

The Geographical distribution of prehistoric sites in the region of Biskra.

Badreddine Selahdja^{1,*}

¹University of Constantine 2 (Algeria), badreddine.selahdja@univ-constantine2.dz

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Abstract

The region of Biskra is characterized by a wide diffusion of prehistoric sites, where we have determined in this study the method of their geographical distribution and their archaeological content, by combining the results of previous studies that have dealt with the subject in the region, and in particular the study carried out by the researcher Ballais between 1979 and 1982, with the field study that we have been conducting since 2017 in the region, which has enabled us to complete a map of 19 sites in which the lithic industries are distributed differently from one site to another. This study shows in particular the nature of the archaeological content of the sites studied, the mode of its diffusion, and the factors contributing to it. The field data has been exploited to create illustrative maps using the Geographic Information System, which will determine part of the way of life and prehistoric settlement in Biskra.

Keywords : Ziban ; Prehistory ; Biskra; Lithic industries · ; Geographical Distribution.

.Corresponding Author.

I-Introduction :

The lithic industries are the most important archaeological evidence and a major witness to human activity in prehistoric times; these industries also represent the most prevalent remains in prehistoric sites due to their solid nature. Humans exploited the raw materials of the stone, in particular the Flint, to manufacture the tools which he uses in his daily life, where he left them in the various places where he lived such as caves, shelters and open sites on the surface.

Prehistoric lithic industries are widespread in vast regions of Algeria, particularly in the region of the Saharan Atlas, of which the region of Biskra is a part. This region is characterized by a distinguished geographical location, as it occupies the south-eastern part of the Saharan Atlas series, and this region is known for the diversity of its topography and its sedimentary components, where the raw materials of stone are abundant, like Flint, especially in the northern part, which has many prehistoric sites.

Many researchers have attempted to define the spread of lithic industries in Biskra, and have focused their attention on the western part of the Ziban (Ouled Djellal), which was administratively affiliated to the wilaya of Biskra, but after the new administrative division which separates the two regions from each other, we noticed that the eastern region of Ziban (Biskra) lacks research compared to the region of Ouled Djellal, and we found in previous research only a few references to the spread of Caspian industries in Biskra and Ain Naga without geographical identification of the sites, but during our field research that we have been conducting since 2017, we have observed a wide spread of prehistoric lithic industries there, and this is what we wish to highlight.

For an integrated study of the region, we relied on the unique study conducted by the researcher Blais, during which he discovered 12 sites distributed in the northern and eastern part of Biskra. The stone industries are distributed in these areas with varying intensity, and they belong to different periods of prehistory, and he also provided a good description of their archaeological content and their geographical location, which helped us to determine their geographical coordinates.

After the field research we conducted in the region, we were able to discover seven new sites, distributed in particular in the north and west of the region, and this enabled us to cover a large part of the areas in which the lithic industries are widespread in Biskra. In addition, we have created maps for the spatial and geographical analysis of this archaeological heritage, in order to highlight the richness of Biskra in terms of prehistoric sites.

II- Definition of the studied area

Biskra is located in an important geographical area of southeastern Algeria. It is bordered on the north by the Wilaya of Batna, on the east by Khenchela, on the west by M'sila and Ouled Jalal, and on the south by El Oued and El Mughayer (Fig. 1), Between points 4° and $6^{\circ}E$ and 33° and $35^{\circ}N$. It is considered as a transition region between the Saharan Atlas area and the desert plains extending to the south (Benchouk K, 2012, p. 18).





The presence of the region of Biskra in the natural environment located between the east and the south-east of Algeria, characterized it by a great diversity of reliefs, and we can say that it contains all the geographical components known in Algeria, and it is generally divided into four different regions represented in the mountains, plateaus, plains and depressions in which it is located Chott's (Gouskov, 1962) (Dubost D, 1998) (Bougherara, 2009). The mountains are located in the north of the region and are considered as an extension of the Saharan Atlas chain (6 منوسي، 2006, منوسي), while the plateaus extend in the western part of the area and it include the region of Tolga (Guemaz, 2006, pp. 20-21), as for the plains, they are characterized by low elevations ranging between 50m and 220m above sea level, and we distinguish among them Outaya, Tolga, Sidi Okba and Leghros plain (29 منوح، 2020، منوح، 2020, pp. 21-22).

