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This volume is dedicated to the memory of the late *Serge Cleuziou* (1945-2009), *Gregory L. Possehl* (1941-2011) and *Gerd Weisgerber* (1938-2010), who pioneered archaeological exploration in the Sultanate of Oman.

The Archaeological Heritage of Oman

UNESCO, Paris. Sept. 7, 2012.



H.E. Dr. Irina Bokova, Director General of UNESCO, welcomes H.H. Sayyid Haitham bin Tariq Al-Said, Minister of Heritage and Culture of the Sultanate of Oman.





H.H. Sayyid Haitham bin Tariq Al-Said introduces H.E. Dr. Irina Bokova to the photographic exhibition about the archaeological heritage of Oman.





The Director General for Archaeology and Museums, Mr. Hassan Mohammed Ali Al-Lawati, illustrates the exhibition to H.H. Sayyid Haitham bin Tariq Al-Said and H.E. Dr. Irina Bokova.



H.H. Sayyid Haitham bin Tariq Al-Said, Minister of Heritage and Culture of the Sultanate of Oman, along with H.E. Dr. Irina Bokova, Director General of UNESCO, and H.E Dr. Samira Mohamed Al-Mousa, Permanent Delegate of the Sultanate of Oman to UNESCO





H.E. Dr. Irina Bokova, Director General of UNESCO, and H.E Dr. Samira Mohamed Al-Mousa, Permanent Delegate of the Sultanate of Oman to UNESCO, opening the event.





The Director General for Archaeology and Museums, Mr. Hassan Mohammed Ali Al-Lawati, and the Director of the Department of Excavations and Archeological Studies, Ministry of Heritage and Culture of the Sultanate of Oman, presenting the different activities of the Ministry.



 $\label{thm:conditional} \mbox{Audience and media attending the International Symposium "The Archaeological Heritage of Oman" at UNESCO in Paris.$



Dr. Nasser Said Al-Jahwari, Head of the Department of Archaeology, Sultan Qaboos University, Muscat.



Dr. Jean-Jacques Glassner, Directeur de Recherche at CNRS Histoire et Archéologie de l'Orient Cunéiforme, Paris (France).



Dr. Paul A. Yule, Heidelberg University (Germany) and Dr. Claudio Giardino, University of Salento, Lecce (Italy).



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The Hafit Period in the Oman Peninsula: Cultural and Economic Changes

Nasser Said Al-Jahwari

A number of hypotheses and statements have been made to interpret the archaeological evidence yielded by previous surveys carried out in the Oman Peninsula. Such statements, as it is clear from conversations and published comments, are used by many scholars in an impressionistic and nonrigorous ways as the basis for the consensus opinion on trends in the relative density of activity and occupation in different periods (Al-Jahwari 2013a). This applies, for example, to the evidence from the Early Bronze Age (EBA), particularly the Hafit period. It indicates that this period is characterized by a large number of cairn burials, and that very few associated settlement remains have so far been found in the peninsula. A scan of the available literature indicates that few rare attempts have so far been made to study and analyze the distribution of Hafit tombs over the landscape (Al-Jahwari 2008; Giraud & Cleuziou 2009; Giraud 2007; Deadman 2011; Al-Jahwari 2013a). Previous surveys only recorded a few Hafit tombs in an unsystematic way and without detailed analysis which does not allow us to interpret their associated cultural, social and economic developments (Al-Jahwari 2008: 55-56).

The aim of this paper is to highlight some cultural and economic changes that occurred during the Hafit Period (ca. 3400-2500 BC) in the Oman Peninsula. The discussion in this paper is going to be based on our current knowledge of the cultural changes which existed during this time based on the literature and a quantified analysis and two Hafit tombs, field surveys made by the author in the Wadi Andam and in the western part of Ja'alan in the al-Sharqiyah Governorate (Al-Jahwari 2008, 2010, 2011 & 2013a) [Fig 1].

