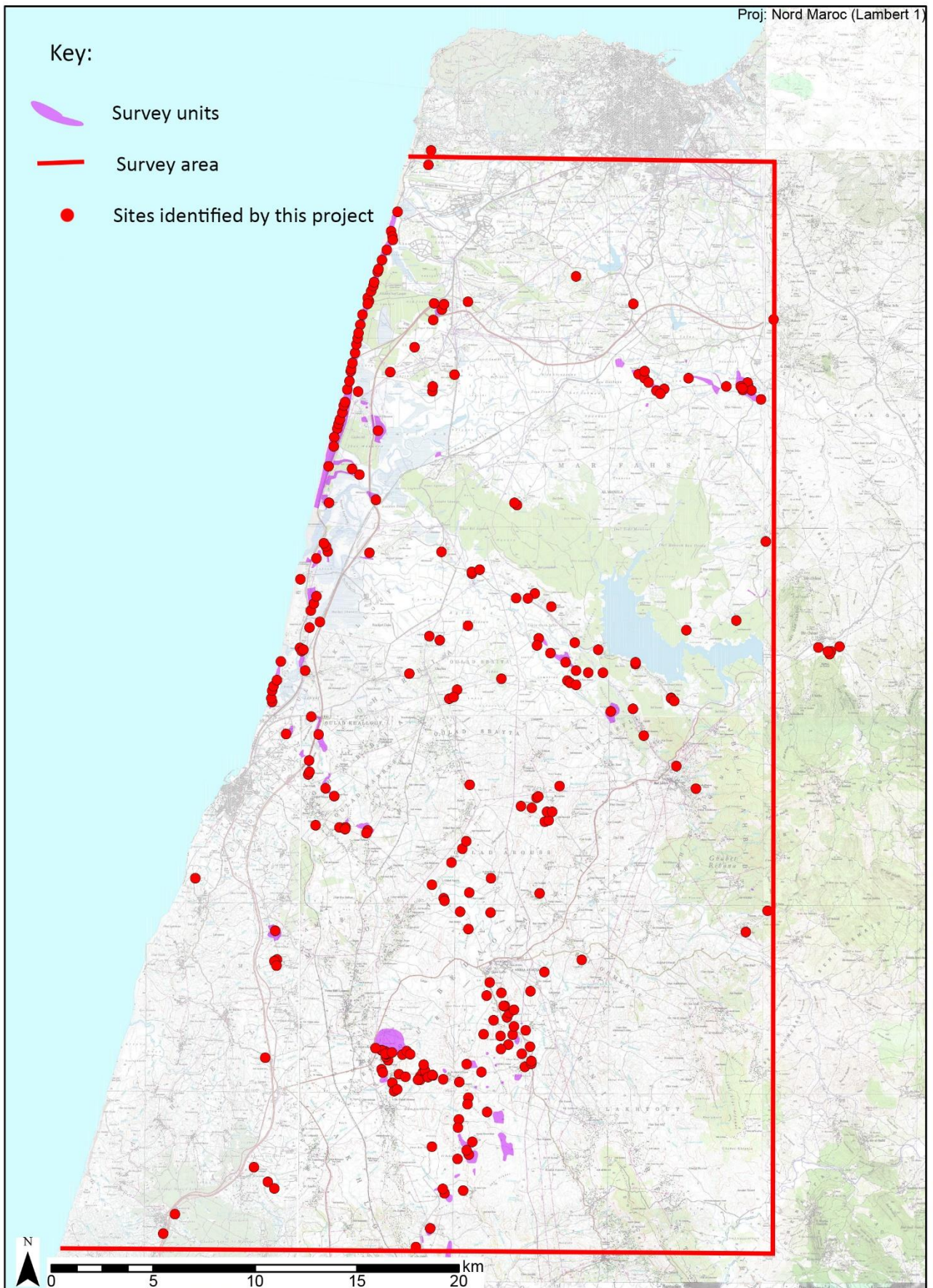


Fig. 3: Survey area with sites identified by this project



In general, ground visibility was relatively good, but in some cases dense maquis, thistle and grass cover did not allow to reach clear conclusions on the presence or absence of sites. These areas, as well as areas inaccessible or covered by modern constructions, and areas where we can positively mark the absence of archaeological sites, were marked as Survey Units. Each Survey Unit was summarily described in its characteristics and marked on the project GIS.

For the purpose of our survey, a site was defined as an area showing human occupation or use during a defined time period. This means that a site could either be mono or multi-phase. Sites were defined as either showing structural remains (most frequently tumuli or wall alignments), or identified as artefacts scatters (where artefacts density was found to be sensibly higher than the usual “background noise”). As a rule of thumb, the presence of important diagnostic elements, or artefacts concentrations equal or above one element per square meter, over an area of at least 25 square meters, were the parameters used to mark a site. Following a method used for other surveys of the Carte Archéologique du Maroc project, if in a site with a major period of occupation, a single diagnostic belonging to another period was found, this presence was marked as “isolated find” for its related period, and calculated in the overall number of sites pertaining to that specific period. This however was found to be the case in less than 20 sites.

Collections were not systematic: in most cases only diagnostics were collected and when possible a first selection was already made on site in order to reduce the amount of material brought back to base camp. In any case attention was made not to deflate the site from all its surface material.

Finally, drones were used to map seven different locations which showed particular concentrations of sites, also in order to identify features not easily recognisable on the ground.