The region of Biskra is also characterized by an important hydrographic network which contains many watercourses which supply the main valleys such as Oued Djedi, Oued Biskra, Oued Al Arab and Oued Al Abyudh (Hannachi S, 1994, p. 4). Geologically; Biskra is characterized by sedimentary formations that differ from the north of the region to its south. The northern mountains are sedimentary formations dating from the secondary era (Mesozoic), while the plateaus are formed from the deposits of the Tertiary (Cenozoic), and the sedimentary formations of the plains date from the Quaternary, Thus the sedimentary group of the region is formed of different materials such as sandstone, clayey sand, dolomite and limestone (ANAT, 2003) (Gouskov, 1962) (Fig.2).

III- Research history on prehistoric sites in the region:

The Ziban region in general, and Biskra in particular, contains many prehistoric sites that researchers have referred to in the midst of their research of the region, and the western side of it (Ouled Djellel) has received more attention from researchers. The researcher Roffo discovered many prehistoric sites such as the site of Oued Hamara in the south of the region (Roffo, 1938, pp. 288-290), and the researcher Marchand

discovered many sites of diffusion of lithic industries, which he attributed to the Capsian civilisation, like the site of Hassi Sida, Oued El-Assal and Doucen (Marchand, 1939, pp. 312-317). The most important research carried out on the prehistoric sites of the region was the research of Grebenart between 1970 and 1976 on the stratigraphy of the typical and upper capsene stage at the site of Ouled Djellel (Rahmani, 2003, p. 19).



Extracted from the geological map of Algeria and modified by the GIS system



The eastern region of the Zibans (Biskra), has not received the same attention as its predecessor in research on prehistoric sites, with the exception of a few sporadic studies which define the content of certain sites in the region. Aumassip mentions that R.P. Poyto collected between 1962 and 1963 more than 100 pieces of lithic industries in an Erg close to the region of Biskra without geographical definition of this site, this collection contained 40 pieces of small and flat bifaces which were of different shapes including oval, discoid and almond-shaped, associated with Levallois debitage tools (Aumassip G. , 1991, p. 1) (Aumassip G. , 2001, p. 33), this industry dates back to the evolved Acheulean or possibly terminal (Aumassip G., 2004, p. 107).

Biskra contains a wide distribution of Capssien lithic industries, as researcher Grebenart admits; that this region is part of the southern border areas of the geographical distribution of this civilization (Grebenart, 1993, p. 1760), and that there are important agglomerations of Neolithic industries in the sites of Biskra and Ain Naga, according to the researcher Roubet, C, (Roubet, 1979, p. 40) (Roubet, 2005, p. 4206).

Ballais's research is the most important in the region, in terms of area covered and number of prehistoric sites discovered, where the researcher mentions that in the middle of his research to carry out a doctoral thesis in geomorphology, he discovered many prehistoric sites in the Aurès and its surroundings, and it mentions at least 12 sites belonging to the geographical area of Biskra, including three sites dating from the Paleolithic, the Lahrla site and the two sites of Oued Dermoune, while the majority of the other sites belong to the EpiPaleolithic and the Neolithic, and they are all distributed to the east on the Kantara-Khanget Sidi Nadji axis, passing through Biskra, Chetma and Oumech (Ballais, 1979, pp. 135-148), these searches were unique, where the researcher described the geographical situation and the archaeological content of the sites

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discovered while trying to define their cultural affiliation (Ballais, 1979, pp. 135-148) (Ballais J.L, 1982, pp. 375-384), which gave us a broad vision of the spread of prehistoric lithic industries in the eastern part of the studied area.

