The Neolithic Sites in the Gezi-ra Reach-Central Sudan

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Research undertaken in the context of the archaeological survey of the mid-Gezira State in central Sudan, between the White Nile and the Blue Nile, resulted in the discovery of three new prehistoric sites, dating to the Neolithic. The sites of Abu Gwaili, Goz Al-Rehaid and El-Sidaira are located near palaeochannels, active during the Early and Middle Holocene. The study relied on the general archaeological survey of the region, and surface collection of finds in areas demarcated within the sites. An important result from the survey was the identification of Neolithic sites in the region. It would be pertinent to conduct systematic excavations aiming to broaden our understanding of prehistoric archaeology in this area south of Khartoum.

Introduction

Archaeological survey conducted in the central area of the Gezira Reach followed two branches of palaeochannels. The first - the eastern branch - away from the Blue Nile and at the starting point of the study area c. 8 km distant from the Nile, but this distance increases when moving north-west. This section was surveyed as part of my MA (Hayati 2011: 115). The second branch, the western section of the survey, is distant from the Blue Nile c. 22 km, towards west in the direction of the White Nile, in a flat area that includes the western part of the Gezira Reach and the territory of the Gezira Agricultural Project (Figure 1). Beyond the western borders of the Gezira Project is a vast area used for rain fed agriculture and grazing. This second branch joins the White Nile in ElGeteina and has been surveyed in the context of my doctoral research (Hayati 2016). In addition to these two, there are numerous other small palaeochannels around the Gezira region.

Figure 1: General view of the region and the three Archaeological sites.

Geographic background of the study area

This study encompasses a region containing cultural and natural geographical features needing explanation and clarification, while also linking the cultural components with the natural surroundings. This study attempts to assess the natural features characterizing the area, and that affected the people who lived here during the Mesolithic and the Neolithic periods. The study area, located in central Sudan, in the middle of the Gezira State, lies between the White and Blue Niles, where the land is a muddy and flat plain.

The climate and the environment

The region has seen a number of climatic and environmental changes. If we consider the palaeoclimate and palaeoenvironment in later prehistory, the region has been affected by both climatic and environmental factors that prevailed during the Early and Mid-Holocene. It is known that this era was characterized by fluctuations in precipitation, evidence of heavy rains and humidity levels during the early Holocene period in central Sudan. Therefore, these heavy rains that resulted in a significant enrichment of the environment are visible through the presence of palaeochannels, as well as traces of cultural remains (for example, abundance of grinding stones). The area was also impacted by the Mid-Holocene drought which affected most of the Nile Valley (Lario et al. 1997: 385). Today, the area is characterized by low rainfall savanna in the center and south of the Gezira plain, where the rainfall begins in May and continues until October. During these months, the rainfall oscillates with the south-western winds that can lead to heavy rains (El-Tom 1974: 67).
northern area, on the other hand, is part of the belt of the semi-desert region. Therefore, the study area is located at the border between these two regions (Wickens 1982: 35-36).

Archaeological Survey

The survey identified three archaeological sites: Abu Gwaili, Goz Al-Rehaid and El-Sidaira, which are described and analyzed below.

Abu Gwaili (14 ° 42’ 02” N, 033 ° 13’ 39.6” E)

Abu Gwaili is located c. 10.5 km west of the Blue Nile, in the eastern side of a palaeochannel, and spans over an area of about 1 km². It is bordered by the village of Abu Gwaili on the east, the El-Hasshisa-Tabat road on the northern side, and the village of Wad ElSayid on the south.

This site is located on a semi-flat area with low elevation, sloping towards the edge of the eastern palaeochannel. The soil consists of clay mixed with sand, with a predominance of hard clay and some pebbles. *Cassia senna* trees, short spinal trees and dry herbs cover the surface of the site. Inside the palaeochannels there are several small ponds that fill during autumn and retain water for a number of months. In this region, the palaeochannels are characterized by their shallowness.

Archaeological study of the site

A general survey included the inspection of the surface of the site, of its natural and cultural components, the report of its preservation, as well as that of its surroundings, with the identification of destruction factors, and collection of surface samples. At the center of the site, a rectangular area was marked and all the archaeological artifacts within this area were collected. The location of the intensive sample collection was selected due to its lo-
cation within the study area, combined with a remarkable presence of archaeological finds on the surface. Another factor for the selection of this area is the potential for destruction and thus the need for the site to be documented.

The artifacts collected included mainly potsherds (578), fragments of grinding stones (42), in addition to stone tools (79), most of them debitage. It is clear that the pottery collected is from the Neolithic, perhaps late Neolithic (Figure 2). Of note is the scarcity of finished tools, despite the prevalence of debitage. This may mean that the area could have been a workshop for the manufacture of stone tools, even if the region is poor in raw material. Various types of spiral snails were found throughout the site, as well as piles of ash and a quantity of faunal remains. We also collected fragments of beads and ivory artifacts. (Table 1) The artifacts collected are evidences of the cultural evolution of the region (Figure 6).

Goz Al-Rehaid (14° 35’ 37.3”N, 032° 59’ 7” E)

Goz Al-Rehaid is located on the western branch of the palaeochannel, which in this region flows west, and as such the site spreads out to the north of the palaeochannel, with an extension of the site on the outskirts of the northern part of the palaeochannel. The site is located at about 26 km west of Abu Gwaili, and it is bordered in the north and east by farm land. The small settlement of Haj Al-Siddiq is located to the west; to the south is a road and, southwest, the larger village of Goz Al-Rehaid Almasallmia.