*Fig.4: Low altitude aerial view of Oued Sghir basin with site AM78 in the foreground.*



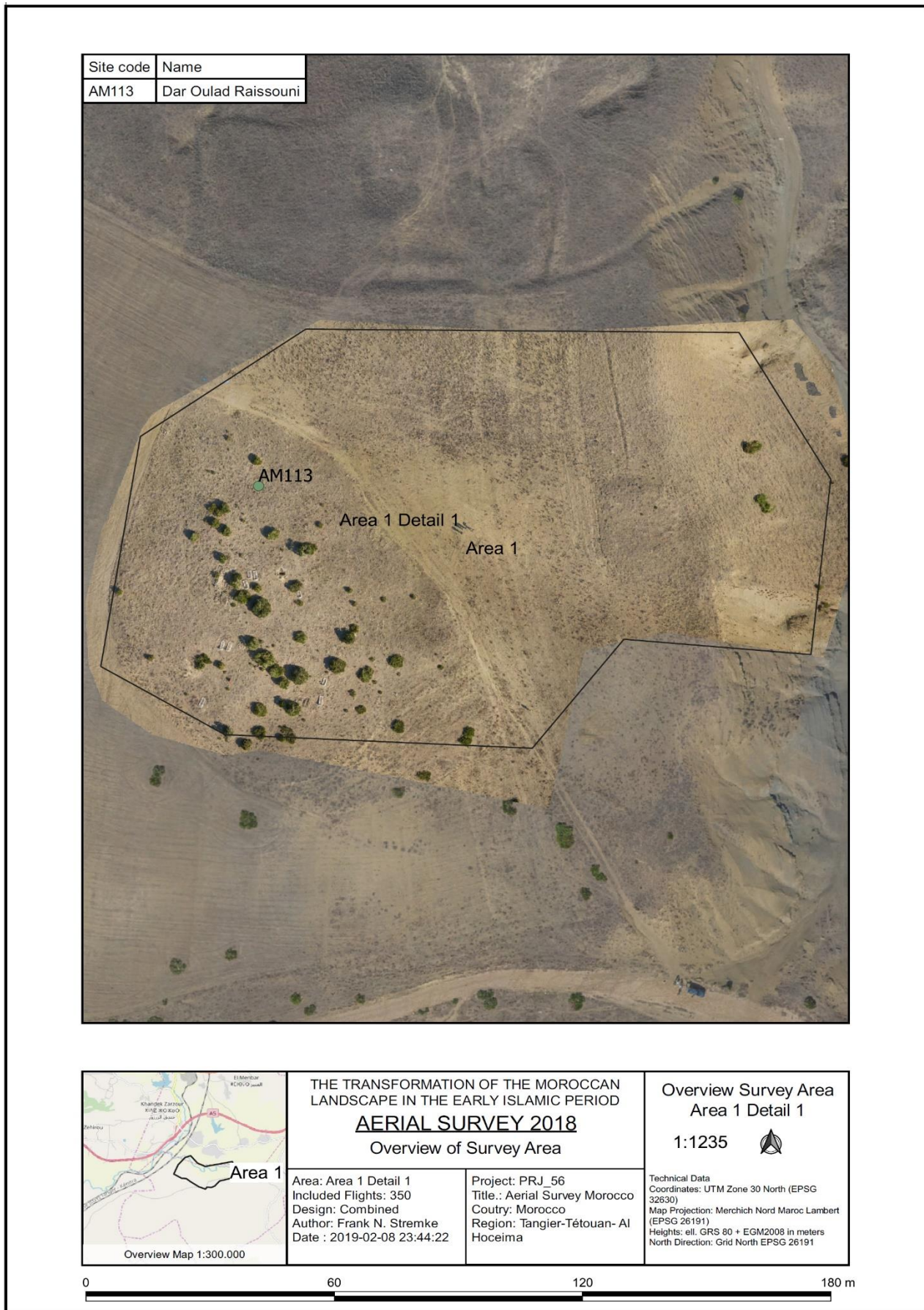


Fig 5: AM113, low altitude aerial view.