The aim for carrying out these surveys was to highlight and discuss some issues related to the funerary archaeological landscape during the EBA, particularly in the Hafit Period by examining and

attempting to understand Hafit tombs distribution and density over a widespread territory.

Ultimately, this will help us in understanding the landscape utilization and the relationship between settlements and tombs during the Hafit period. To achieve this, it is important to understand the environmental and human activities and changes in such an arid landscape in order to characterize the relationship between the Hafit populations and their landscape. This can be done through studying the spatial distributional patterns of archaeological remains (such as tombs) and their location on the landscape.

Until 2004, when I started my survey in Wadi Andam, there was no systematic survey carried out in the Oman Peninsula to examine and attempt to understand the distribution of Hafit tombs over a large area. Only a few examples had been excavated in sporadic areas such as the few excavated Hafit tombs in northern Oman at, for instance, Jebel Hafit and the Buraimi Oasis (Frifelt 1975a; Cleuziou 1976/7); Ibri (Frifelt 1975a & 1975b); and Tawi Silaim (de Cardi, Doe & Roskams 1977; de Cardi, Bell & Starling 1979). No single study has attempted to do excavations of examples from different areas in order to examine regional differences and similarities. Moreover, dating these tombs is one of the big problems of Omani Archaeology (Al-Jahwari 2008: 72-74). Thus, since 2004 one of the author's aims is attempting to map the distribution of Hafit tombs in different geographical zones within the Oman Peninsula. The results of these attempts are the focus of this paper.

THE HAFIT CHRONOLOGY AND PERIODIZATION

The term 'Hafit Period' was adopted by a group of archaeologists working on the archaeology of the

Oman Peninsula in their meeting held on 14th June 1981 at Tübingen. It refers to the period between the late 4th and early 3rd millennium BC (Potts 1990: 73, note: 66; Parker et al. 2006: 473). The period is characterised by a large number of burial tombs that are located all over the Peninsula, mainly in the mountainous areas. The first evidence for this period was brought to light by the excavations carried out by the Danish Expedition in some burial tombs at Jebel Hafit in the Buraimi area (Frifelt 1970: 355-383, 1975a-b). Frifelt (1970) dated the tombs to the late 4th/early 3rd millennium BC based on the recovery of Mesopotamian pottery of Jamdet Nasr and Early Dynastic I-type (ED I) within these burials (Frifelt 1970, 1975a-b; 1979: 51-57; 1980). This date has generally been accepted by scholars (Cleuziou 2002: 196). Later, more tombs were excavated by other teams and their dates as well as cultural evolution have been widely discussed (Al-Jahwari 2013a: 23).

It is also accepted that the single-chambered Beehive tombs were used during the early 3rd millennium BC (Potts 1990: 77). Their first discovery was at Bat by the Danish Expedition to Oman (Frifelt 1975a: 57-80; 1975b: 359-421; 1976: 57-73) which provided evidence for the early 3rd millennium BC based on the typical Jamdat Nasr finds in Mesopotamia. This led Frifelt to propose that Beehive tombs are a possible link or transitional type between the 'Jamdat Nasr/Jebel Hafit' cairn burials and the Umm an-Nar collective tombs. In addition to the pottery discovered, opinions on the site development were based on the tomb's architecture between 'Jebel Hafit' tombs and the Beehive tombs. Frifelt (ibid: 57-80) argued that the Beehive tombs involve an architectural transition in which their burial chamber is wider than that of the 'Jamdet Nasr' tombs. Additionally, their burial chamber shows a similar characteristic to the burial chamber in the Umm an-Nar tombs in that it is divided into two rooms by an inner wall and a similar outer plinth around the tomb (ibid: 76). She also argued that pottery assemblages from the Beehive tombs might represent wares of both the 'Jamdet Nasr' and the Umm an-Nar periods (ibid: 69). This transitional development has been accepted by several scholars. Al-Tikriti (1981: 81) and Cleuziou (1982: 17-18, 1984: 377) argue that it is possible that there was a local development from the Jamdat Nasr/Hafit to the Umm an-Nar burials.

