



Cultural Landscapes Preservation at the Interface of Urban Planning and Sprawl

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Abstract

From ancient times, the sea has played a key role in shaping and generating settlements and cities. The history of civilizations has been marked by the cultural development of human societies along coastlines. Accordingly, these territories are harbor of an important coastal heritage; that plays a pivotal role in maintaining the link between the past and the future. In fact, while cities grow and their populations increase, their planning becomes a challenge for sustainable development. Through different forms and mechanisms, coastal sprawl is materialized, by the massive occupation of populations and industrial activities along coastlines. In this vein, coastlines endure many conflicts, which lead to the degradation of cultural and natural resources and may result in loss of cultural identity associated with the presence of cultural landscapes. The paper aims, to discuss planning approaches and challenges related to managing cultural and coastal landscapes, facing the impact of coastal sprawl. The paper is based on a landscape analysis; it interviews the urban, social, juridical and morphological frame. An understanding of urban sprawl through the lens of Annaba's coastline is required for its implication as a social support of the identity and the history of the city. The paper also examines how the coastalization affects the cultural heritage based on the monograph of one of the valuable French colonial constructions in Algeria. Lastly, the study demonstrates, some key opportunities for advancing future adjustments, and coastal management approaches. For instance, new tools and more appropriate methodologies that combine the preservation of the coastline and the preservation of the cultural heritage.

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Keywords

Urban planning; Cultural landscapes; Coastalization; sprawl; Heritage.

1. Introduction

Urbanization, and specifically sprawl, have been an important issue in urban analysis and planning strategies. Undoubtedly, the foremost tradition in urban studies has given sparse attention to water in urbanization. The few researchers treated waterscapes as a case in social, environmental, and economic perspectives focused on the physical and natural aspects. From an overall perspective, coastlines combine both natural and human components and also a cultural heritage that refers to the common collective maritime identity. In fact, the coastlines are often seen as highly valued and wealthy areas that hand over valuable benefits. This has stimulated the expansion of coastlines it has become densely populated areas and that gave rise to greater inequality. Furthermore, coastal landscapes are shared and governed simultaneously by a plurality of texts, often indecisive applied in an uncoordinated manner by the institutions. The actual situation, has captured the attention of urban planners to adopt many challenges and approaches to manage coastal and cultural landscapes. This paper provides insights on cultural landscape evaluation

acknowledging the presence of valuable heritage and the several phenomena that could threaten its resources (Agapiou et al., 2015). It then summarizes, the country policies for management of the coastal landscapes. Therefore, it challenges the knowledge of coastal sprawl impact, and coast requirements for urban development and the preservation of cultural, natural and social dimensions (Beriatos et al., 2010). Finally, this research aims to provide a coastal sprawl analysis methodology, that contributes to the understanding of sprawl dynamics to defend coastal areas. It provides also a toolkit for future planning strategies, cultural and coastal landscape preservation, with an approach to emphasize on the main question of the continuation of the process of coastalization and its impact that has reached an alarming stage.

2. Coastal sprawl

Coastalization, refers to the process of concentration along the coastline of both the population and activities, due to coastal attractiveness. The city of Annaba is located in the east of Algeria, is considered to be one of the best known historic cities in Algeria. With 80 km Annaba's coastline has an enviable position that tells the story of the city conquest and the landing of the french marine army on the 27th of March 1832. In addition, it encompasses a historic, cultural and archeological heritage. Regardless of the value of the existing heritage, Annaba's coast constitutes a symbol of identity notably, whit its role in the construction of the collective memories. This maritime dimension was the interest of many geographers, navigators who sailed the Mediterranean and for colons as Vandal, Numids, Romans. Since the second half of the 11th century, the coastal sprawl has become well known and marked by an important urban expansion. In this vein, the center of the city has been transformed from the interior to the coast with the construction of the new city by Arabs. Therefore, it offered a maritime orientation to Annaba as evidenced by its new site overlooking the sea and the appearance of a fortified Mediterranean. Today, Annaba's coastline is undergoing a progressive and worrying coastalization. It concentrates the majority of the large-scale industrial activities linked mainly to industrialization period. This change of state was the first seed of disorder, anarchic urbanization and the alteration of the quality and the distinctive character of the cultural and coastal landscapes. In this paper, we address this gap through the lenses of Annaba's coast, which serves as a practical case study to examine how this process of coastalization affects the cultural landscapes that comprises rich historical heritage values (Visser, 2004). The restaurant "the caravel" constitutes one of the valuable French colonial constructions in Algeria build at XIXth and XXth centuries, with a purified modern style, an ingenuity of construction and adaptation to the coastal context.



Figure1. Thermal baths vs industrial zone, (Source:<http://annaba.net.free.fr/bone.grenouillere.htm>,2018)