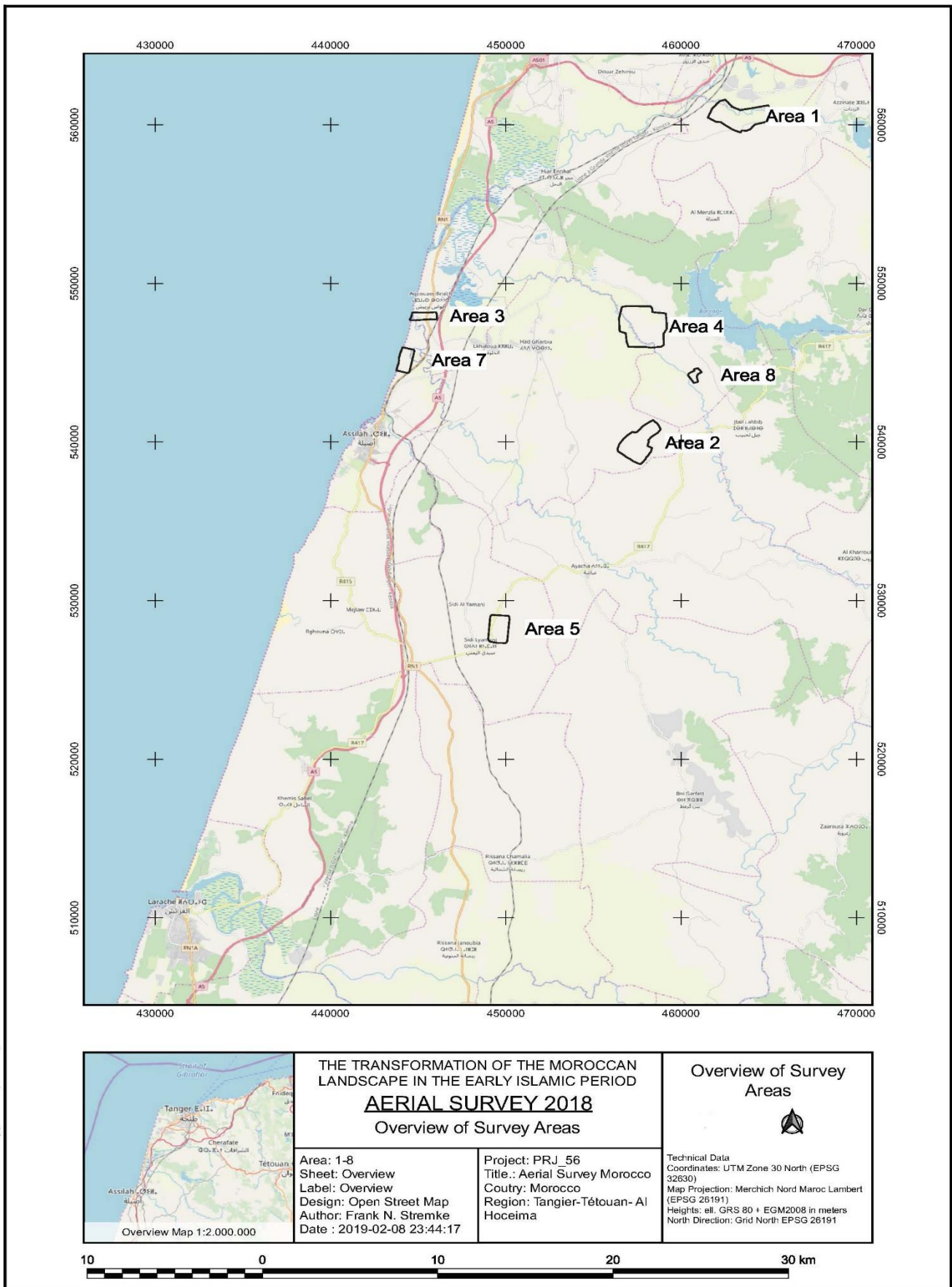


Fig. 6: Areas covered by the drone survey.



### *Sites and artefacts coding*

The sites discovered were numbered according to the code used by INSAP for the surveys of the *Carte Archéologique du Maroc* project. This is composed by a two-letter code identifying the 1:50,000 map, followed by a serial number. In the case of the Al Manzla map (AM), this code begins with 100. For sites in the Asilah map (AC) the code starts with 300 and for those on the Arba Ayacha (AY) map with 200. A small number of sites was also coded on the Khémis Beni Arouss map (KA) and on the Melloussa (MS) map. Both those codes begin with 001.

Artefacts were coded with the site code, followed by the survey year (17 or 18), and a number in sequence to identify the artefact in a dedicated Access database.

### *Site Forms*

For each site a basic form was compiled, in order to capture its main characteristics, to be used later in the project's GIS. Site coordinates were captured with handheld GPS units and verified on 1:50,000 and 1:25,000 maps, using Lambert coordinates. After the recording of the main information on site, including photographs, the forms were completed with the study of the material, including their chronological attribution.

### *Mission Results 2017-2018*

The fieldwork conducted in 2017-2018 has brought to the identification of 255 new archaeological sites.

### *Prehistoric Sites*

A prehistoric presence is confirmed on 148 sites among the 255 new sites identified (58%). All periods of prehistory are present, from the Lower Palaeolithic to the Neolithic. Although several sites have a precise chronological attribution, many more require further study of the material found in order to better define their chronological and cultural phase. It is important to point out that the project does not directly concern prehistoric times, but the first surveys of 2017 brought to light several sites of this period, which required systematic research to clarify their chronology. One of the additional gains of this project is the significant enhancement of knowledge of the early human occupation in this area, and the identification of archaeological sites of high potential for the Early Stone Age. A first examination of the findings of these surveys, has shown that some sites have known both prehistoric occupations and historic ones (mainly medieval).

### *The Lower Palaeolithic*

Middle and Upper Quaternary formations were prospected to find in situ sequences of the Lower Palaeolithic period. Thus, following research in the formations of the Quaternary base (classically called the Villafranchian), we found near the village of Sidi el Yamani, a series of 57 cuts created by the regressive erosion of a torrent. The archaeological objects are in situ in a mixed colluvio-alluvial terrace, in which a stony level contains lithic artefacts made on pebbles, handaxes and quartzite polyhedrons, similar to the lithic technology identified elsewhere in Morocco and Algeria and especially at Thomas Quarry (Raynal et al. 2010) and Aïn Hanech (Sahnouni et al. 2002). During the 2018 fieldwork, we took several samples and their analysis is in progress to produce dates using the Optically Stimulating Luminescence (OSL) technique. At the top of the terrace, on the surface, Middle and Upper Palaeolithic flint tools were found. In the bed of the wadi we have collected many pieces, very rolled, probably from the eroded archaeological layer. The deposit, called Sidi Ben Nsar, named after the western branch of the wadi, indicates a large exploitation of the quartzites in the Lower Palaeolithic, a behaviour that has been identified in similar contexts in several regions and especially on the Atlantic coast. Its importance will be fully assessed after a geomorphological and stratigraphic study of the entire basin. Few kilometres in the Northeast and the Northwest of Sidi Ben Nsar, we identified new stratified sites showing evidence of handaxes and other heavy tools (choppers and chopping tools) at Lemchiem and Lewtiwa. The Lower Palaeolithic is also present north of the area of our survey at Dar Fellaq where a small handaxe was found in a context undated so far and above a formation that covers Numidian facies sandstones. According to the typology of this handaxe, compared to other well dated contexts in Morocco, it might be attributed to the Late Acheulean (Final Lower Palaeolithic). Another site of the Lower Palaeolithic was also

identified south of Dar Chaoui, with tools discovered in situ at the base of a 5.25 m thick sequence. Finds of such early ages were not known so far north: their frequency and wide timespan, which includes all phases of the Lower Palaeolithic, opens new research perspectives on the early prehistory of Morocco, including possible connections between Africa and Europe through the Gibraltar strait.

