



Concessions within the maritime-terrestrial public domain on the beaches of southeastern Spain

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ABSTRACT

Tourism makes an important contribution to the economies of some territories, especially ‘sun and sand’ tourism that uses public domain areas. Some of these areas are operated through concession systems. This article studies the evolution of 31 eminently touristic beaches in 5 provinces of the Spanish Mediterranean coast during the period 2005–2016, analysing both their physical (shoreline evolution) and administrative (concessions documents) aspects. For this purpose, orthophotos interpreted by Geographic Information Systems are used, as well as the concession contract for each beach. The results obtained show that first, there is no relationship between the evolution of the shoreline and the surface area that is assigned under the concession agreement. Second, concessions do not follow uniform criteria (i.e., set boundaries, surface area, annual fee or distance from the water line). Despite the existence of specific legislation applicable to the entire Spanish coastline, there also exist loopholes in it. The conclusion of the study is that for the sustainable management of these areas, it is necessary to link the physical aspects of beaches with the management of the public domain. This would achieve a balance between the natural, economic and social aspects of the territory, and would ensure that there is no decrease in the quality of the beach, which would have a negative impact on visitor satisfaction. This is crucial to avoid in the tourism sector, which is a key GDP contributor for many countries.

1. Introduction

Coastal areas are one of the most popular tourist destinations in the world (Holden, 2000; Sánchez, 2001), particularly Spain’s Mediterranean coastline. This is due to its ideal climatic conditions, in addition to the large extension of beaches, that constitute one of the most important attractions of world mass tourism within the “sun and sand tourism model” (Sardá et al., 2014).

Numerous studies show that the coast offers citizens a strategic place for commercial activity and transport, in addition to having a wide range of services and recreational and social alternatives (EEA, 2006). Likewise, the high tourist indicators indexes in coastal towns and cities have promoted socio-economic aspects, especially in coastal infrastructures (Keul, 2015). This kind of infrastructure (hotels, restaurants, etc.), allows the needs of the users, mainly tourists, to be satisfied (Aguiló et al., 2003). Europe is the world’s leading tourist destination, receiving half of the total number of international tourists, with an annual growth of 8% in 2017 (UNWTO, 2018). Tourism contribution to GDP of some countries is very significant, to the extent that it is considered one of the main industries, and, therefore, good

management is necessary. In the case of management of natural public assets, the manager must make the best decisions for society by maintaining the functionality of natural systems and avoiding the degradation of goods and services (Sardá et al., 2014). As the demand for the use of public spaces is growing, management becomes more complicated (Dormios et al., 2000), therefore different management systems have been developed based on different criteria: (i) quality (ISO Standards), and (ii) Environmental Management Systems on beaches (EMSBs). These systems facilitate working under the principles of Integrated Coastal Zone Management (Sardá et al., 2012) to obtain a sustainable coastal system that will accommodate the increase in anthropogenic pressure (Barragán, 2005; Sardá et al., 2005).

However, applying ecosystem management principles in practice is still seen by many social agents as confusing due to unclear terminology, which, combined with complex system of institutions with highly fragmented legal remit, gets it even more complicated (Bainbridge et al., 2011; Cormier et al., 2010). In the Spanish case, the administrative and maintenance scheme for beach management is equally complicated due to the overlapping and uncoordinated jurisdictions between national and local administrations (Ariza et al.,

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2008; Breton et al., 1996). To try to regulate this area, the Coastal Law of 1969 was developed, which introduced the first beach planning measures, and in 1970 the first guidelines with specific regulations for the urban beaches management were published (Ariza, 2007). These guidelines were subsequently embodied in a new Coastal law (Law 22/88 of Coasts 1988) and Regulation 1471/89. This law significantly changed approach to and practice of beach management, establishing new competences for the different Spanish administrations.

Theoretically, responsibilities in coastal management are distributed across three levels of the state administration (Ariza et al., 2008; Coastal law 2/2013): i) the Central Administration, that manages the coastal public domain; ii) the Regional Administration, that manages land-use planning; and iii) the Local Administration, which is responsible for the maintenance and provision of services to users. This distribution of competencies gives rise to great confusion during the decision-making process that is necessary to achieve the proper solutions for the manager (Palazón et al., 2016). Thus, one of the problems is the management of certain uses (which may be private, although in no case represents a change of land ownership) within the maritime-terrestrial public domain (MTPD) (Coastal law 22/1988). The occupation of the MTPD can generate conflicts between the licensee and the beach users, which requires precise management of this sensitive area. Thus, these high activity concentration areas are classified as special interest (Amoedo-Souto, 2009; Torres, 2009).

One of the tasks that beach managers must perform is to pay special attention to the evolution of the shoreline, since there are studies that demonstrate its continuous retreat because of coastal erosion. This regressive process relentlessly generates a smaller beach surface area (Alexandrakis et al., 2015; Pagán et al., 2016, 2017, 2018). EC (2004) states that traditional local management models are not a good way to solve erosion problems, since the spatial scale of many of these problems goes beyond the local level, yet these managers are in charge of their maintenance and operation. Therefore, from the tourism industry point of view, an appropriate ecosystem management must take into account the relationships between society and ecosystems (Jiménez et al., 2007).