In turn, during our research on the prehistoric settlement in the Biskra region since 2017, we have counted many distribution sites of the lithic industry that previous researchers had not approached, especially south of Djebel Ghouara and Djabel Al Aroussine. This region contains agglomerations of lithic industries, such as the northern side of the region of el Ghrous, Tolaga, M'chonesh and Ain Naga, which contain a high density of lithic industry.

IV- Prehistoric sites in Biskra:

Based on the studies of Ballais that included the eastern part of Biskra, which he published in the years 1979 and 1982, and in addition to the archaeological surveys and investigations that we conducted in the west side of the regions, we were able to identify 19 sites containing prehistoric lithic industries (Fig.8).

IV.1.Palaeolithic sites:

The researcher Ballais referred to 12 sites, of which three Palaeolithic sites and nine sites belong to the Epipalaeolithic and Neolithic (Ballais, 1979) (Ballais J.L, 1982).

IV.1.1.Site of Lahrla:

Coordinates: 34°54'29.35"N / 6°24'28.64"E.

This site is located 3 km southeast of Lahrla, along the road connecting Djemina and Zeribet el Oued, at an altitude of 460 m. This site is dotted with remains of lithic industries in Flint with a black patina of Mousteroid or Acheulean appearance (Ballais, 1979, p. 137) (Fig.8.N°1).

IV.1.2.Site of Oued Dermoun:

Coordinates: 34°51'38.03"N / 6°31'8.00"E

It is located on the right bank of Oued Dermoun, facing irrigated crops, at an altitude of 240 m, and characterized by the presence of Mousterian lithic industries (Ballais, 1979, p. 137), this site is located on the borders between Biskra and Khenchela (Fig.8.N°2).

IV.1.3.Site of Oued Mestaa:

Coordinates: 34°53'12.39"N / 6°32'35.46"E

Located on both sides of the Oued, directly at its exit from Djebel Berga, at an altitude between 340m and 360m, this site contains Palaeolithic inferior industries without bifaces, the absence of fauna and hearths makes it possible to envisage a lithic industry knapping workshop, linked to the abundance of raw material, with a wide diffusion of Middle Paleolithic industries, without pedunculated pieces (Ballais, 1979, p. 137) this site is also located on the borders between Biskra and Khenchela (Fig.8.N°3).

IV.2.Epipalaeolithic and Neolithic sites:

The researcher Ballais divides them into two types, surface sites in place and surface sites revamped.

IV.2.1.Surface sites in place:

These sites are characterized by the preservation of their nature and archaeological content in their location without modifications, and this is due to their remoteness from natural and human revamping factors, since most of them are located in elevated areas.

IV.2.1.1.Site of Baniane (Poste optique):

Coordinates: 34°56'45.44"N / 6° 4'10.15"E

This site is located on the southern edge of the Baniane Trail at an altitude of 1010m. Its upper layer is black with a thickness of 30 cm and it contains a large number of trimmed Flint, particularly blades with a white patina (Ballais, 1979, pp. 137-138), (Fig.8.N°4).

IV.2.1.2.Site of Chetma:

Coordinates: 35°12'29.36"N / 5°39'37.96"E

It is located on a mound of the hot springs at an altitude of 120 m and contains numerous flint shards on the eastern slope, associated with animals remains of *Helix*, *Rumina Decollata*, accompanied by the remains of egg shells of *Ostrich* (Ballais, 1979, pp. 138-139), (Fig.8.N°5).

IV.2.1.3.Site of Oued Messaoud:

Coordinates: 35°12'29.36"N / 5°39'37.96"E

Located at the intersection of the red village track of El-Kantara and Koudia Siouana with the Oued Messaoud at an altitude of 510 m, Flint fragments were discovered with skeletal remains of animals of the species *Helix, Rumina Decollata* (Ballais, 1979, p. 139) (Fig.8.N°6).