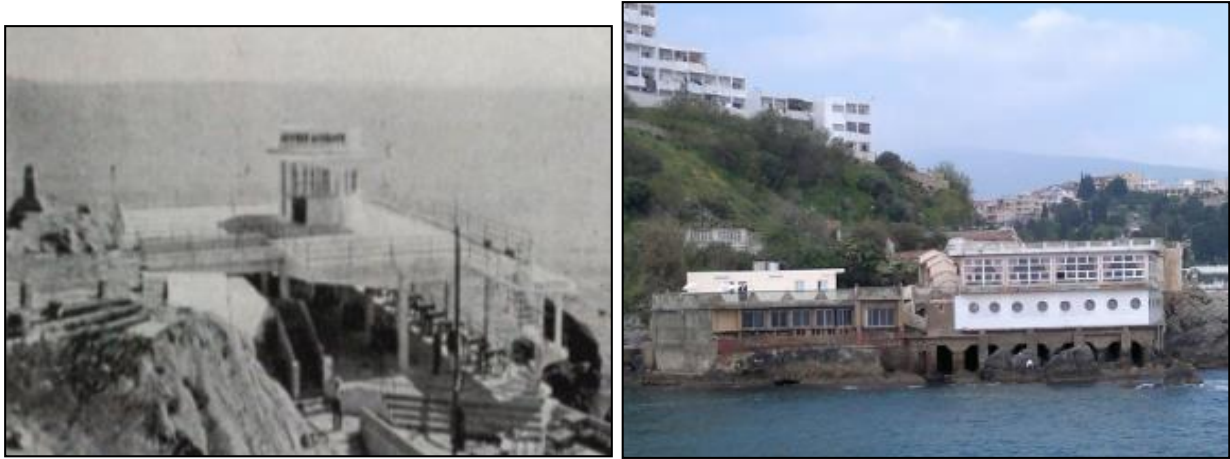


Figure 2. View of the caravel restaurant from the lion's pier.(Source: <https://gallica.bnf.fr>, 2018)

3. Cultural landscapes preservation and urban planning tools

The present urban planning strategies testify to the conflictual feature in dealing with developments and population growth and the conservation of valuable and historical heritage. On the one hand, the preservation of the character of existing cultural and coastal landscapes; on the other hand, the transformation of coastline that has formed the main argument for conservation (Ahmed Soufiane, 2009). To preserve the unique character of cultural landscapes and to control coastal sprawl, the legislation has set up two levels of protection in the international and national frame. However, the position of Algeria toward the legislation reflects some disparities besides a lack of coastal landscapes methodologies for a balancing urban water demand and heritage preservation. In fact, the preservation strategies highlighted in the law 02-02 relating to the protection and the valuation of the coastline dates from February 05, 2002 ignored the current discourse of sustainability and correlations of cultural landscapes with coastal areas. More specifically, the implication of heritage in the development of communities and values for future generations.

From a legal perspective, at the national level, the confronted analysis of the national land use plan, the coastal development plan and Algerian maritime code showed that municipalities differ widely in their capacity to predict change and control coastal sprawl in conformity with the national framework and local priorities (Döring et al., 2017). Therefore, that may explain the conflictual situation. In the light of the urbanization of coastal areas, local development plans failed to link between the fields of coastal sprawl and cultural landscapes preservation. Regrettably, cultural landscapes are often threatened or neglected by institutional as well as future planning strategies are not integrating its management (Hepcan et al., 2013). This has profoundly transformed the coastline and led to problems of multi-use, accompanied by alteration of the cultural heritage characteristics. This situation has shaped new features for the coastal space and extremely modify the perception of users, and their own living environment. In addition, the loss of the balanced link between heritage assessment and the new built environments (Antrop, 2004). However, the coastal laws and the master plans have not prevented the urbanization, for several reasons like the absence of control and the lack of environmental interest. The legislative analysis illustrates also, the insufficient adaptation and the weak coordination of institutions in charge of managing the coastline or its activities.

4. Methods & materials

Sprawling coastal development dynamics can only be understood through the lens of landscape analysis, based on historical land planning documents and tools highlighted above. Lynch's urban analysis method adopted in our study stipulate that, the urban form must be identified by its characteristics which make it unique, that allow us to appropriate it to give it affective significance (Fig.3). Thus, the identified elements interact in the definition of the urban landscape perceived by the user. In this vein, the study presents a method to generate a contextual understanding of the influencing factors of urban sprawl, and also for analyzing how urban sprawl growth has and will affect heritage landscapes on Annaba's coast. The method attempts, to measure sprawl from a landscape perspective. On the representational side, the mapping first focuses on the site attributes that structure the studied path.

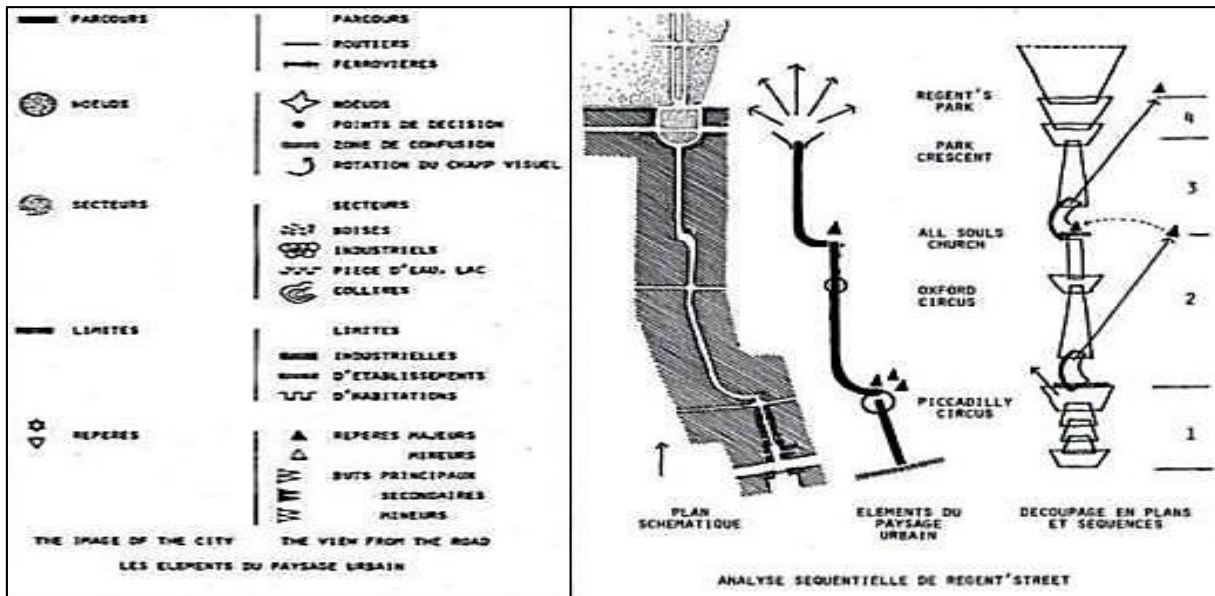


Figure 3. Elements of urban landscape. (Source: Philippe Panerai et al, 2005)