Their argument is based on their occurrence in the same locality around Hili. They indicate that similar tombs are located on the Jebel Huqlah in which the number and shapes suggest the presence of more than one period (al-Tikriti 1981: 81). They might also include the cemetery of the Hili 8 settlement during the early 3rd millennium BC (Cleuziou 1984: 377). By contrast, Potts (1986: 132; 1990: 78 & 1992: 67) argues that the few recovered finds from some of the excavated Beehive tombs seem to be questionable.

Vogt maintains that the Hafit/Jamdat Nasr and the Umm an-Nar tombs are different types of a single architectural form built in the same period, and that there is no clear chronological or architectural difference between them (Vogt 1985: 58–105). He argues that the different appearance between both types (e.g. tombs and Beehive) is due to the local stones used to build the tombs. For example, the Beehive-like tomb is built of flat limestone slabs found in areas where it was easy to cut or break them. By contrast, tombs are built in locations where rounded gravel or stones are available. The same observation has recently been made by Schreiber (2007b: 123–124) at Izki.

It was argued (Cleuziou 1980: 26) that despite the attempts noted above it was impossible to not avoid the problem of lack of proper stratigraphy in the Oman Peninsula itself. Cleuziou (1980: 26; 1982: 16) claims that the Hili 8 sequence provides this stratigraphy, which indicates that there is no gap between the 'Jamdet Nasr Horizon' of the Jebel Hafit (3,400-3,200 BC) and the construction of Building III at Hili 8. Excavations at the Hili 8 settlement provide a sequence that has been divided into three major periods subdivided into several phases (Cleuziou 1980, 1982, 1984, 1989a-b, 2002). Dating these periods and their phases was based mainly on pottery assemblages as well as C14 dates and other recovered materials. The earliest occupational level of this site is called Period I (early 3rd millennium BC). Pottery from this period's layers is very rare, and mostly from Phase Ib (Cleuziou 1989b: 49).

Only three small jars of light brown paste show definite Mesopotamian pottery-type characteristics, which have been compared with those vessels from southern Mesopotamian contexts dated to Jamdat Nasr or ED I–II (Cleuziou 1982: 3; 1989b: 75).



FIGURE 1. Study Areas of Wadi Andam and the western part of Ja'alan.

Dating was also confirmed by C¹⁴ dates obtained from two charcoal samples (MC 2266 & MC 2267) from hearths or fireplaces of Phase Ia (see Appendix D, Table D.6) both of which date to the very late 4th/early 3rd millennium BC (Cleuziou 1980: 20, Table 1: 32; 1982: 15–17; 1989a: 63–64; 2002: 195).

Based on this evidence, Cleuziou (1982: 18) suggested that Hili 8 shows continuity in the evolution of the Oman Peninsula during the whole 3rd millennium BC. This confirms the date for the Jebel Hafit material proposed in 1986 by Potts who placed it between the end of Jamdat Nasr and ED I in Mesopotamia (Cleuziou 1989b: 51). Therefore, Cleuziou (1982: 3, 1989b: 51) suggested that there is contemporaneity between Period I at Hili 8 and the Jebel Hafit horizon (Jamdat Nasr and ED I in Mesopotamia). This proposal confirms the suggestion made by Frifelt in 1970 that the Beehive tombs at Bat are a possible link between the 'Jamdat Nasr' and the 'Umm an-Nar' tombs of the Oman Peninsula (Cleuziou 1982: 17; 1989b: 75).

The paper will present the results of the author's two attempts to study the distribution of Hafit tombs in Wadi Andam and the western part of Ja'alan. However, before going into further details of this attempt and its results, it is important to briefly highlight the geological and geographical characteristics of these two areas.