IV.2.2.Surface sites revamped:

These are sites that have been disturbed since their abandonment due to natural causes or human activity.

IV.2.2.1.Site of M'Chounech inferior:

Coordinates: 34°55'30.68"N / 5°59'20.00"E

This site is located 200 m south east of the old hotel, at the intersection of the two tracks and at 360 m of altitude, and it is characterized by the abundance of flint and chalcedony flakes, set in gray-black silt and covered with openwork scree with a beige patina, in association with remains of *Rumina Decollata* and rare *Leucochroa Condidissima* (Ballais, 1979, p. 139) (Fig.8.N°7).

IV.2.2.2.Site of Tizi:

Coordinates: 35°10'49.62"N / 5°49'40.04"E

North of Beni Ferah (Ain Zaatout), the cornice of Maastrichtian limestones of djebel Nador el Goléa evolved, during the humid periods of the Quaternary, by the detachment of enormous rocky sections of several thousand cubic meters which slid slowly on the Campanian clays by fragmenting. It is on the second bead from the cornice that Neolithic people have stationed, at an altitude of 1140 m, at the foot of a rock shelter.

There are ash deposits with many flaks, potsherds, nuclei and snail shells, with the spread of animal remains of *Leucochroa Candidissima, Rumina Decollata, Helicella Setifensis* and bovine bone remains (Ballais, 1979, p. 139) (Fig.8.N°8).

IV.2.2.3.Site of M'Chounech Medium:

Coordinates: 34°57'22.80"N / 5°57'22.43"E

Located on the flat Maastrichtian limestone, above the previous site (M'Chounech Inferior) at 380m altitude, it is identical to the lower site, but with a greater spread of Flint flakes covered with a brown to black patina, associate with *Helix* remains (Ballais, 1979, p. 140) (Fig.8.N°9).

IV.2.2.4.Site of M'Chounech Superior:

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Coordinates: 34°55'25.66"N / 6° 1'15.03"E.

Located on the right bank of a river which cascades across the M'Chounech fault escarpment, to the south-east of the previous site, it is 390m above sea level and has the same characteristics of the previous site (Ballais, 1979, p. 140) (Fig.8.N°10).

IV.2.2.5.Site of Roumane:

Coordinates: 34°56'42.10"N/ 6°24'17.17"E

Between the oued of Titerhmine and the oued of Mestaoua at an altitude of 660m, two sites separated by a few tens of meters, very large with abundant cut flint and fire stones, without ashes; very revamped by the setting in culture and the installation in terraces, we also find remains of fauna of *Helix* (Ballais, 1979, p. 140) (Fig.8.N°11).

IV.2.2.6.Site of Djar Ouled Bellil:

Coordinates: 35°14'42.73"N / 5°44'31.33"E.



Located 4 km north east of the village of El Kantara at altitude an of 860 m. characterized numerous bv remains of fauna (Leucochroa Condidissima. Otalla sp, Rumina Decollata and Shells) and very rare Flint spread out (Ballais, 1979, p. 141) (Fig.8.N°12).

IV.3.Newly discovered sites:

During our research in the region, we discovered seven sites of lithic industries which extend between the South Atlasic fractures of the Zab mountain range and the southern plains of the region.

The way these industries spread and their density varies from site to site.

IV.3.1.Site of Faidh esSella:

Coordinates :59.47'43°34 "N / 6° 3'57.18"E.

A revamped surface site, it covers a large area about 5 km north of Ain Naga, to the left of the agricultural road in the Faidh esSella area. The altitude of the site varies from south to north between 10m and 100m. This site is characterized by a wide diffusion of the lithic industry in Flint, among them are scrapers, blades, denticulate, microlithic, and a smaller percentage of nuclei made of Flint of various colors, including grey, white and brown.

There is a variation in the distribution of lithic tools in this site, where the density is high on the banks of the stream of oued elfaidh and oued Fadj elMaa, and it decreases as one moves away from these watercourses (Fig.3), (Fig.8.N°13).