Therefore, the measures and indices used are derived from urban and architectural frame in a selected path. There for the classification of the representations that are qualitative measures for spatial pattern is favorable in accommodating the landscape dynamics combined with the agents of change (Diagram.1). This study serves to identify the interaction between cultural landscapes preservation and coastalization and the impact of the one on the other. Although, the comparison of continuous landscape image despite coastalization, helps to analyze and focus on the nature of change in both structure and the functioning of landscape. According to Lynch, the method then provides the elements of the site organization, such as boundaries, crossed sectors and landmarks.

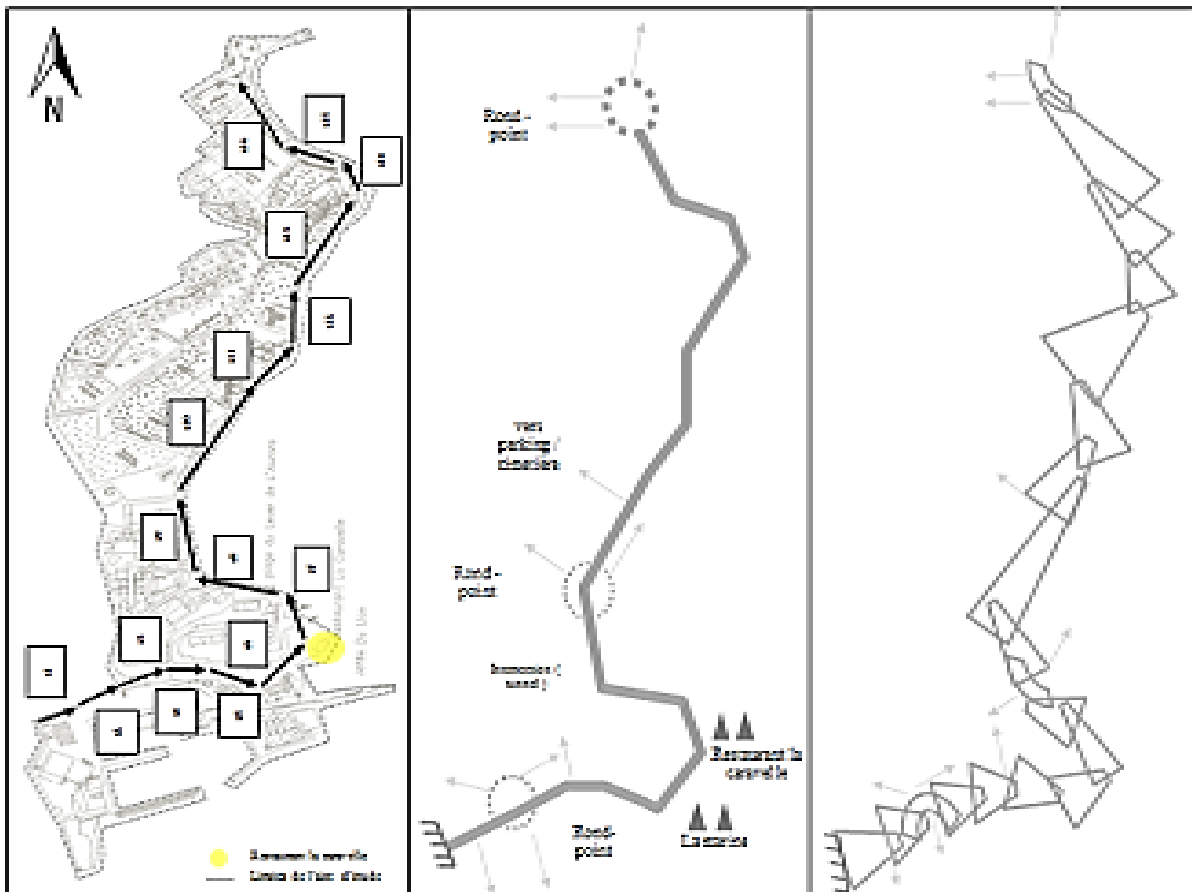


Figure 4. Diagram synthesis of the studied path.(Source: author, 2018)

In urban studies, the relief represents the first framework of the organization of the territory on which the landscape is based. Owing to the relevance of the study case and to draw the depth knowledge of the current requirements of the landscape which interpellate coastal and urban territories. Landscape diagnosis, takes a part in this research as a basic tool for planning, intervention and management of landscapes. Thus, the landscape is an essential dimension in the aim of preserving both cultural and natural assets. As well as development strategies of territories, who are forced to respond to the growing demands of populations to better take into account the new requirements of landscape.

