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The oasis system in southern Algeria: a natural heritage threatened with disappearance, case of the oasis of Biskra

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Abstract. The objective of the study presented in this paper is to monitor the urban transformation witnessed by the Biskra Oasis, by addressing its various characteristics, manifestations and negative effects on the natural heritage. In this study, we relied geographically on field sampling that is based on the descriptive analytical approach, in addition to the historical approach to highlight the spatial development of the study area. The study showed that the oasis of Biskra became living in a disturbing environmental situation, to the extent that some people sounded the alarm to draw attention to the slow death experienced by this oasis area, which began to know a new reality due to the urban transformation. In addition, the study concluded the disappearance of a many number of palm groves, The study also revealed the loss of the identity of the oasis, the quality of its landscapes, and the tourist value. This situation finds its explanation in the various imbalances in the ecological balances that were ensuring the continuity of the oasis. This is the main proposal to make an accurate diagnosis of the environmental reality in order to foresee a balanced environment and to identify the mechanisms and methods of preserving the oasis.

Keywords. oasis system; urbain transformation; natural heritage; landscapes; environnement.

1. Introduction

An oasis is a specific landscape that exists with deserts in arid regions (Jia et al., 2004). This oasis space functions as a complementary whole, relies on his structural trilogy "water, buildings and palm groves" (kalfali & Lalouani, 2019; Hammoudi, 2014) and the Biskra Oasis has been a heritage example par excellence throughout history, it was made up of a coherent whole in which the k'sar (the old city now), its palm grove and the water appear as a balanced ecosystem, where there is a complementarity between the local architecture, the spatial organization of the k'sour, the palm grove and its agro- biodiversity, its irrigation system and all the social and cultural practices associated with them, offering an excellent landscape image (Asma & Soumia, 2019). It is an indispensable source of life and inspiration, as defined by UNESCO (Barrientos et al., 2021), and it is one of the most important natural components of tourism, represented in the terrain, climate, water sources, animals and plants (Nguyen et al., 2022; Rahayuningsih et al., 2016). So the Protection of nature, flora, and fauna must be the

main activity of tourism development in this oasis. In addition to the fact that natural factors are important factors for sustainable tourism development (Trišić et al., 2021), local communities often have customary rights related to the area and its natural resources and a strong relationship with the area culturally, socially, economically and spiritually (Grmuša et al., 2020; Scherl & Edwards, 2007).

Non Today, we notice unprecedented challenges facing the Algerian oases in general and the Biskra oasis in particular, and are almost afflicting their ecological and cultural system. This situation finds its explanation in the various imbalances in the environmental balances that ensured the continuity of the oasis system. These imbalances are linked to this reality produced by human factors. We mention, in particular, the factors resulting from the urban transformations that threaten the disappearance of a large number of oases, and multiply the deterioration of the ecological conditions that exist in an advanced state of fragility, resulting in loss of identity Oasis, landscape quality and tourist value. This study will focus on the impact of urban transformations on the landscape of the oasis. Despite the fact that the knowledge, recognition, and awareness of a landscape as a value have become a very distinctive topic in the last decades (Trovato et al., 2017). There is also increasing recognition of the important role that natural heritage plays in economic development (Courtney et al., 2006). Therefore, the study of urban transformations on the oasian cities and its impacts on the stability of oases are essential for sustainable development in the arid regions (Berbache & Hadjab, 2020). However, there were few researches on the subject of our study. That is exactly what motivated our approach to this work, the main objectives of this research are to monitor the urban transformations witnessed by the Biskra Oasis and to reveal the factors contributing to this transformation.

In addition, the study seeks to find the negative effects of this transformation on the natural heritage of the study area. Therefore, the research questions around which our problem revolves are The urban transformations that occurred in the oasis of Biskra and their negative effects on the natural heritage. Through this topic, solutions can be found to reduce the disturbances and human interventions that the oasis is exposed to, as well as identifying mechanisms and ways to maintain the oasis system.

2. Study area

The city of Biskra is located in southeastern Algeria, and it is 400 km far from the capital Algiers, It is one of the municipalities of the state of Biskra and its capital, it is located in the eastern part of the state Biskra boarded to the north by the cities of Elwataya and Branis, to the east by the city of Chetma to the west by the city of Hadjeb, and to the south by the cities of Oumech and Sidi Okba. The city of Biskra covers an estimated area of 127.70 km². It is located at 34⁰ - 35⁰ N latitude and 5⁰ - 6⁰ E longitude (Fig. 1). It has an important strategic location in terms of its presence on the axis of the national roads.