Fig.3. Types of Flint (1) and lithic industry (2) from the site Faidh esSella

IV.3.2.Site of Graret Roumia:

Coordinates: 34°48'33.92"N / 6° 3'16.35"E

This site is located south of Kodiat Zarzour, about 10 km from the previous site to the north, it culminates at 100 meters above sea level and is intersected by two Oueds, oued elGuetta and oued Mouileh, it contains the same types of lithic industries of the previous site, and what distinguishes it from the others is the presence of industries in the sedimentary layers on the banks of the Oueds (Fig.4), which we believe result from land reversion due to water runoff torrents that pull lithic tools and mix them with silt and gravel on the edges of Oueds.

It was probably a workshop for knapping tools due to the widespread distribution of the Flint raw material, in addition to the widespread distribution of nuclei and knapping waste as well as the different types of lithic industry (Fig.8.N°14).

Fig.4. Presence of lithic industries in the sedimentary layers, site of Graret Roumia.



IV.3.3.Site of Draa Oulach:

Coordinates: 34°47'57.85"N / 6°10'27.22"E

This site is located 12 km east of the previous site in the eastern part of oued Nmesh Ed-Dib, and is characterized by the presence of many streams sloping from the El Achacha area and Djebel Chamker, and reaches a height to the north of more than 200 meters, and decreases towards the south to reach 80 meters. It is characterized by the same content with the previous site, in particular the nuclei, and the presence of the raw material; white Flint in particular. The

industries that are deployed there are distinguished by a relative patina of brick red color, and the colors of the Flint vary between white, brown and gray, this site contains flakes, burins, gratories and denticulates and microliths (Fig.5), (fig.8.N°15).



Fig.5. Agglomeration of lithic industries and gravel on the edge of waterways, site of Draa Oulach.

IV.3.4.Site of koudiat erRfiss:

Coordinates: 34°45'12.29"N/ 5°28'29.94"E.

This site is located along the road linking the town of Biskra and Tolga on the north side, 12 km west of the town of El Hadjeb, where the lithic industries are spread over a high plateau interspersed with many shaped reefs. The summit of the site, which rises to 230 m, is characterized by a strong presence of lithic industries, in particular microlithic made of Flint (Fig.8.N°16).

IV.3.5.Site of Cheabet elHassi :

Coordinates: 34°46'58.36"N/ 5°18'46.89"E.

This site is confined to the south of Chaabet El-Hassi, which is located south of Djebel Ghouar and Djebel Guarn Bou Said, a surface site with an altitude of 290m. It is characterized by a low prevalence of lithic industries, with the exception of a few flakes and blades. These lithic industries are distributed on both sides of Oued Ghouara, which is supplied by Chaabet El Hassi and Chaabet Guettar (Fig.8.N°17).

IV.3.6.Site of Chebket el Mahroub:

34°45'40.40"N / 5°12'27.81"E

This site is centred on a rocky plateau dotted with many reefs forming a network to the north of el Ghross area, and it is about 3 km to the north from the national road N° 46. It is characterized by a high density of lithic industries at the top of the site, composed of various flakes and cores, with gratories, denticulates, points, blades and bladelets, and we distinguish three types of patina, where we find black patina, dark brown and light brown. It is a surface site in place due to its height and lack of evidence of exposure to human remoulding factors (Fig.6), (Fig.8.N°18).

Fig.6. Distribution of lithic industry in the site of Chebket el Mahroub.

IV.3.7.Site of Bir Lefta:

Coordinates: 34°45'31.49"N / 5°10'33.67"E

The site of Bir Lefta is located 3 km west of the previous site and they are separated by Oued Falague, it is about 2 km north of the national road n°46. At the top of the site, which reaches a height of 300 m, the lithic industries are very densely distributed over a vast area of more than 1200 m², and almost no point in this area is devoid of fragments or waste material of product of debitage (Fig.7).