To achieve our intent, a landscape block diagram for the studied section gives the summary representation of the landscape ambiances adapted in both coastal and urban contexts with the presence of heritage. Its used as interview support that permits us to better understand their representations and to appreciate their management practice. Moreover, the conclusions of this type of survey can help actors to collect information that integrates a landscape dimension (Brown et al., 2017). The landscape, approached from this angle, contributes to the construction of a social link between actors who often misunderstand the structure of landscapes. In addition to describe changes in structure and urban morphology, particular attention is paid to land cover transition dynamics over a vulnerability study allowing the mechanisms observed in spatial frame. It consists of defining the appropriate coastal climatic and anthropogenic phenomena for vulnerability analysis. Identification of vulnerability profiles and their spatial distribution helps to determine typical indicator value combinations, and which urban vulnerability profiles characteristics, also interpretation and verification. In this analytical step, each urban vulnerability profil is described and interpreted. Accordingly, the combination of results and indicators can be interpreted in terms of threats and challenges related to cultural landscapes preservation (Rayan, 2012). The developed analysis sheet, summarizes the current conflicts among urban development, urban planning tools and cultural landscapes preservation. In this sense, and to forecast an example of this common pressure, Annaba's coast is the support, relying on a combined analysis of urban growth potential and threats to heritage. Within the framework of the development of research subject and considering the importance of the social dimension, the social study allowed us to measure the degree of abundance of the studied path. Then, it can be divided into a certain number of sequences, each one represents a succession of plans summarized in a descriptive sheet. This analysis examines how urban areas have developed above time, also to examine the forms and the mechanisms of coastal sprawl, throw a historical perspective.

5. Discussion and practical applications

The studied path was divided into 16 sequences (Figure 4), an analytic and descriptive sheet (Figure 5) for each sequence, was drawn up according to the results. The diagnosis carried an interruption that divided the studied area into different unities represented by the change in the (forms of urbanization, social practices, quality of vegetation's, dimensions of sidewalks and roads, style of facades..).

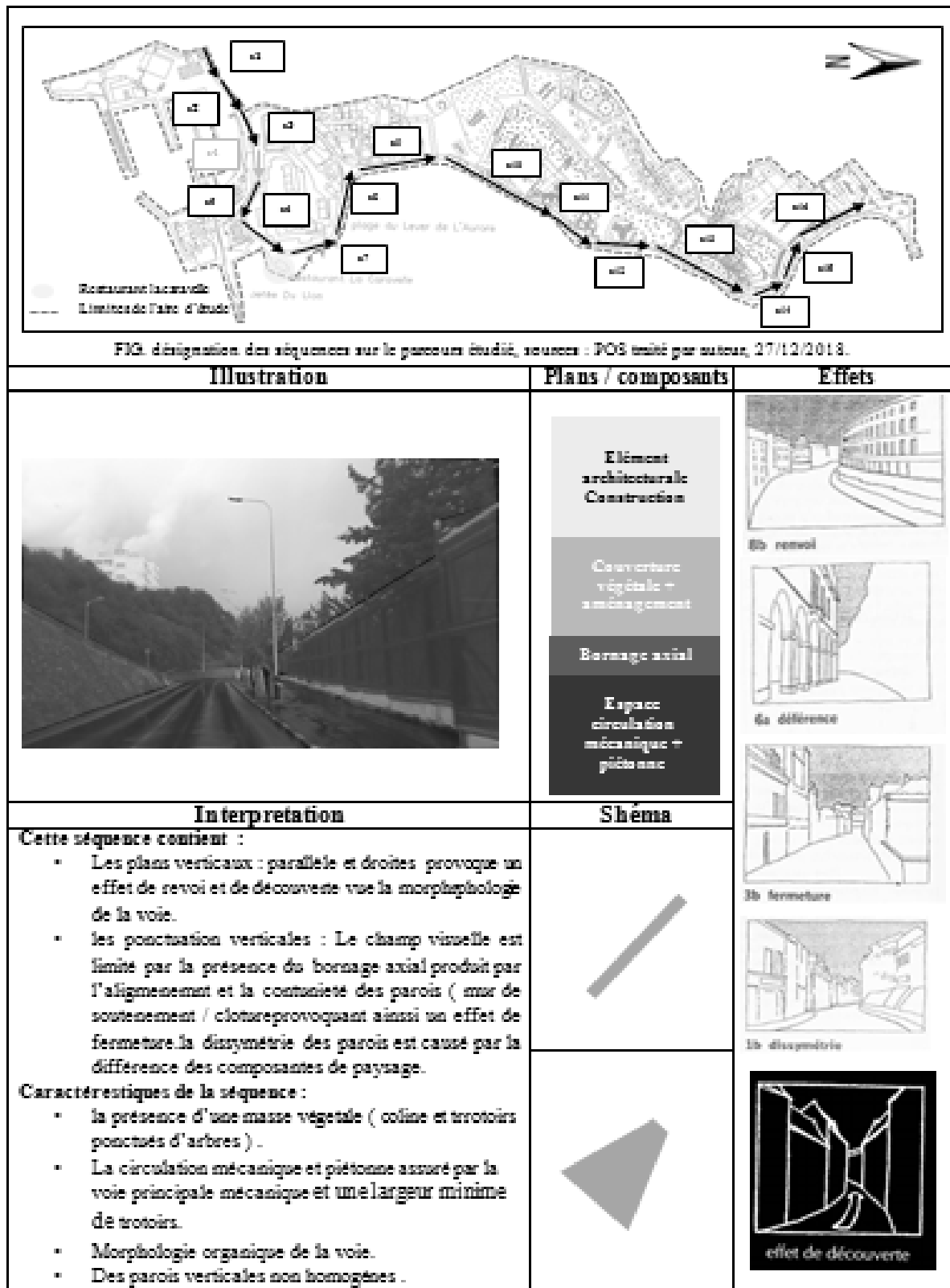


Figure 5. Sequential analysis sheet. (Source: Author, 2018)

The rupture in vision plans reveals the important pattern change in response to coastal sprawl process at an atypical proportion and rate and therefore, given rise to significant impacts on the landscape pattern. Thus, the spatio-temporal analysis confirmed that coastal sprawl has changed the structure and also influenced the functioning of coastal landscapes, giving a rise of inharmonious characteristics of coastal areas.