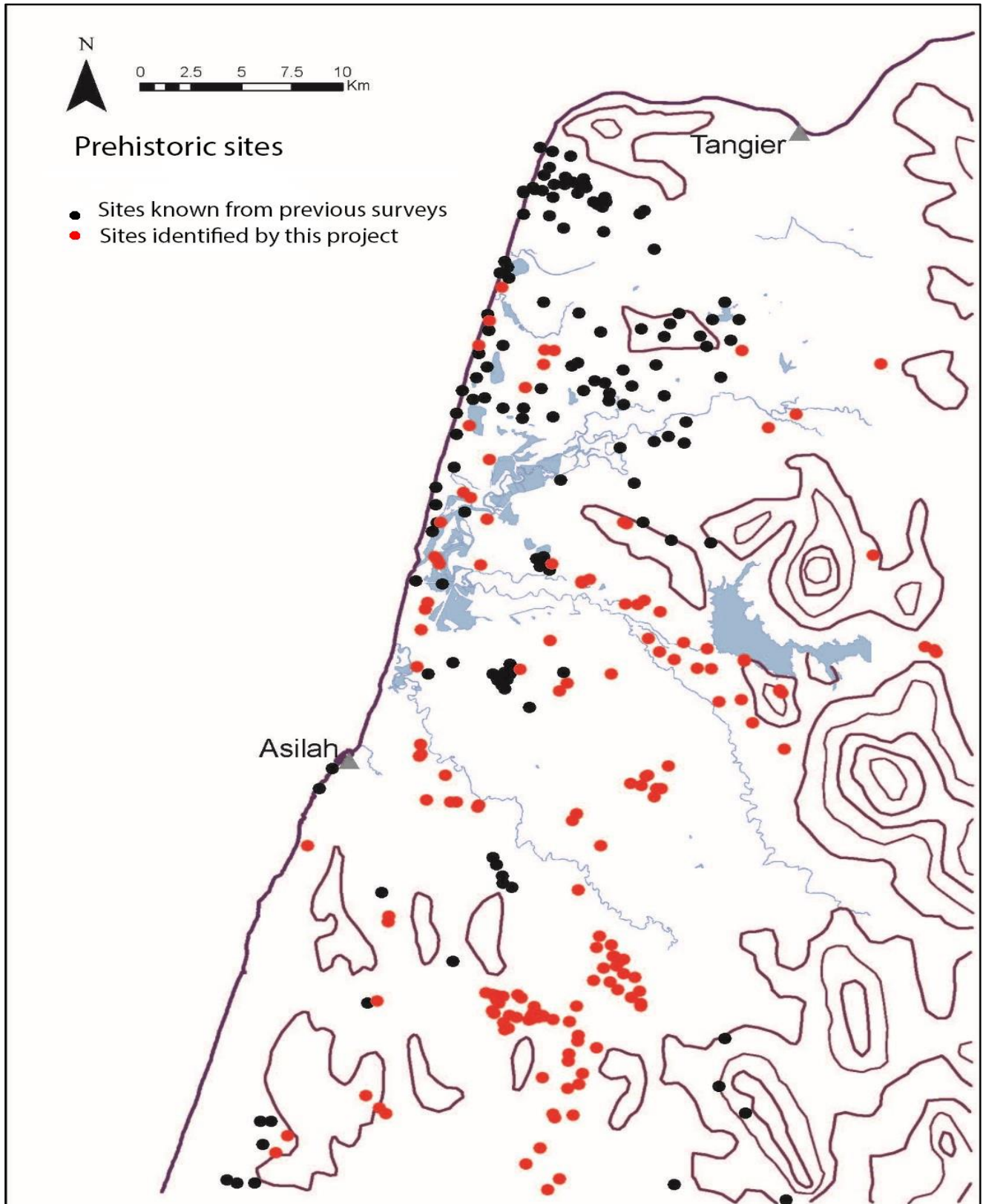


Fig. 7. Distribution of Prehistoric sites



## The Middle Palaeolithic

Middle Palaeolithic sites were mostly found within or on the surface of the Soltanian (Upper Quaternary) red soils and not far from the Atlantic coast (Al Manzla map). Other in situ sites were identified inland such as at Lemssabene, which lies about 1 kilometre from Moulay Bouselham. Both coastal and inland sites display Levallois techniques, various scrapers, bifacial foliates and discoidal cores. They also yield typical Aterian technology such as pedunculates. This technology was dated between 100,000 and 60,000 y BP at El Aliya Cave (Cap Achakar, Tangier) (BOUZOUGGAR *et alii* 2002). We should mention that most of the Middle Palaeolithic tools were made on various types of flint and we identified several sources of this lithic raw materials at several locations nearby the sites or carried out by small rivers like Daqqiouane or Bou Khandek.