PALEOCLIMATIC CONDITIONS

The paleoclimatic conditions of this region are not unlike other parts of Oman. Numerous anthracological, palynological and palaeoclimatic studies have been undertaken in the Oman Peninsula (e.g. Glover 1998: 67; Burns et al. 1998 & 2001; Tengberg 2000: 154-155; Preusser, Radies & Matter 2002: 2018-2019; Lézine et al. 2002; Fleitmann et al. 2003; Preusser et al. 2005; 396; Radies et al. 2005; Parker et al. 2006: 465-476; Parker et al. 2006: 125-130). In particular, fieldwork data from the deserts of the Oman Peninsula including the Wahiba Sands and the Rub' al-Khali, and mountain caves including the Hoti Cave, have shed light on the peninsula's palaeoclimates. The evidence from the Hoti Cave and Awafi in the Rub' al-Khali indicates that during the Early Holocene (ca.10,000-5,500 BP) there was a wet phase with short intervals of increased aridity around 8,200, 7,900 and 7,600 BP (Parker et al. 2006: 472). Speleothems from the Hoti Cave suggest that there was a regular decrease in moisture until 2,700 years BP, following an intensive rainfall and wet phase that occurred in the Early Holocene (Radies et al. 2005: 122). Around 5,500-5,200 BP an analysis of the Awafi sediments suggests that there was a key arid period followed by a wet phase around 5,200-4,200 BP. However, after 4,200 BP there has been increased aridity that appears to have continued to the present day (Parker et al. 2006: 472-474). This evidence indicates climate conditions that could have supported human life in the period from the end of the 4th millennium BC to the middle of the 3rd millennium BC. This is the time when the people of Hafit established their large tomb-fields all over the peninsula. It will later (see below) be argued that such arid conditions, together with the semi desert vegetation, have continued up to the present day. This, as will be discussed later, perhaps resulted in the existence of pastoralism during the Hafit period and onwards.

METHODOLOGY

The analysis in this paper was based on a tentative quantified analysis carried out by the author in 2008 (Al-Jahwari 2008: 264-; 2011). This analysis was made in order to understand long-term trends in the settlement history of the Oman Peninsula. To achieve this, a database of sites was created using the research literature carried out in the peninsula (for more on the methodology see Al-Jahwari 2008: 268-273; 2011). In fact, none of the previous surveys carried out in the Oman Peninsula have attempted to quantify sites or settlement activity over time. They did not set out to provide a reliable quantified picture, but rather explored and located sites of specific interest, or dealt with specific research questions. This has resulted in a biased picture and a misrepresentation of the actual levels of activity. This fact clearly raises the question of whether this type of evidence can be at all taken as representative of past settlement patterns and trends. Ultimately it was decided to attempt an analysis to see what sort of indications this information might give, bearing in mind that the data is problematic and incomplete. At the very least the analysis served to characterise the information that is presently available (Al-Jahwari 2011).

The analysis in this paper will also be based on two areas of Hafit tombs surveyed by the author. The first attempt to study and analyze the distribution and density of Hafit tombs over the landscape was carried out by the author between 2004 and 2005 (Al-Jahwari 2008: 144-161). It included a rough distribution of Hafit and Beehive tombs from the northern watershed through the lower wadis, gravel hills and broad wadis, to the southern gravel flat interfluves along the Wadi Andam in the al-Sharqiyah Governorate. This was done in order to locate them and understand their distribution and density. Fourteen sub-areas were surveyed for a total of around 183 km² [Fig. 2].

The second survey was carried out in the western part of Ja'alan. It consisted of three seasons of investigations from January to February 2010, 2011 and 2012. The area was divided into 16 sub-areas to facilitate the documentation process with a total area of 159.326 km² [Fig. 3].