The results of layering (Figure 8), are clearly explaining the prominent features of coastal and cultural landscape dynamics with the transition between the two forms of occupation (urbanization, industrialization) represented in

layering map with two units. These changes aimed to the degradation, destruction of the cultural heritage in the studied area and affected the quality of the environment.

Meanwhile, Schematic section of the studied path illustrates the current conflicts among urbanization and the negative changes in the urban pattern and the physical state of the cultural heritage (Figure 6 and Figure 7). The profiles review two forms of occupation:

-An industrial silhouette (Figure 6), constitutes the background of the studied area, a concentration of industrial constructions in the area, namely fishing port; factories and the port companies. Therefore, the formation of new artificial zones along the coastline created huge monotone structures. All these activities are often polluting, harmful, cumbersome hide and deteriorate the symbolic value of the cultural landscapes.

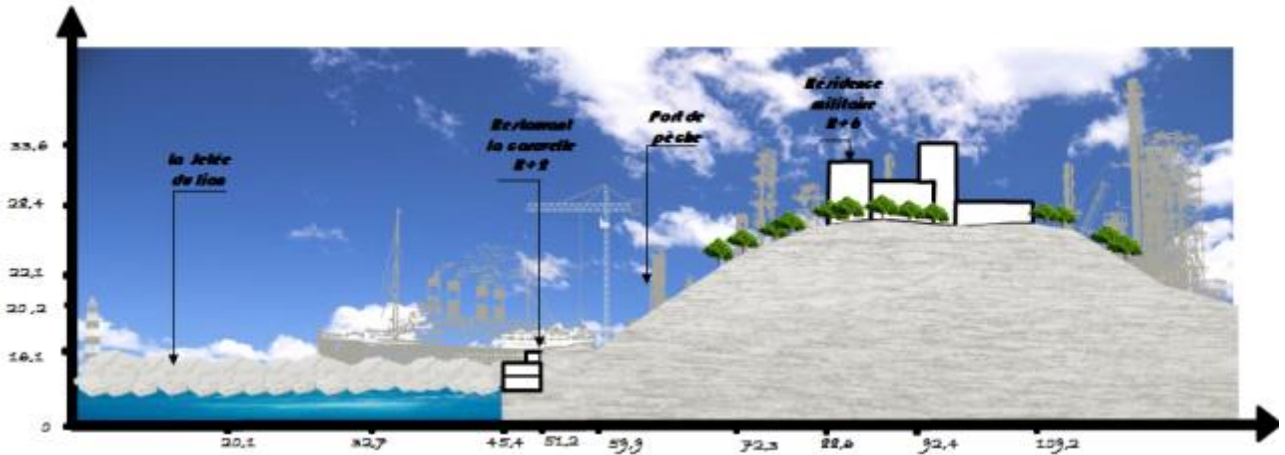


Figure 6. Profil section A, (Source : Author, 2018).

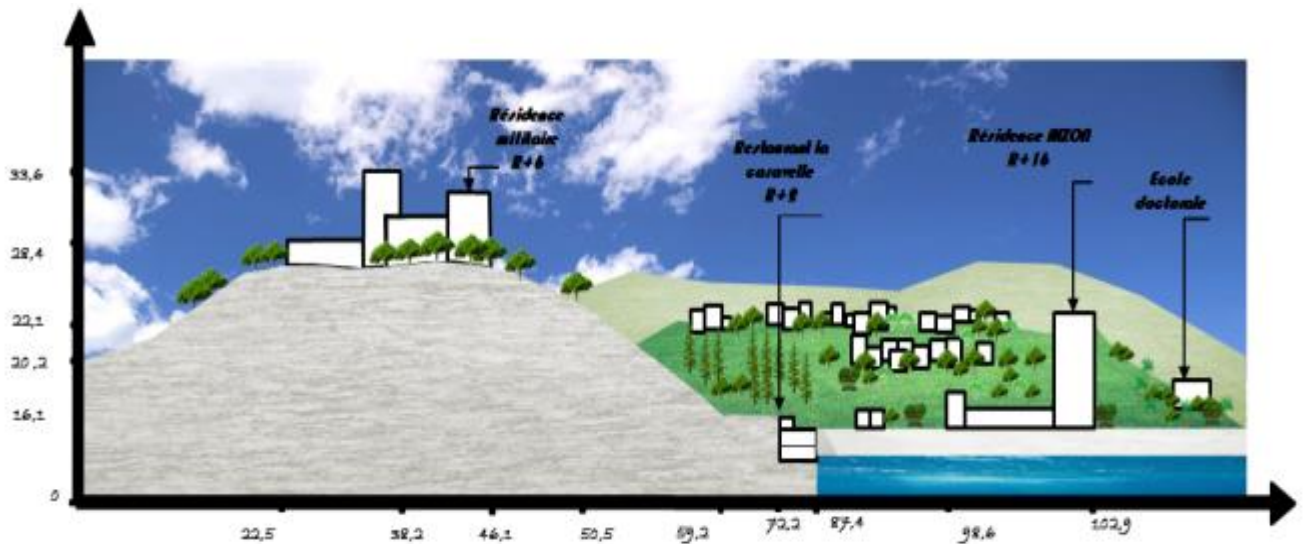


Figure 7. Profil section B. (Source : Author, 2018)

-An urban silhouette (Figure 7), illustrates the spread along the coastline with an occupation that led to a radical modification of the environment. The different vision plans explain the results of anthropogenic actions that create an unbalanced trend. These results have also made demonstrable that the two forms of occupation create an undefined pattern and destroy human cohesion with no respect to the identity and character or the importance of the history.