The site lies on a low-rise area, sloping towards the south and extending over a vast region of approximate-ly 1.5 km². The palaeochannel in this area was vast and this led people to live around the swamp area, certainly more attractive due to the availability of natural resources.
for the economy of the Mesolithic and the Neolithic. The soil is mud and sand, with the presence of white quartz pebbles and Nile chert. It is also notable that the water flow in this region has led to the accumulation of sand dunes that became very solid due to natural factors.

The archaeological survey of the site

This is the first archaeological research to be conducted at Goz Al-Rehaid, which was previously never surveyed or excavated. The site was chosen for research due to its location within the target study area and to the scatters of archaeological remains on its surface. Similarly to Abu Gwaili, a rectangular area was established at the center of the site (4x2m), and all the artifacts within this area collected. The surface collection yielded a total of 332 ceramic fragments, 46 stone tools (Figure 3), 54 grinding stones, including complete stones and fragments, and 8 fragments of bone. We identified the layout of the site, the nature of archaeological samples, and of the natural surroundings of the site. It is one of the largest sites recorded in the area. It includes different types of Microlithic tools made of diverse stone material, particularly quartz, rhyolite, granite, flint and basalt and characterized by the high quality of the tools; the grinding tools are made mostly of gneiss. A number of ivory artifacts and others made of animal bone, most of them lip plugs (Figure 4) were also collected. In addition, diverse types of pottery from the Neolithic were identified. In general, it is notable that this site is rich, with large quantities of artifacts, snails and shells scattered on its surface, but it is being greatly affected by natural destruction.

Al-Sedaira (14° 36’ 21.4” N, 032° 57’ 0.51” E)

Al-Sedaira is located about 11 km southwest of Goz Al-Rehaid, on the north-eastern side of the village of the same name. It is bordered by a forest on the eastern side, agricultural lands on the north, and the by short spiny trees on the west. Although the village of Al-Sedaira separates the site from the palaeochannel it is located on its northern edge. The site is located on a flat plain with soil constituted mainly of mud and sand and characterized by its rigidity. It is semi-circular in shape with a diameter of about 600 meters. In addition to short grass and shrubs, the site is surrounded by different kinds of spiny trees, mainly *Balanites aegyptica* (Heglig), *Acacia mellifera* (Kitr, Laot) and *Calotropis* (Usher).

![Figure 5: Grinding tools and stone rings (Al-Sedaira).](image-url)

**Figure 5:** Grinding tools and stone rings (Al-Sedaira).

The archaeological survey of the site

This survey is the first archaeological work undertaken at this site, revealing that it is poor in archaeological remains (Table 1), maybe due to human and natural factors. However, even if the ceramic is of very poor quality it is spread throughout the site’s surface and considering its decoration it may be attributed to the Neolithic. Other material found included stone tools with grinding stones (Figure 5) and the remains of human and animal skeletons scattered on the surface.

Discussion and conclusion

It is clear that the Gezira region was culturally rich during late prehistory. The heavy rainfall during the wet periods of the Holocene stimulated people to live in the areas adjacent to the palaeochannels, and the Gezira plain was an appropriate place for animal husbandry and
agriculture. If we compare the archaeological data from this region with data from the middle Nile region, we can observe strong cultural relations, as well as technical exchanges. Thus, the Nile played a main role as a cultural blender, as it allowed for social interactions that seem apparent from the pottery motifs of the early and late Neolithic periods. Although the pottery finds are sherds not complete vessels, similarities and differences can still be identified. These relations are clear when looking at archaeological evidence from the Khartoum region (Arkell 1953), and the Butana areas, adjacent to Khartoum, such as Shaqadud (Mohammed-Ali 1991: 65-66). The materials from Gezira are similar to those found in west Butana, close to the eastern bank of the Blue Nile (Fernandez, et al 2003: 235). Most of the pottery motifs relied on combining techniques, with straight lines, dotted straight lines and geometric motifs, zigzag motifs, and rippled decoration. Despite differences, the ceramic assemblage shows considerable homogeneity.

In relation to the stone tools, several types and techniques are apparent. However, the most remarkable is the presence of gouges in Goz Al-Rehaid, scattered on the surface (Figure 3), similar to those found in Shaheinab (Arkell 1953) and El-Geili (Caneva 1988). Also, characteristics of the sites are ground-stone and hand axes that dominate the stone tool assemblage. In addition, there are Microlithic tools, including different types and sizes of scrapers, perforators, crescents, blades, backed blades and bladelets. Furthermore, there are various shapes of debitage remains, particularly in Abu Gwaili. The stone tools yielded by the three sites surveyed are made of different types of raw materials, with quartz being the pre-dominant material. Grinding tools are also present in all the three sites. The ornamental tools, particularly those found in Goz Al-Rehaid, are striking (Figure 4), and most of them are similar to artifacts found at Goz Kabaro (Balfour Paul 1952, Fig 8), a site close to Abu Gwaili. The faunal data yielded evidences of several Mollusca, such as land snails, Limicolaria martensiana, mphpalaria, in addition to some unidentified bone remains that require further study.

In general, the cultural sequence of the sites surveyed may date from the 5th to the 3rd millennium BC, or from Early to Late Neolithic according to the archaeological data, although they include some finds from the Mesolithic. All the three sites need more specific and detailed studies, as the research presented here is only a general survey. Therefore, further detailed surveys and excavations need to be conducted in the area, especially considering that the sites are under threat of damage and destruction.

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Table 1: Number and percentage of the finds, with comparison between the sites and the finds.

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Figure 6: Comparison of the total account of the remains from the Archaeological sites.
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