Therefore, it serves as the link between the North and the South until it was called "The Gate of the Desert" and also because of its location at the beginning of the Great Sahara. In addition, it was called the "Queen of Zibans", as it is a plural of the word "Zab", which in the language or dialect of the southern desert in Algeria means "palm oasis", because it is famous for its palm groves located east of the valley (Fig. 1), which contains a large number of palm trees scattered in the form of Scattered oases, almost all of which are fruitful and producing dates. Moreover, the natural landmarks in this oasis have a special character, characterized by beauty, attractiveness and diversity, which made it a natural museum, This is as the figures show (Fig. 2) and (Fig. 3). It has become a tourist field that attracts many tourists from different parts of the world.

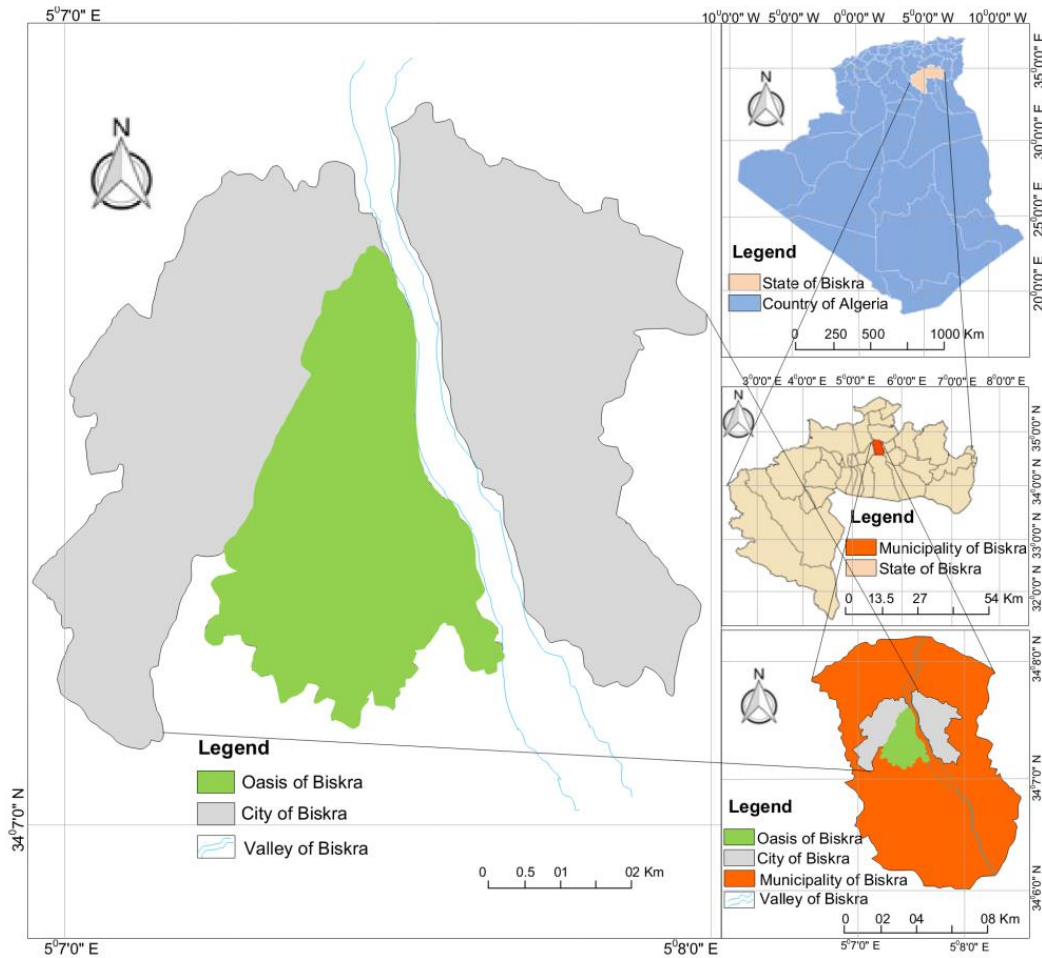


Fig 1. map of the Geographical situation of the study area.

source: adapted from (<http://www.mondecarte.com/carte/biskra-carte>) and author processing.



Fig 2. The valley of Biskra.



Fig 3. A general view of the oasis of Biskra.