-It has been clear that, coastline is facing pressures never seen before. For this reason, coastal landscapes conservation strategies have to be integrated within the larger goals and balance of both conservation and development.

-The urban sprawl forms and mechanisms are distinguished by analyzing overlaid urbanized area maps of the studied area. It should be noted that, according to the interpretation of the layering in different levels. (Figure 8), the spatiotemporal pattern of coastal sprawl for each study context have expanded, also the spatiotemporal landscape

pattern configured by the two sprawl forms changed ,obviously (Catalán et al., 2008). The different sprawl forms, patterns in the studied path have transformed significantly, with their proportions both in terms of occupation and function.

-The overall lecture of the elements constituting the landscapes, has allowed us to identify the position of the coastal heritage included in its natural environment (Figure 9 & Figure 10). Due to conflicts generated by urban and industrial sprawl, coastal landscape has been reshaped, and transformed. However, it is necessary to understand how this transformation took place using comparative profiles visions of this genesis which is opposed by a comprehensive lecture of the elements that organize the new landscape. The strong visibility of heritage implies to privilege the relevance of the project in order to recreate a strong link between landscape elements. For this, adopting a contrasting natural cover, in order to set the fundamental guidelines for the sustainable development, protection and enhancement of the coastline.

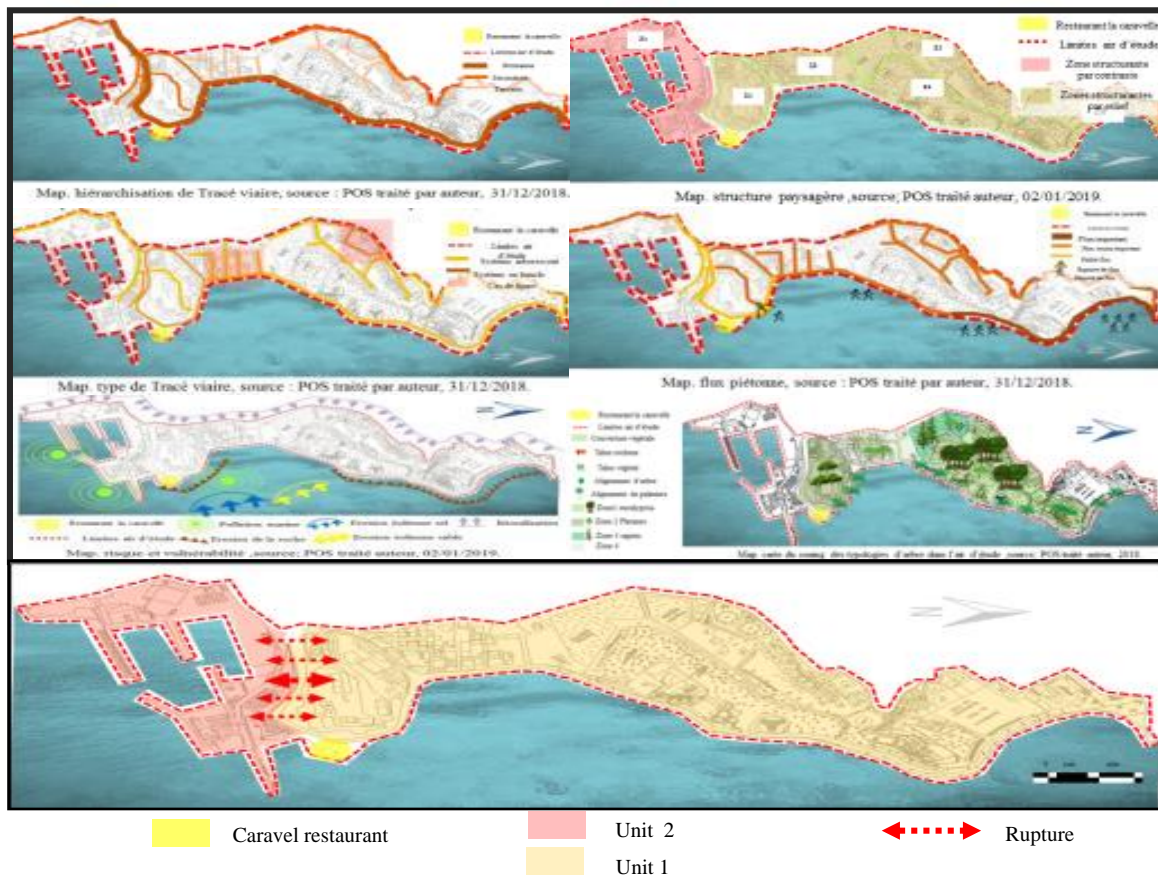


Figure 8. Landscape units layering. (Source: Author, 2019)

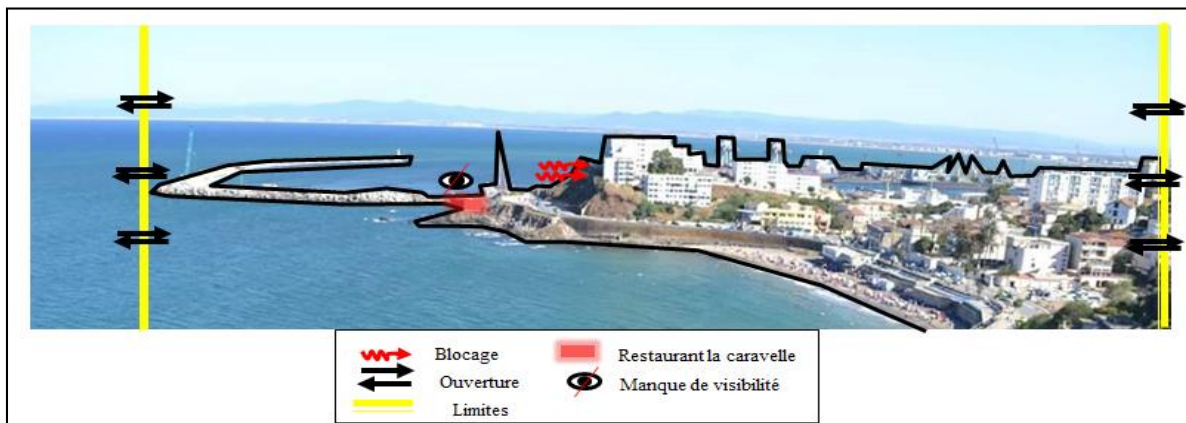


Figure 9. Landscape lecture profiles, (Source : Author, 2018).