## The Upper Palaeolithic

The sites of the Upper Palaeolithic and especially the ancient phase (Iberomaurusian) were often found at the top of the red soils on the map of Al Manzla, and mixed up with the earlier phases, and especially the Middle Palaeolithic on the surface of the vertisols, also known as "Black Cotton Soil", on the map of Arba Ayacha. The lithic analysis is in progress but the lithics display blades and bladelets technology including backed pieces, typical bladelets cores and the use of microburin technique.

## The Epipalaeolithic and the Neolithic

Like elsewhere in Morocco<sup>1</sup>, Epipalaeolithic sites when found are difficult to separate from the Neolithic ones. They were mainly identified at the base of the Pleistocene-Holocene sequence represented in this area by the Rharbian, an ashy grey context. Backed bladelets and microliths are common in the Epipalaeolithic.

In the same context at the upper sequence of the Rharbian, we identified both *in situ* and on the surface several Neolithic sites. They display hand formed pottery sometimes fired and various microliths including geometric types and the evidence of pressure flaking.

## *Bronze Age to Late Antique sites*

The mission has identified 115 sites dated from the Bronze Age to the Late Antique periods. 69 of them also show a later Islamic occupation.

The distribution map of sites known from previous surveys shows three major concentrations: in the North, in the regions around Tangier, in the center, in the region of Zilil, and in the southwest, in the region of Lixus. These concentrations do not correspond to a real scenario but are the consequence of archaeological research conducted in these areas at various times during the last 60 years. We have tried to balance this obvious bias by surveying the northern coastal areas as well as the Arba Ayacha region, but it is clear that more work is needed in order to obtain a more accurate picture of settlement patterns between the coast and the mountainous areas of the peninsula.

## Bronze Age sites

We put in this time range 4 sites (AM216, AM219, AY303 and AY313) with looted cemeteries distinguished by the box burial that characterises the archaeology of the area, found at other necropoleis such as Aïn Dalia Kebira<sup>2</sup>.

## Mauritanian 1 period (8<sup>th</sup> BC to the end of the 6<sup>th</sup> century BCE)

A single site, AM102, el-Brayech, located on a hill on the right bank of the mouth of the oued Tahaddart, presents archaeological material corresponding to the first Mauritanian period. The Atlas of Tangier by M. Ponsich mentions this site, but the description is incomplete and does not reflect its age and importance.

<sup>1</sup> Such as at Hassi Ouenzga (LINSTÄDTER 2008).

<sup>2</sup> SOUVILLE 1986: 108; JODIN 1965.

Mauritanian period 2 sites (between the end of the 6<sup>th</sup> and the end of the 4<sup>th</sup> century BCE)

This period is represented by 35 sites, mostly coastal ones to be identified as facilities related to the exploitation of sea products. Main sites are AM102, where the occupation seems to have continued, AM169 and AM216. AM169 is a rural settlement and the second is the necropolis of El Mries.