3. Methodology

First, the historical and descriptive approach was followed in studying morphological transformations and diagnosing the current urban reality, and the analytical approach to monitor

spatial transformations, so it was necessary to assess land use changes. For this reason, we used the data of the master plan for the preparation and reconstruction of the municipality of Biskra for the year (2008), we analyzed the data and determined the area of field consumption from 1541 to 2008. Based on the analysis, it was found that the increase in the built area was estimated at 2746.59 hectares. Then we relied on the aerial image for the year 2021 to calculate the increase in the built area, and we found it to be 7287 hectares between 2008 and 2021.

Second, it was necessary to identify the factors contributing to the urban transformation and how they affect the increase in the number of buildings and the decline in the area of palm groves. For this reason, an analysis of the data of the national official population and housing census in Algeria for the years (1966, 1977, 1987, 1998, 2008) of demographic growth (number of immigrants and population), and we relied on the data of the monograph of the State of Biskra for the year 2021, because the last national census (2018) is not yet available. We also touched on other factors such as infrastructure development, planning policy and the economic factor, based on many information and data from different sources, both quantitatively and qualitatively, as well as some previous studies and interviews.

Third, The study determined the negative effects of urban transformation on the natural heritage, represented by the deterioration of palm wealth by knowing the area of palm groves and the number of palm trees between 1954 and 2021, relying on the statistics of the directorate of agricultural service in the state of Biskra, our focus was mainly on aerial images of the area has been around for about 34 years (since 1987), showing the agricultural areas that existed until recently, in addition to analyzing these images to show the urban expansion over the oasis. Moreover, the impact was also negative on the urban identity of the area, as we used the field inspection in addition to taking some photographs to clarify the phenomenon more.

4. Results and discussion

4.1. Urban transformation in the oasis of Biskra: the largest and oldest oasis to the largest city

Over the past decade and until today, the world has witnessed the phenomenon of urban transformation, which poses several problems, especially the natural environment. Today, the phenomenon of accelerated urbanization presides over the priorities of scientific subjects for the importance of its impact on the environment (Szabo, 2016), Besides that, urbanization is considered as a major driver that can threaten vegetation growth process in the urban environment (Li *et al.*, 2020).

Where the city of Biskra in its development and growth went through a set of historical events that contributed to the occurrence of a number of urban transformations, these transformations affected the morphological shape of the city on the one hand and the spatial shape on the other. This transformation are summarized in:

4.1.1. Morphological transformation

The study area was followed by several Civilizations and revolutions on its soil, starting from the Roman era to the Islamic conquests during the period from 1541 to 1844, where the most important characteristic of this period was the formation of the first urban nucleus within the palm grove to the south of the current city, and this was on the part of the Turks. Installed on a platform located on a hill overlooking the entire palm grove (Farhi, 2002), This is because there are important elements: water, palm trees. Where seven traditional gatherings were built are: Lamcid - Bab al-Darb - Bab al-Fath - Qadashah - Majneesh - Ras al-Karya - Sidi Barakat, in addition to the village of Ras al-Maa (B'chara, 2018). which form in total the k'sar or Medina

of Biskra (the old city now), where the name of the oasian cities was called the "k'sar", when the inhabitants lived in the k'sar and work in the oasis (Berbache & Hadjab, 2020).

When the French colonialism entered the city in 1844, where the first thing did was to build north outside the oasis for military rather than urban purposes. This transition was a thought new in area consumption for locals. At the same time, construction spread the anarchy is greatly affected, especially after the liberation wealth erupted between the colonial district in the north and the old city in the south, important neighbourhoods were formed, as well as on the eastern side of Biskra Valley (Al-Alia).

After independence, exactly from 1962 to 2021, the city of Biskra expanded in all directions with the consumption of the field chaotically and this was in the early years of independence, but after 1974 it has become a schematically prominent feature in the city (the elevation of the city to the seat of a state), embodied in the form of individual, group and half housing collective and public investments, in an attempt to organize the urbanization of the city through different the urban policies adopted by the Algerian state. But this did not prevent the reduction of the phenomenon chaotic construction, which increased dramatically at the expense of palm forests (B'chara, 2018). without forgetting the fragile building inhabited by poor segments of the population, as well as immigrants coming during the decimal places.