All divided sub-areas in the Wadi Andam and the western part of Ja'alan were surveyed and their archaeological remains were fully documented. All recorded archaeological remains were entered into databases which include all related data. Surveys in all these sub-areas were carried out on foot, in which all types of terrain (e.g. rocky and gravel hills, their slopes and foothills, wadi terraces and flat interfluves areas) were checked for archaeological remains, including tombs. They were all fully recorded using GPS for coordinates and elevations, and they photographed, described and checked for finds. Finally, their total number was plotted on a map and satellite imagery in order to understand their distribution and density as well as their relation to other types of evidence [Fig. 2 and 3]. Different programs were used to analyse the collected data and to create the required maps.

DISCUSSION OF THE RESULTS

The quantified analysis of the long-term settlement patterns in the peninsula (Al-Jahwari 273-309) indicates that there was an increase in the level of activity from the Stone Age to the Hafit Period [Fig. 4]. The quantified data show important changes in the number of sites. It has also been possible to demonstrate sub-regional variations in the number of sites. The data for the period between the Late Stone Age and Hafit Period [Fig. 6] reveals that there was

an increase in the number of recorded sites in Central Oman, and in the Hajar Mountains sub-regions. It also shows that there was a stable level in the Batinah and Eastern Coasts, while there was decline in the Abu-Dhabi Coast, Musandam and Northern Emirates.

The high percentage of Hafit sites within the Hajar Mountains and in Central Oman might be related to the fact that this period is almost completely represented by large numbers of tombs distributed all over the peninsula. Hafit tombs are very commonly found on the rock and gravel hills within these two sub-regions. It is probably the case that the inhabitants of the Hafit period buried their dead in high elevation areas in order to protect their tombs from sedimentation and erosion. On the other hand, Hafit occupational sites are very difficult to recognise and, therefore, there is very little evidence for them. If these sites were found and counted, they might somewhat change the picture. It is also possible that there is a core 'Hafit' area within the centre of the area, where the Hafit period is better represented than in other sub-regions (Al-Jahwari 2013a: 139).

Looking at the type of sites, the quantified data [Fig. 5] also show that the Hafit period is more commonly represented by tombs. This large number of tombs from the Hafit period is related to the fact that few or no settlements, have yet to be found. This period is more commonly represented by Hafit tombs, which are distributed all over the peninsula, particularly in mountainous areas, making them subject to a high degree of survival and easy to spot by surveyors.

Field surveys in the Wadi Andam and the western part of Ja'alan also offered an important data about the Hafit period funerary landscape. Both surveys yielded a large number of Hafit tombs (tombs and beehives), in which their location and distribution over the landscape can provide important data about the area utilization during the Hafit period. A total of 7204 tombs were recorded and mapped during both surveys: 2192 in Wadi Andam and 5012 in the western part of Ja'alan.

Such a large number of collective tombs in all likelihood indicates a substantial population, which must have had its settlements somewhere not too far from where they buried their dead.

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FIGURE 3. Hafit tombs recorded in the Western Part of Ja'alan.

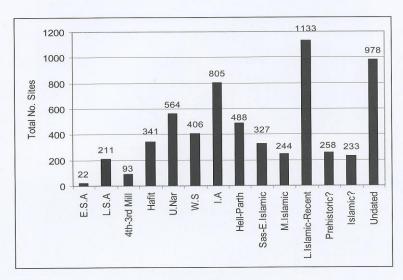


FIGURE 4. Total number of sites by period, showing an increase in the level of activity from the Stone Age to the Hafit Period.

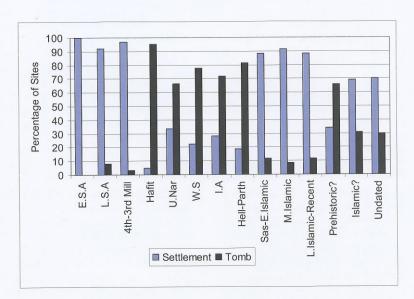


FIGURE 5. Total percentage of settlement and tomb sites by period (percentages based on the total number of sites by period).