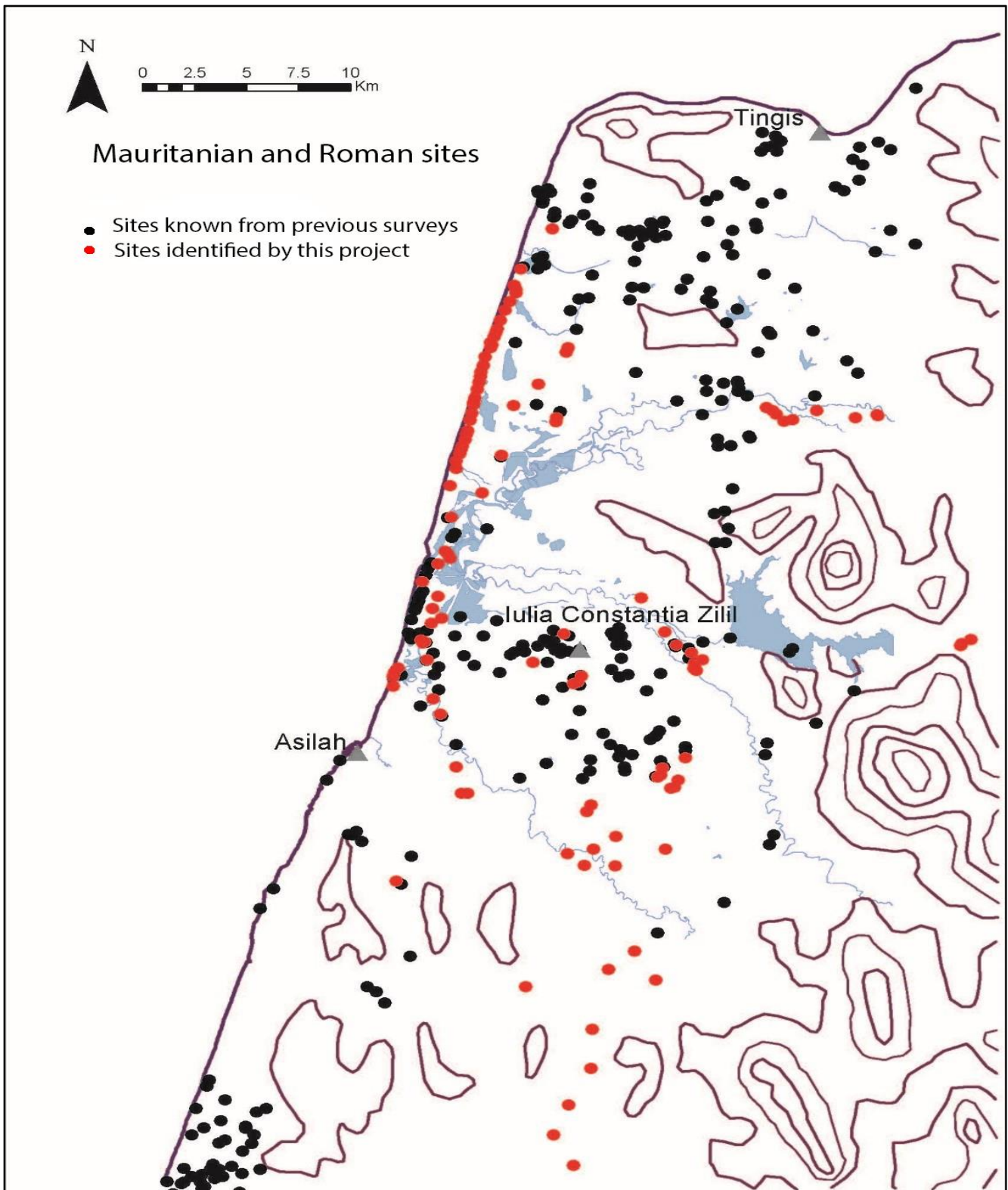


Fig. 8: Distribution of Mauritanian and Roman sites.



#### Mauritanian period 3A sites (3<sup>rd</sup>-2<sup>nd</sup> century BCE)

5 sites belong to this period, all coastal.

#### Mauritanian period 3B sites (1<sup>st</sup> century-33 BCE)

28 sites provided archaeological material corresponding to occupation during this period. The majority of sites during this period are also littoral sites.

#### Mauritanian period 4 sites (33 BCE-40 CE)

71 sites represent this last phase of the Mauritanian period. Two sites (AM130 and AM131) are located in the Oued el Kebir valley south of Tangier. Most other sites are in the coastal strip west of Zilil (Iulia Constantia). It should also be noted that there was a marked increase in occupation during this period, which corresponds to a better knowledge and abundance of the archaeological material which characterizes it, but also to the colonial foundation of Zilil.

#### Provincial period 1 sites (between 40 and 120 CE)

The annexation of the kingdom of Mauretania in 40 CE is translated, according to the results of the survey, by a stable occupation of the territory around Zilil and Tangier: 64 sites present materials of this phase.

#### Provincial Period 2 sites (between 120 and 200 CE)

26 sites are attested by the collection of the specific material of this phase. They are attested in the two main areas covered by the survey.

#### Provincial period 3 sites (3<sup>rd</sup> century CE)

This phase corresponds to the 3<sup>rd</sup> century CE and is represented by only 17 sites, 12 of which were occupied during the provincial phase 2. This reduction in the number of sites representing this phase could largely be explained by our lack of knowledge of the archaeological material characteristic of this period, and perhaps also by a reduction of trade of the region with the other Mediterranean provinces. It should be noted that this situation is observed in all regions of Mauretania Tingitana (AKERRAZ 1992; 2010).

#### Provincial period 4 sites (4<sup>th</sup> to 5<sup>th</sup> centuries CE)

The sites of the late Roman period, corresponding to the 4<sup>th</sup> and early 5<sup>th</sup> centuries CE are found in both areas covered by surveys. AM 008, AM126, AM188, AY302 and AY304 were also occupied during the provincial periods 2 and 3. The chronology assigned to the sites of this period must, however, be refined with the study of archaeological material, and in particular amphorae attributed to this phase in the inventory.

It should be noted, however, that the sites that provided archaeological material characteristic of this period are few in number, in contrast to historical data confirming the Roman presence north of Loukkos in general, and in the Tangier-Zilil region in particular (AKERRAZ 1992; MUEDEN 2011). This situation could be the result of a concentration of the populations in larger settlements, but it could also be explained by the scarcity of artefacts that mark this period in the countryside. That the intense exploitation of the land for agriculture during the Roman period accelerated desertification is unproven. Palinological records indicate a decrease in tree numbers and species (REALE, DIRMEYER 2000, HUGHES 2011), but data is still insufficient to be statistically significant.

### Islamic sites

There are 161 sites with Islamic occupation, 69 of which also have at least one other previous period of occupation between the Bronze Age and the Late Antique.