So it can be said that the urban image of the city of Biskra was formed through the various morphological transformation that it witnessed through the various historical stages it passed through. Which manifested itself in urban design and land use patterns. As a result of this transformation, there were 5 urban patterns: the traditional, the European, and the chaotic, with the type of the planned pattern that took two forms: the allocations, and the collective housing areas. (Fig. 4) displays the urban expansion of Biskra Oasis through the various historical stages

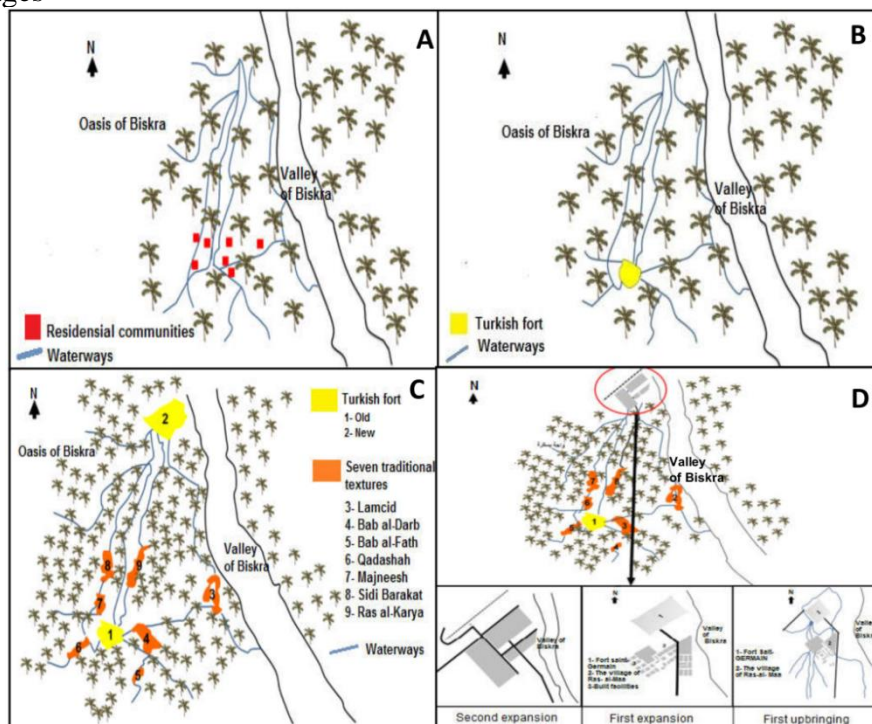


Fig 4. Stages of urban expansion of Biskra Oasis.

Panel A: Biskra Oasis during the Islamic period. Panel B: The site of the Turkish fort in Biskra Oasis during the period 1541- 1680. Panel C: The seven communities, in addition to the old and new Turkish fort, were formed during the period 1680-1844. Panel D: Biskra Oasis during the colonial period 1844- 1932.
source: : B'chra, 2018; and author processing

4.1.2. *Spatial transformation*

The spatial transformation in the desert cities in general and in the city of Biskra in particular, it has its own characteristics that distinguish it from others. It moved from the traditional compact urbanization surrounded by palm forests to the modern city with its current concept and its components of housing and functions, transportation, and base structures. Yagoub (2004) confirm that expansion in any direction was found to be governed by the availability of utilities (water, electricity), economic activities along roads (agriculture, industry), geographical constraints (valleys, sand dunes, mountains), and legal factors (border with another state, planning and institutional rules). Many cities around the world are developed at the cost of agricultural areas. In addition to some external factors whose pace varied from one stage to another. Table 1 shows the change in the built-up area.

Table 1. The spatial consumption of Biskra city during the period 1541-2021

Stage	1541	1844	1962	2008	2021
Built up area (hectares)	31.41	161.07	433.25	2778	7287
Increase area (hectares)	-	129.66	272.18	2344.75	4509

source: Master Plan for Development and Urbanism of the grouping of Biskra, El Hajeb, Chetma municipalities (PDAU), 2008 and The city area changes for the year 2021 were monitored through the Google Earth Program, 2021.

Through the Table 1, Biskra Oasis witnessed a doubling about 5 times in its built-up area during the period from 1541 to 1844 from 31.41 hectares in 1541 to 161.07 hectares in 1844, and at the end of the phase 1844-1962 amounted to 433.25 hectares, an increase of 272.18 hectares, meaning that it doubled twice and is less compared to the first stage. But after independence, and exactly during the period 1962 to 2008, the city experienced a great urban development, especially after 1974, and today it has become the largest desert city and one of the largest Algerian cities in terms of population size, combining various modern urban functions in which the consumption of the field has doubled dramatically, about 5 times to reach 2778 hectares in 2008, an increase of 2344.75 hectares. This is due to the administrative upgrade of the city, then the built-up area increased to 7287 hectares in 2021.