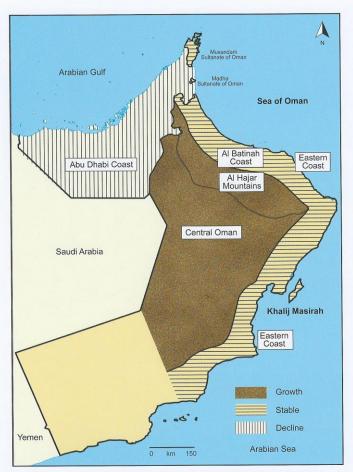


FIGURE 6. Level of activity between the Late Stone Age and Hafit periods (Al-Jahwari 2008: 284).

The author (Al-Jahwari 2008; Appendix G) has attempted to make an approximate calculation of the possible population size based on the number of tombs located during the Wadi Andam survey: the total number of burials, a presumed 45 years life expectancy, and the period of use of the structures. This calculation can only be imprecise, due to a lack of data for a number of variables: it is impossible to know how many tombs have been destroyed; and there is also a lack of data regarding the total number of burials in the tombs and their life expectancy.

The number of individuals interred in the structures varies across the few excavated Hafit tombs; from between one to four burials (Frifelt 1975a: 67; 1975b: 386 & 1976: 57), to as many as 30 (Salvatori 2001).

Inaccuracy is exasperated by the fact that none of the tombs in the Western part of Ja'alan have so for been excavated. Although it is not possible to accurately estimate the size of the Hafit population, the tombs themselves can still provide some indications as to the use of the funerary landscape, as well as everyday occupational practices which ultimately might shed light on the nature of the Hafit economy.

TABLE 1. Total density of tombs recorded in Wadi Andam and the western part of Ja'alan.

Survey	Total area / km²	Total tombs	Tombs' density / km²
Wadi Andam Survey	183	2192	11.9
Western part of Ja'alan	159.326	5012	31.46





FIGURE 7. Structural remains for possible platforms.

Considering the total density of tombs [Table 1], it is notable that their density is 11.9 per km² in Wadi Andam and 31.46 per km² in the western part of Ja'alan, suggesting a high density. It has been suggested (Al-Jahwari 2013b: 159) that this high tomb density might be related to the topography and hydrology of the area as well as the location and distribution of the tombs. The tombs' density is higher in areas that are characterized by higher elevations. The tombs' location on high elevations makes them more visible and subject to survival on the landscape. In other words, the location of the tombs is intentionally chosen to serve specific purposes for the people who built them.

The evidence from both surveys shows a large number of tombs clustered in extensive burial grounds in areas that did not show any evidence for the later periods (Al-Jahwari 2008: 322). Moreover, no settlement remains were associated with these tombs or nearby, which does not help us in understanding the settlement pattern of the people who were buried within these tombs. Few settlement remains of this period have so far been found in the Peninsula: Hili 8

(Cleuziou 1980; 1981; 1989a-b), Ras al-Hadd HD-6 (Cleuziou 2003: 141) and Bat (Possehl, Thornton & Cable 2009, 2010 & 2011).

The reasons behind this absence of settlement remains dated to the Hafit period are difficult to understand. The author has (Al-Jahwari 2008: 150-151 & 2013b: 163) suggested that this lack of Hafit settlement remains might be related to the nature of occupation. It is possible that the population using these tombs were perhaps nomadic pastoralists living in temporary perishable 'campsites', using the area as grazing land for their animals, so it is unlikely to find their remains. The only archaeological remains that can possibly be indicative of such type of structures are stone piles, foundations and possible platforms [Fig. 7] that are found in locations not far from the tombs. However, none of these structural remains can be dated due to the fact that none of them yielded any datable material. Thus, although caution must be borne in mind, one cannot dismiss the possibility that there is a relationship between the tombs and these unidentified structures but interpreting them still awaits further work.