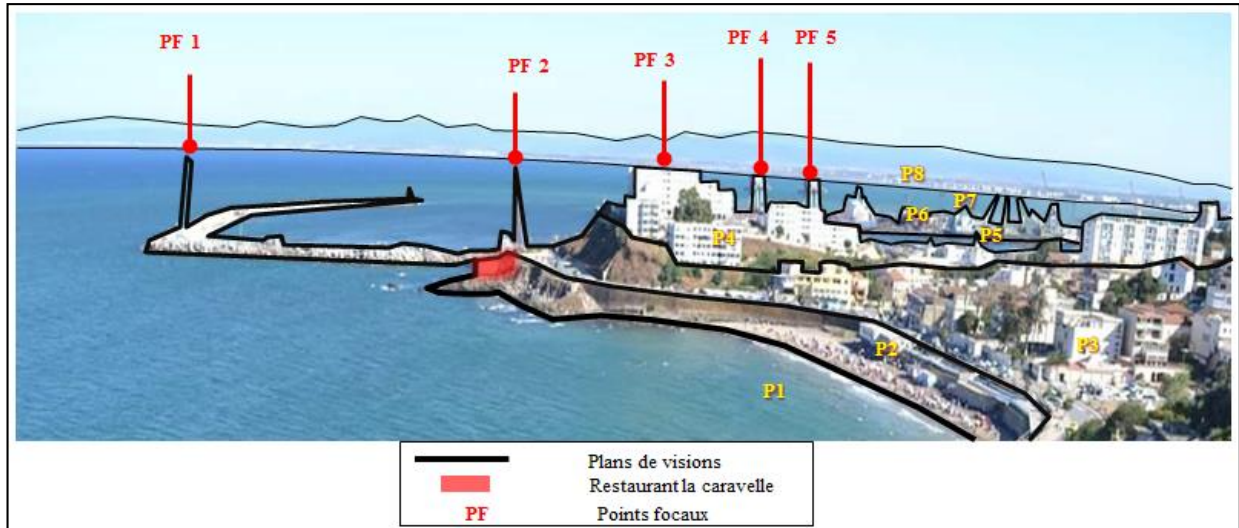


Figure 10. Landscape lecture profiles, (Source : Author, 2018).

Taking Annaba’s coast as a research area, the diagram section tool demonstrates that Annaba’s coast is undergoing a major transformation of its urban structure. It is critically important to properly characterize coastal expansion origins from the first installation and the concentration of the majority of the large-scale industrial activities linked mainly to the industrial period in Annaba (De Rosa et al.,2013). The recognition of the spatial patterns enhancement from classified images, rapid urban expansion towards the coastline has been observed. The industrial area is more severe harmful because of its consequences on the coastline, cultural and natural elements. These findings were tested through landscape analysis and layering presented in the diagram (Sterzel et al.,2020).

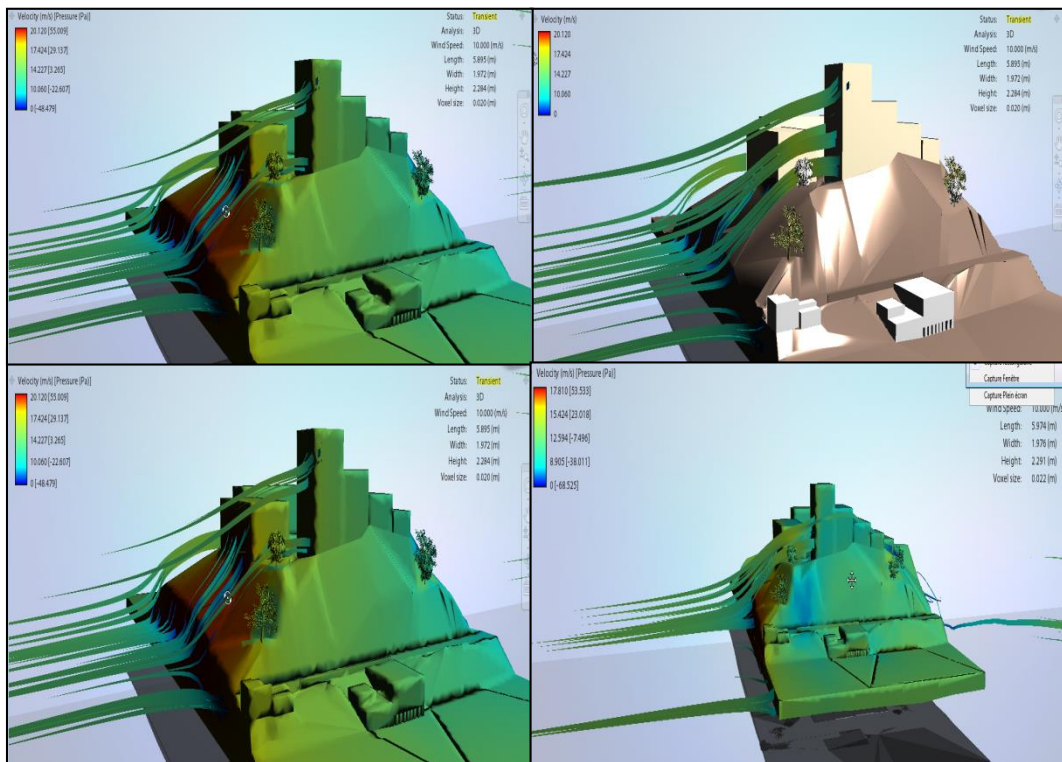


Figure 11. Results of flow design analysis, (Source: Author, 2018)