In this site, there are many kinds of Flint lithic industry in particular brown and gray color, and these industries are covered with three kinds of patina, including black, dark brown, and brick red, in addition to the lithic industries without patina. There is a distinguished group of lithic tools spread over this site, which consist of denticulates, notches, scrapers, blades and bladelets, and microliths, in addition to a wide spread of nuclei of various types, such as pyramidal, discoid, lamillar and levaloisian (Fig.8.N°19).



Fig.7. Density of lithic industries, site of Bir Lefta.

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Fig.8. Distribution of the prehistoric sites in the region of Biskra

Landsat map updated with GIS system

V-Results:

The field study that we conducted in Biskra is complementary to previous studies that focused on the distribution of prehistoric lithic industries in this area, during which many sites were identified containing various lithic industries with different densities. After analysis of bibliographical data relating to the northern and eastern part of the region, and field research relating to the western and southern parts, we were able to identify 19 sites of diffusion of lithic industries throughout the Biskra region.

All the sites studied are surface sites, but they differ according to the density of the lithic industries, it is noted that the sites disseminated in the highlands are sites in place, because they contain a varied rich product of debitage, in addition to the distribution of raw materials, particularly the Flint. They are also remote from human and natural revamping factors, and we mention here the sites of Bir Lefta, Chebket el Mahroub, Graret Roumia and Draa Oulach, which are very similar to sites of Banian, Chetma and Oued Mesaoud described by the researcher Ballais in terms of archaeological content.

As for the sites interspersed with watercourses and Oueds, they have been revamped and strongly affected by the dredging of the water, which has led to the mixing of its components, where we see agglomerations of lithic industries mixed with gravel, especially on the banks of these Oueds. The sites adjacent to agricultural areas have also been affected by agricultural activity, such as the southern part of the site Faidh esSella and the site of Roumane.

The area is characterized by a low distribution of Paleolithic sites compared to sites belonging to the Epipalaeolithic and Neolithic, where only three Paleolithic sites have been counted, which are the sites of Lahrla, Oued Dermoune and Oued Mestaa, and which are distributed in the eastern part of the region, and the sites remain that it extends almost over the entire region, particularly to the north and west, are Epipaleolithic and Neolithic sites.

We noticed during the field study and through previous research that the density of the spread is large in the high sites and decreases at the slopes and is concentrated at the edges and ends of the waterways, and this indicates that the torrential torrents of seasonal rains have greatly affected the composition of the geographical distribution of lithic industries in the region (Fig.9).

VI- Conclusion:

This study enabled us to discover the huge amount of prehistoric sites that spread in Biskra, Where this was based on the previous study conducted by the researcher Ballais, in addition to the field research that we are conducting in the region to this day.

The types of lithic industries discovered express that the region was an important station for human settlement in the prehistoric period, as man exploited in that period the raw stone materials, especially the Flint, to manufacture tools that he used in his daily activities, Through this came the diversity of the archaeological sites between sites in the form of workshops, hunting sites, and others.



Fig.9. the density of lithic industries in the region and their cultural affiliation

Landsat map updated with GIS system.

The diffusion of lithic industries expresses the influence of the nature of the region in the manner of distribution of the lithic industries, where one noticed a strong density with a diversity in the product of cutting, where the humans exploited the areas of raw material distributed in the mountainous regions to manufacture its tools on the spot, and this is what transformed these sites into workshops of size, like the site of Bir Lefta and Graret Roumia, and The spread of lithic industries along the edges of watercourses, especially in the southern plains, reflects the impact of torrential rains on the transport of these tools through the different places of the region, which makes it difficult to determine type of prehistoric sites in this area.

This study allowed us to highlight the geographical distribution of prehistoric human activity in the region of Biskra, during which we focused on defining the distribution of sites that house lithic industries, but without a study depth of their archaeological content, and this is going to be a field of study for researchers in the future.

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