This transformation from an oasis to a modern city to a metropolitan city in the future threatens the palm wealth through random construction and development programs that are at its expense. The current city of Biskra might be considered as the product of the inappropriate instructions giving by the public authorities and an inadequate model, imposed by the state (Farhi & Hadagha, 2018), shows the change in the built-up area in the city of Biskra.

4.2. *Factors Contributing to the Urban Transformation Process and its pressure in the oasis of Biskra*

The urban transformations in the city of Biskra were not purely a coincidence. But it was associated factors that contributed to its occurrence, and had a prominent impact in determining its characteristics and advantages, The transformation process of the oasis may be attributed to the following forces factors:

4.2.1. *Demographic factors*

Demographic factors in the study area played an important role in the urban transformation process. On the one hand, it was a prominent element in the field transformations by increasing the urban area, which was characterized by a significant spatial-demographic transformation initiated by the process of urbanisation instigated by the migration flows from villages to towns (Durkin et al., 2021), where several researchers noted that there was significant correlation between the total population and the built-up area (Tong et al., 2018) and on the other hand it had a prominent impact on the economic and social transformations due to migration, which allows mixing between the indigenous population and the immigrant population for tourism, as small urban centers, cities with naturel and architectural heritage, for example, can be tremendously reliant on the tourism economy's development, both in terms of employment and revenue, which leads to the introduction of new customs, traditions, and the emergence of a new economic thought. which is considered one of the most important factors influencing the agricultural and natural vegetation cover in the desert oases (Hadagha et al., 2021; Al-Madini & Hassaballah, 2019) in general and Biskra in particular. This was through the population increase that started at a varying pace from one stage to another. Table 2 represents the population of Biskra Oasis during the various official population censuses, in addition to the estimates for the year 2021.

Table 2. Population development in the city of Biskra from 1966 to 2021

The year	1966	1977	1987	1998	2008	2021
Population number	53177	87200	129961	172905	204661	249512

source: Algerian National Office of Statistics (ONS), 1966, 1977, 1987, 1998 and Algerian National Office of Statistics (ONS), 2008, (https://www.ons.dz/collections/w07_p2.pdf) and Department of Budget Programming and Monitoring(DPSB), 2021.

According to the Table 2 data, Biskra has experienced substantial population increase and rural immigration. the population grew fast between 1966 and 1977, rising from 53177 in 1966 to 87200 in 1977 (2.5% growth rate), that is, nearly doubling within 10 years with an increase of 34023 people due to local migration.

According to the Algerian national official population and housing census in Algeria, there were 7698 immigrants between 1966 and 1977. This implies that the city is an appealing locale for the inhabitants, owing to its tourism importance, and its location on the one hand, and also it ranks first in the urban network, as it is the capital of the state, in addition to its availability on many facilities and life necessities. The number of immigrants to Biskra reached 10387, where rural immigration represents the predominant proportion of the total immigrants, and this explains the poor living conditions in these places with the low level of health over the years 1977 and 1987 (Algerian National Office of Statistics [ONS], 1977, 1987), and educational

services that force people on immigration. Especially in rural areas, which led to the migration of its population to the city to search for stability and a better life. This led to an increase in the population to 129961 in 1987. Continuation of the migration movement estimated at 8735 migrants (ONS, 1987, 1998) towards the city of Biskra evidenced by the population increase during the period 1987-1998, where the population of the city moved to 172905 in the year 1998 (2.7% growth rate). The decade 1998-2008 witnessed a weak growth rate (1.5%), which is still low compared to the to the state rate (2.05%). After that, the city's population increased to 204661 in 2021 (Department of Budget Programming and Monitoring [DPSB], 2021).

These results indicate that the demographic situation requires a larger urban area to settle in the city of Biskra. We specifically mention the expense of the palm groves. This proves that population growth was one of the main drivers of urban transformation.

As a result, urban development necessitates a moderate population on the one hand, while avoiding excessive population expansion on the other. Because this has a negative impact on natural settings, especially in cities with an oasis character.

4.2.2. *Urban planning policies*

Governmental actions and intentions that regarding urban expansion also have decisive influences on the socio-economic development (Tong et al., 2018), so it is worthwhile to study their impact on the processes and mechanisms of urban spatial expansion based on all levels of planning.