The results are based on the outcome of the vulnerability and risks analysis using flow design simulation for testing (Figure 11). It showed that, each profile is characterized by a specific combination of indicators and value representing mechanisms that generate vulnerability. A complex result, due to the proximity to the sea and also the type of relief and the quality of the vegetation that covers the studied entity. Besides, natural phenomenon appears the stagnant zones that affect air quality or comfort where the air flow accelerates around the corners of the building causing a

region separated at high speed from the corners. It has been clear from the results that climate change related to the urban expansion subsequently, several phenomena have been developed:

-Anthropogenic phenomena: comparing patterns and profiles, the covered area illustrates the consequences of all forms of urbanization, coastalization, and industrialization; they are therefore exposed to human activities that affect the cultural heritage and reduce the attractiveness of the coast.

-Climatic and ecological phenomena: is one of the most traumatic mechanisms of environmental degradation, notably through the textural and the mineral impoverishment of soils and the movement of large volumes of sand by wind. This type of phenomenon is caused by the presence of a heavy industrial activity and also a fishing port (polluting activity during the loading and unloading of ships). Thus, the direct or indirect introduction of waste, substances (liquid discharges, solid discharges). This phenomenon led to the degradation of the physical state of the studied area.

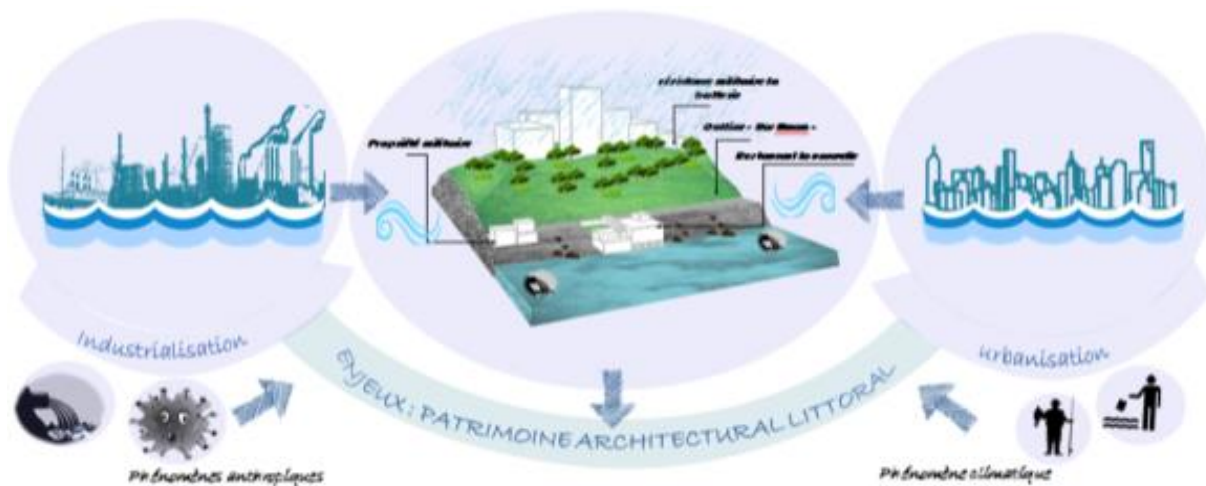


Figure 10. Synthesis diagram, (Source : Author, 2018)

6. Conclusion

The current debate between urban planning strategies and heritage preservation of the coastal areas, testify to a variety of mechanisms implemented in response to a diversity of heritage objects. However, cultural heritage management policies appear to be all the more delicate to define as it continues to unfold before our eyes, through an ever more extensive definition (Taylor et al.,2011). As a result, the pressures of urbanization and insufficiently planned urban development, the urgency of responding to sustainable development and climate change, challenge cultural landscapes to address the complex issues of the conservation of valuable heritage (Trovato et al.,2018). A sustainable development of cities depends on, the integration of historic values and heritage into urban development processes.

The recognition of the huge impact of urban sprawl practices and understanding its implications and causes allow the preservation of urban landscapes, to ensure their continuity. In this study, we identified and investigated the factors correlated with coastalization related to changes of the image and landscape structure in the selected area. During the evaluation of the studied case we confirmed that it conceals various historical values which contribute, to its role as a place of exchanges and sociability in Annaba's coast. The conclusions explain the contradictions between the threat of coastalization and cultural landscapes preservation and the continuation of development with no respect of tools that led to intensifying those risks (Whitehand et al.,2010). Furthermore, it reflects the present attention given to find an approach, which integrates both urban conservation and development in balance with social, environmental, and cultural considerations. However, beyond the proposed development project that have been presented as a solution to this scientific work, the present study provides empirical results from the above mentioned, with important lessons in terms of knowledge relative to the legislation preserving the coast as an entity composed of both cultural and natural and social components. In the same way, that the approached subject opens the way to researches in the thematic for preservation tools and instruments, that adapts with the specificity of the coast and the presence of cultural heritage in coastal areas.

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