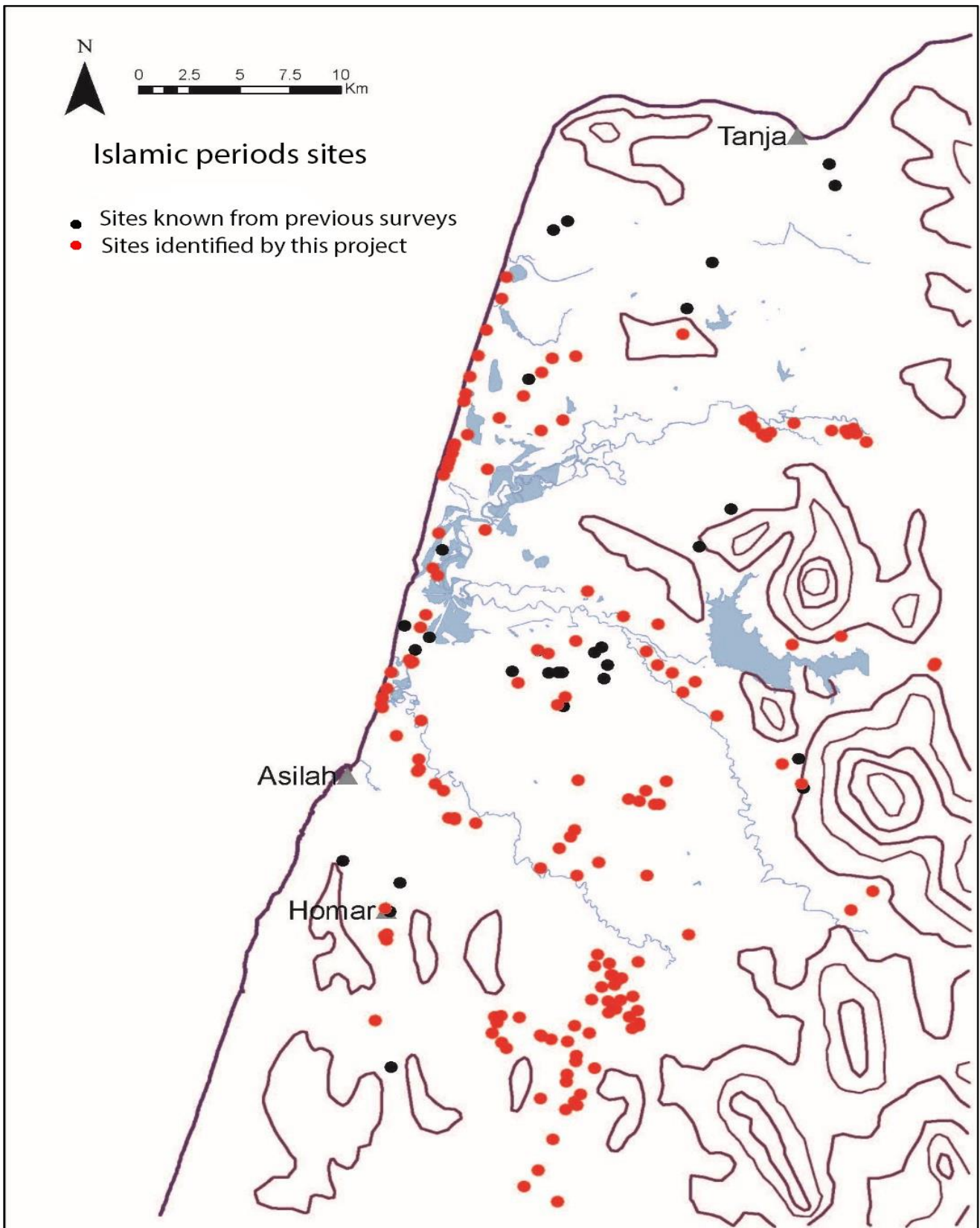


Fig. 9: Distribution of Islamic sites.



Only 4 sites seem to have had occupation around the 10<sup>th</sup> century, while artefacts that could be of an earlier date (8<sup>th</sup>-9<sup>th</sup> centuries) have scarcely been identified. Some traces of Late Roman-Early Islamic pottery were collected at sites like AM102, yet even in context they do not form a consistent body of evidence. This is due in part to lack of proper knowledge of the material culture of this period (FENWICK 2013), and the scarcity of published information on excavated contexts, although excavations at major sites such as Basra (BENCO 1987; 2004), Rirha (CALLEGARIN *et alii* 2016), and Volubilis (FENTRESS, LIMANE 2018), are starting to provide information that should benefit research at smaller rural sites such as those that were identified during our survey. 10 sites have been tentatively dated between the 10<sup>th</sup> and 13<sup>th</sup> centuries. The rest are tentatively dated between the 13<sup>th</sup> and the 18<sup>th</sup> century. During the surveys we observed a very strict association between the many cemeteries with the presence of a zawiya or marabout and traces of occupation in their surroundings, normally posterior to the 13<sup>th</sup> century. The difficulty of accurately dating rural dwellings from medieval times was due to a lack of excavations and studies of common ceramics.

The distribution of sites identified by this project compared to those known from earlier work shows that the Islamic periods were rarely identified if not ignored altogether in past investigations.

Period	Number of sites	Number of sites (total by period)
Early Islamic (8 <sup>th</sup> -11 <sup>th</sup> c.)	2	5
Early and Middle Islamic	3	
Middle Islamic (12 <sup>th</sup> -15 <sup>th</sup> c.)	64 (3 of which isolated occurrence)	99
Middle and Late Islamic	32	
Late Islamic (16 <sup>th</sup> -18 <sup>th</sup> c.)	29 (2 of which isolated occurrence)	61
Indetermined	31	31
<b>TOTAL</b>	<b>161</b>	<b>161</b>

For the Early Islamic period it is to be noted that none of these have a date earlier than the 10<sup>th</sup> century.

We conducted soundings at two sites in the fall campaign of 2018, at sites AM102 and site AM113. In the first we identified a house with a collapsed tile roof but little artefacts in situ, which we dated to the 12-13<sup>th</sup> c. AD. In AM113 we excavated a rubbish pit which we also dated, on the basis of pottery found, to the 13<sup>th</sup> century. Earlier periods remained elusive.

One important discovery was the identification of a large settlement which may correspond to the Kalâat Ibn Kharroub mentioned by Al-Bakri. We tried to locate this settlement during our autumn 2017 campaign, although we were looking for it more to the southwest. During that campaign, several sites bearing the names of Kalâa or el Kharroub were visited: AY200 (Douar el Kharroub), KA01 (el Kalâa), AY201 (Douar Zitouna), AM128, (Marabout of Sidi Mohamed el Baqqali) and AM129 (Kalâa), but none had the characteristics of an agglomeration that could be identified with the kalâa sought. During the mission of autumn 2018, a large site of the Early/Middle Islamic period (AM220) was discovered which occupies the summit and part of the western slope of the mountain which bears the name of Ras Tahar, on the right bank of the Wadi el Kharroub.