The onslaught of urban expansion on agricultural land has been directly or indirectly facilitated by the actions of the local planning authority itself, and is embodied in either urban plans or development and housing programs. Through these policies, the city of Biskra benefited from several urban plans, to diagnose its situation and chart its future prospects. By setting up development and housing programs. Among the most important plans are the Darfur scheme of 1924 during the colonial occupation period, the urban plan, as well as the master plan for the preparation and reconstruction since 1990.

In 1974, the city became the capital of a state after it was affiliated with the state of Aures. And due to The public investments that benefited from them became one of the most important cities in the Algerian east. They benefited from an industrial zone, which expanded within the framework of the plan directed in 1987, which increased its capacity to approximately 183 hectares.

The city also benefited from an international airport, which is an active exchange point (goods and people). These facilities made the city a polarizing area and dominating its state area and regional.

4.2.3. *Infrastructure Development policies*

Furthermore, secondary and local roads were developed, followed by the provision of electricity, water and telephone networks, all of which improved the quality of life in the oasis, but at the same time exposed it to the pressures of urban development, this obviously puts more pressure on urbanization in these settlements (Quazi & Al-Jarallah, 1998), by expanding at the expense of palm groves and then decreasing its area, which negatively affects the natural heritage of the oasis. Where effective planning requires knowledge and understanding of landscape values such as aesthetic, recreation, and historical values that exist within an area (Brown & Brabyn, 2012).

4.2.4. *Economic factors*

- A transformation in the economic system: before 1990, the state was the main actor in the city's growth through various public investments. Through it, the urban field witnessed a great development, and this increased after 1990 after the entry of the private sector, whose contribution was an effective contribution (Master Plan for Development and Urbanism of the grouping of Biskra, El Hajeb, Chetma municipalities [PDAU], 2008).
- A transformation in economic activities: In the early years of independence, the labor force began to decline in the agricultural sector. For example, in 1966 the number of workers in Biskra Oasis reached 22000 worker (ONS, 1966), of whom 25% were affiliated with the agricultural sector. This percentage gradually decreased to 6.65% out of the total number of workers estimated at 52733 workers in 2008 (ONS, 2008).

From the foregoing, we conclude that this economic transformation was contributed to by the industrialization policy adopted by the Algerian state, which encouraged economic activity at the expense of agriculture, on the one hand, and on the other hand, the population contributed to it by leaving their agricultural lands and moving towards other economic sectors that guarantee them permanent jobs and wages. High, which negatively reflected on the study area, from an oasis aimed at producing dates and some food crops, to an area for trade exchange, to an industrial city, to a city dominated by the third sector (services).

This type of economic development not only offers enough finance for city development and construction, but also funds the expansion of urban construction land this meant that during the expansion, the built-up region took up a lot of farmland, Which inevitably leads to the deterioration of the oasis.

Overall, these factors are not isolated but major factors, and the interaction between them is what has brought about this urban transformation especially since 1974, the expansion of Biskra Oasis was not primarily driven by the availability of water resources or the size of the oasis that carried the production or activity of that arid region. Rather, it has been the combination of factors such as the economy, transportation, resources, population, and national policies.

4.3. *The impact of urban transformations on the environment*

Many oases are under threat due to several factors responsible for their degradation worldwide. Among these factors, uncontrolled urban transformation is one of the main phenomena threatening oasis ecosystems (Hadagha, Farhi, & Weber, 2021). For this, the impact of urbanization on the oasis has become a topic of interest and scientific debate all over the world.

Zhang et al. (2008) and Zhang et al. (2015) further find that human activities such as agriculture and urban and human growth are one of the important factors behind oasis degradation affecting their sustainability. Qi, et al. (2007) and Shanzhong and Xiaoyu (2010) confirmed that population development and the increase of human activities have affected the agricultural landscape of the oases and led to their deterioration, as well as its negative impact on the urban identity.