The existence of a large number of Hafit tombs in an area is an indication of an activity practiced by a group of people who must have had a place to live in. However, their settlement remains have so far not been found, suggesting that they were perhaps built of perishable material. The construction of this large number of tombs by those people must have had a reason and a purpose. To understand the purpose of constructing these tombs, their patterns and function, it is important to examine their location, position, concentration, density and distribution with regard to the ecological potential of the region. To achieve this, it is important to first understand the environmental and human activities and changes in such an arid landscape, which ultimately will help in understanding the relationship between the tombs, their builders and the landscape.

As stated earlier, the climatic conditions in eastern Oman during the Hafit period could have supported human life. The evidence indicates that during this time there was a major arid period. It is argued that during the Middle and Late Holocene times there was a climatic optimum (période humide arabique), following which the climate has become increasingly arid up until the present (Sanlaville & Dalongeville 2005).

Moreover, it is argued (Lézine et al. 2002: 229; Van Campo 1983; Sirocok et al. 1993) that during the Early and Middle of the third millennium BC the landscape in the Oman Peninsula was semi-desert with few summer rains, with the vegetation of eastern Oman dominated by Prosopis cineraria, indicative of an arid climate. Palynological studies indicate that by the end of the 4th to the mid of 3th millennium BC some semi desert plants began to appear (e.g. Prosopis spp., Acacias spp., Ziziphus spina-Christi) (Lézine et al. 2002: 228; Tengberg 2000: 154). These climatic conditions are not so different from the current ones.

The present geographic and climatic conditions in the sparsely inhabited Wadi Andam and Ja'alan regions are characterised by acute aridity with low, irregular rainfall and high evaporation. The landscape of both regions is characterised by mountainous areas that are crossed by a number of wadis. Several of these wadis forms a stretch of low land lying between hills and mountains and seasonal rain water flow [Fig. 8] through them, making their watercourse rich with seasonal and permanent vegetation [Fig. 9] such as short annual grass, dwarf shrubs and thorny trees.

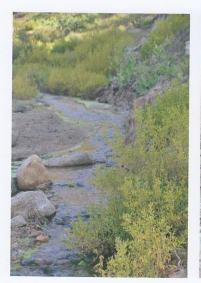




FIGURE 8. Surface water during seasonal rain in the study area.





FIGURE 9. Surface water during seasonal rain in the study area.

In such conditions, it is possible that the people of Wadi Andam and Ja'alan, during the Hafit period, were pastoral societies travelling from one location to another in search of grazing lands for their livestock. It is also possible that the seasonality of pasture forced these pastoral societies to mark grazing areas as tribal territory (Al-Jahwari 2013b: 166). This marking is perhaps to protect and control such territory from being used by other pastoral groups roaming in the same area. It has recently been suggested (Deadman 2011 & 2012; Al-Jahwari 2013b: 166) that tombs are some possible ways of marking. This conclusion has been drawn based on the tombs' distribution over the landscape, their location being built on high and visible positions, their concentration, closeness to the wadi watercourse and/or date palm groves as well as the viability of natural resources (Al-Jahwari 2013b: 167). Taking the tombs' location into consideration, it appears that they are located in elevated and highly visible parts of the terrain, making them a dominant feature in the landscape. Several scholars (Giraud 2009: 748; Cleuziou & Tosi 2007: 132; Deadman 2012: 33; Al-Jahwari 2013b: 167) believed that the tombs' positioning relates to the concept of marking of a tribal territory. Furthermore, if we look at the tombs' position over the landscape, the evidence shows that they are concentrated on the northern parts, in particularly mountainous areas that are crisscrossed by a number of wadis, making them more attractive for the inhabitants of Hafit.

To sum up, field observations from the two surveys in Wadi Andam and the western part of Ja'alan are good indicators for the idea that these tombs were constructed by the Hafit pastoral groups as territorial markers to define their control and

ownership of grazing lands. It should, however, be stated clearly that more work is needed on such suggestion.

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