According to the present Spanish Coastal Law, any occupation of the state MTPD public property assets with permanent works or facilities, or removable facilities for a period greater than four years, will be subject to a prior concession agreement granted by the State Administration in public bidding. In this case, concession contracts imply for the designed operator to have the exclusive right to operate, maintain and carry out a user-paid service on public property (e.g., a beach) for a given number of years, in exchange for an annual concession fee. These occupations may not be granted for a period exceeding five years, extendable for equal periods of time.

This work analyses the shoreline evolution of 31 beaches (all of them with a strong tourism presence) in 5 Spanish provinces, and their relationship with the management. At the same time, specifications of concessions (surface area, set boundaries, distances from the concession area to the coastline, annual fee) are studied. Finally, it evaluates whether the concession contract specifications are complied with by the concessionaires (concession areas and distances to the coastline), and the existence of a possible relationship between the concession areas and the evolution of the coastline between the 2005–2016 period.

2. Study area

The study area comprises 31 beaches on the Mediterranean coast, located in the provinces of Valencia (5), Alicante (7), Murcia (4), Almeria (8) and Granada (7), whose coasts have very different physical characteristics (Fig. 1). The area to the north of Cape Nao (Alicante) borders with marshlands intensely transformed by agricultural activity, whereas to the south up to the city of Alicante, the coast is characterized by a landscape of coves and cliffs. Further south, there are extensive beaches and coastal lagoons such as Torre Vieja or Guardamar,

with some islets off the coast.

On the Murcia coast, the effect of wind on the sand gives rise to an important dune field that has closed the coastal lagoon of the Mar Menor (higher temperature and salinity than the outer sea). The southern part of the province is made up of cliffs with small beaches. In this area and the province of Alicante there are important seabed areas where *Posidonia oceanica* meadows stand out.

In the provinces of Granada and Almeria, the foothills of the Betic Mountains near the coast determine very narrow coastal plains, except for the valleys of some rivers. The rivers are short, with markedly seasonal regimes, some with ephemeral currents, but with a significant sediment discharge during the floods.

The tides in the Mediterranean are not constant in time and vary in terms of the type of tide (diurnal, semidiurnal and mixed). They usually have astronomical amplitudes between 0.2 and 0.4 m, so they are considered micro-tides but near the strait area, the amplitude of the tides increases to 0.72 m (Ecolevente, 2006; Ecomag, 2009).

The studied beaches (Table 1) have high occupation (over 90%) and urbanization (over 80%) levels, with sand beaches (70.9%) predominating over gravel beaches (25.8%). In the southern beaches (provinces of Granada and Almería), dark sands predominate, compared to the other provinces with mostly golden sands (Magrama, 2016).

3. Methodology

According to Codignotto (1987), for the purpose of this article, “beach” shall mean the area of unconsolidated material extending towards land from the low tide line to where there is a noticeable change in material or in physiographic conditions, or where the vegetation line is permanent. Maritime-terrestrial public domain (MTPD) is defined in Article 3 of the Coastal Law 1988. MTPD comprises the following zones: sea shore and estuaries, including intertidal zones, beaches, coastal dune fields and similar deposits; marshes, lagoons and generally lowlands flooded by tidal flows; territorial and inland waters, including their bedding and subsoil; and natural resources within the economic zone and the continental platform.

To determine the erosion and retreat of the beach shoreline, as well as to determine the concession area used and its position on the beach, orthophotos were used between 2005 and 2016 (most recent available) obtained from PNOA (Plan Nacional de Ortofotografía Aérea) website (<http://pnoa.ign.es/ortofotos>). In order to digitalize the different surfaces, ArcGIS software (software specialized in Geographic Information Systems) was used. For the shoreline digitalization, the criterion followed was the choice of the last wet tide mark on the sand (Casal et al., 2010).

Starting from the polygons generated by the ArcGIS software for each of the studied beaches, and taking into account the beach nourishments carried out (information provided by the Directorate General of Coasts), the following data were obtained: i) Total beach surface area; ii) Concession area or area included within the concession perimeter; and iii) Net beach area or difference from the other two.

The data about the physical characteristics of the beaches (sediment typology and length) were obtained from the online beach guide edited by the Ministerio de Agricultura, Pesca, Alimentación y Medio Ambiente (Magrama, 2016).

Finally, the specifications for the administrative concessions were obtained from the web pages of the city councils, where the bids for seasonal services are published. In Table 1, those beaches where administrative documents could not be found nor provided by the respective councils are filled with the “N/A” (data not available) text.

4. Results and discussion

Beaches represent an important attraction for a host of establishments (bars, restaurants, umbrella and hammock rentals, beach bars,

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