4.3.1. *The decline and loss of palm wealth*

The urban transformations in the city of Biskra had negative effects on the surrounding area in all its aspects, We recall in particular the oasis. I would like to mention that it is one of the oldest oases in Algeria and the Maghreb, it has known the succession of historical civilizations and peoples through its various stages of development, and the different economic, social, political and urban policies followed in the oasis and the region as a whole. This thriving and

densely populated oasis has remained the main agricultural source for dates. The credit for this is due to palms, which was behind the prosperity and development because it played various roles in serving the oasis, as it was a source of building materials in addition to the climatic role it was playing, as it was creating a microclimate thanks to reducing the temperature and reducing the intensity of hot winds on the one hand. And sending cold air masses that cool the atmosphere (B'chara, 2018). It is the basis of human settlement and economic development (Liu et al., 2018) because of the availability of fertile soil, fresh groundwater and surface runoff from nearby mountains (Zhou et al., 2017; Luo et al., 2008). And it is one of the characteristic of ecological landscapes and the primary space for human life and agricultural production in the arid region (Wang et al., 2010).

But The ecosystem of the Biskra Oasis is threatened or even degraded due to rapid urban growth in recent decades, and many studies have shown that the urban expansion is an indicator of economic, social and political growth whereas on one hand, on the other hand it is at the cost of forests, agriculture lands, orchards and greenery of the city (Ahmad & Laxmi, 2016; Barnes et al., 2001; Torrens & Alberti, 2000).

This urbanization, which is taking place at the expense of the palm grove, has led to the loss of a very large number of palm trees in the Biskra Oasis and their area reduced. Which are illustrated in the following Table 3.

Table 3. The area of the oasis and the number of palm trees between 1954 and 2021

The year	The area of the oasis (hectares)	Number of palms
1954	1400	250000
1966	1034	184580
1977	736.72	150000
1987	600	150000
1998	564	140955
2008	400.71	100000
2021	250	45000

source: Directorate of Agricultural Services (DSA), 2021.

Through the Table 3, the oasis contained 250000 palm trees in 1954 for a population of 50000 which means an average of 5 palm trees per person (Boudjellal, 2009), which is a high rate. All these characteristics gave the city the character of an oasis city. But this number decreased to 45000 palm trees in 2021 (Directorate of Agricultural Service [DSA], 2021) and the area of palm orchards decreased from 1400 hectares in 1954 to 400.71 hectares in 2021 (DSA, 2021) directed to 249516 people (DPSB, 2021), at a rate of 0.2 palm trees per person, It is a very low rate.

This transformation from an oasis to a modern city threatens the palm wealth through random construction and development programs that are at its expense. As the population shifts to the second sector and the third contributed greatly to the deterioration of the oasis, because they converted their orchards into real estate destined for construction (B'chara & Addad, 2016). (Fig. 5) shows the change in the area of palm orchards.