The site is remarkable for its area exceeding 30 hectares, with many traces of large walls. The site dominates the valley of the wadi el Kharroub: it embraces the whole territory between the plateau of Had el Gharbia, Tnine sidi el Yamani, Tlata Raisana and Sebt ben Garfat. Many springs dot the east and west slopes, among the monuments of the agglomeration. The current toponym of the site is Sidi Bouknadel, although no marabout can be located there. The inhabitants know that the site is an old town that was inhabited by the "Soussis" and they think it still has treasures that the descendants of the former occupants come back to look for from time to time.

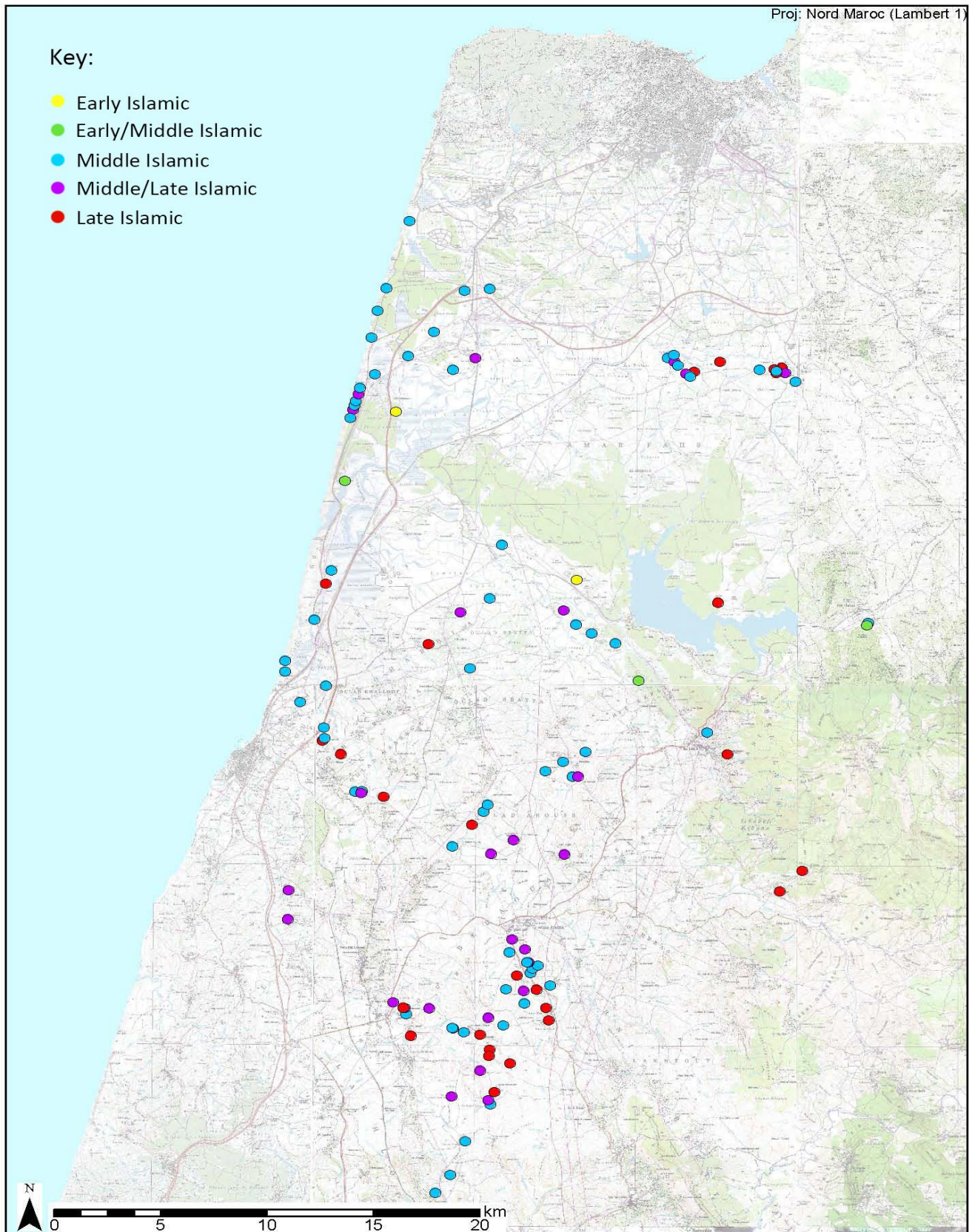


Fig. 10: Distribution of Islamic sites, by period.





Fig 11: The large site of AM220.

## Conclusion

Although the region was surveyed archaeologically in several occasions in the past, the more than the 250 new sites found confirms that only more systematic investigations can provide a reliable picture of human occupation. While the great majority of these sites are either small temporary installations on the coast, or small rural hamlets inland, they contribute to clarify the relationship between the exploitation of land and maritime resources and the cities (Tanja/Tangiers; Asilah; Lixus) that benefited from their products for both internal consumption and trade. The recent physical transformation of the landscape and the acceleration of the urbanization process south of Tangier should encourage further investigations in an area that was for millennia a bridge between Africa and Europe. Furthermore, spurred on by the new results related to the exceptional Lower and Middle Palaeolithic in this area, it is now just as necessary as urgent to undertake deep research on these sites since they are under particular threat at present with major population growth and related development activities. Other research questions opened by our investigations are related to the extensive occupation of the coast during the Mauritanian and Roman periods, linked to the exploitation of coastal and marine resources, the road and military networks during the Roman and late antique periods, and, finally, on the urban-rural connections after the Islamic conquest and into the period of the Berber dynasties.

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