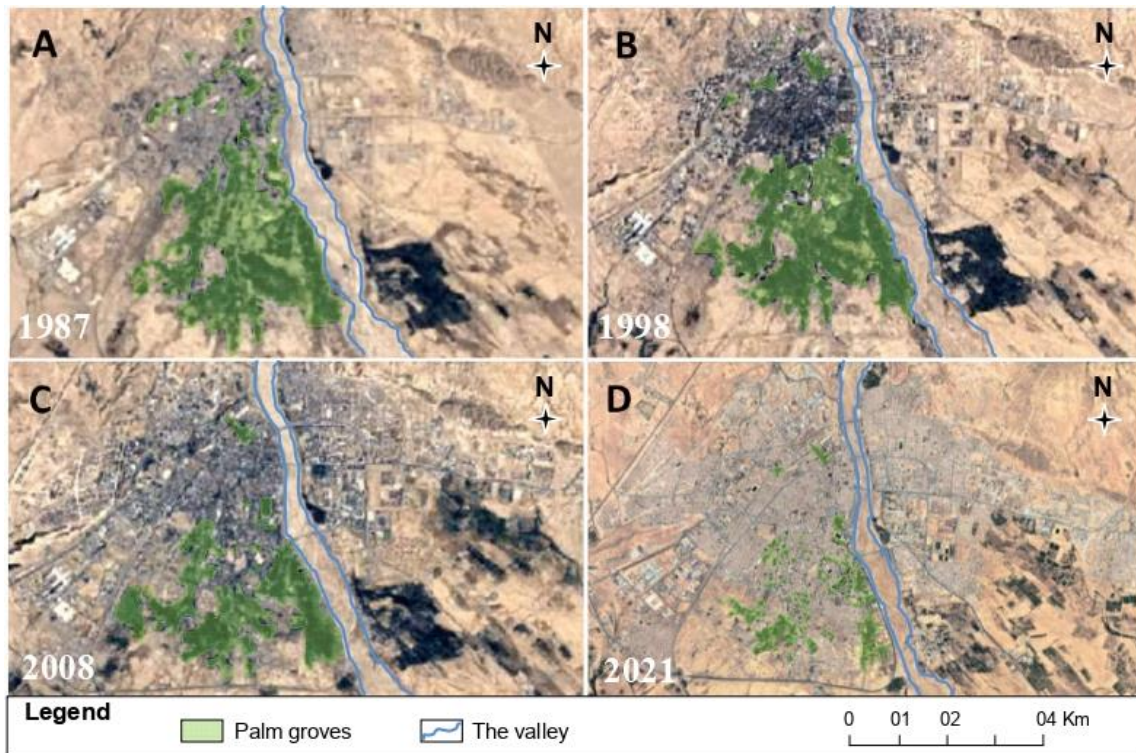


Fig 5. The decrease in the number of palm trees and the shrinking of the oasis area between 1987 and 2021.

source: adapted from <https://earthengine.google.com/timelapse/> and authors processing.

4.3.2. *The fading of urban identity features*

In all civilizations of the world, the relationship between urbanization and human identity is stable and well-established. Research indicates that the identity of the person residing in a region is, in fact, closely linked to the local construction and his distinctive identity in that region (Al-Ballouz, 2020).

However, archaeological sites, historical buildings, neighborhoods and old cities are facing a great challenge at the present time due to the activities of urban expansion, whether horizontal or vertical, which leads to the demolition of many historical buildings and their replacement with modern buildings with high heights and modern designs. These activities either lead to the demolition and loss of old buildings or to distorting the visual landscape by constructing buildings with modern designs and at high heights that create visual pollution in old areas and neighborhoods (Al-Mahari, 2017).

As for the Biskra Oasis, this came as a result of the great urban expansion through the tyranny of the modernist urban character in the construction of some houses and alien to the original architectural formations that the oasis knew through its urban path, and therefore today it has introduced some houses of an architectural style that is not related to the region or to the environment. The natural desert and even the values and customs of the inhabitants, and the architecture became open to the outside through large windows and balconies in addition to the sloping roofs despite this scarcity of rain on the one hand, and on the other hand, the traditional places are exposed to erosion (or even extinction), in this case the indigenous people leave their homes And not using them for long periods, which results in the absence of periodic maintenance of the building, which leads to its

deterioration as a result of rainwater leakage from the ceilings or as a result of leakage in water pipes, as well as garbage and dust collection inside. The phenomenon of migration and neglect is one of the most dangerous factors for damaging these buildings, as it leads to the fading of the urban identity of the city. (Fig. 6) and (Fig. 7) show the extent of the change and deterioration that occurred at the level of heritage buildings.



Fig 6. Replacing historical buildings with modern buildings.



Fig 7. The deterioration of traditional buildings.

5. Conclusion

The aim of this research was to monitor the morphological and spatial transformations of the Biskra Oasis and to identify the contributing factors to that, in addition to discovering the negative effects of urban transformations on the natural heritage.

The results showed that the study area has known transformations in its urban field throughout history, from the traditional city planned according to human dimensions to the modern city, which has become one of the most important urban centers in the Zaiban area. By examining the manifestations of this reality, which was controlled and directed by a group of factors, whether demographic, planning, infrastructure or especially economic after the administrative promotion of 1974, after which the city of Biskra was elevated to the status of a state, which means benefiting from public investment projects, Especially after 1990 (the orientation towards the country-oriented economy system), due to the permanent and regular jobs it provides and the wages are good, which made farmers and peasants abandon their lands and move towards the second and third sectors. All of these factors combined contributed to the emergence of a set of problems, the most important of which is the deterioration and loss of palm wealth, the latter of which declined from 1400 hectares of a year 1954 to 400.71 hectares of 2021. These urban transformations, especially urban expansion, led to the tyranny of the modern urban character, which led to damage and loss. Part of the traditional buildings, thus losing the urban identity. Which negatively affected the natural heritage of the latter, which cannot be left subject to the factors of time and subconsciousness of the enormous importance of this wealth, and therefore this natural heritage must be preserved, taken care of and benefited from by re-reviewing the guiding plans for preparation and reconstruction, especially with regard to the need to introduce environmental considerations to preserve On the environmental

elements, ensuring their sustainability, and re-selecting areas for future expansion in the study area without encroaching on natural resources.

And activating the mechanisms of applying laws and legislation to preserve the vegetation cover from various types of deterioration, in addition to paying attention to the architectural heritage inside the oasis by restoring the k'sar in order to exploit it in the tourism aspect.

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