The diachronic evolution of the Western Greece's Lagoons

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Keywords: Diachronic evolution, lagoons, Western Greece

Introduction

1 The lagoons of western Greece

The Araxos lagoon, lake Prókopos, the marsh of Làmia and the lagoon of Kotychi to the South, in the Prefecture of Elia, make up the chain of wetlands of the western Peloponnese, and along with the lagoon of Mesolongion-Aitoliko constitute the main wetlands of western Greece.

The Araxos lagoonor "Kalogria" (*the nun)* or "Papa", covers an area of 380 ha with a depth ranging between 0,5-3,5 m.

Today, according to the Greek legislation, dated April 29 2009, the area of the Kotychi and Strofylia lagoons has been declared as a protected zone (Figure 1). The map shows that there are two major zones with different level of protection. i.e. Zone A is protected by NATURA 2000 agreement, while Zone B is protected by the Greek legislation, which has characterized this area as a national Park.

Figure 1. National park of Kotychi and Strofylia wetlands

The strategic development

The strategic location of the lagoons had been recognized by the ancient inhabitants of this region. The prehistoric citadel of Teichos Dymaion occupies an imposing rocky hilltop at the southernmost tip of the so-called “Mavra Vouna” (black mountains), between the lagoons of Prokopos and Pappas, near the village of Araxos. Archaeological research has shown that human occupation here began in the Late Neolithic (mid-4th millennium B.C.) and continued almost uninterrupted into the period of Venetian occupation (Mastrokostas 1965, Kolonas 2006). The first significant settlement remains date to the Early Helladic period (ca. 3000 – 2000 B.C.), but the most prosperous and period was the Mycenaean, (13th - 11th cent. B.C.),

when the settlement expanded and the emblematic cyclopean fortification was erected (around 1300 B.C.)[3], to strengthen and symbolize the defensive character of the site (Driessen 1999)[4].

All the above can be described as different aspects of a broader bio-cultural environment, in the sense that Maffi[5] has introduced. In the case of Teichos Dymaion we have a combination of biological and cultural factors that were in action side by side[6].

Teichos Dymaion can be seen as a prime example of a site strategically located in order to make the most of what its setting had to offer, both in terms of subsistence as well as of culturally oriented possibilities (Gazis 2010).

The socioeconomic evolution

During the Bronze Age and specifically during the Mycenaean period (ca. 1600-100 B.C.), we find organized settlements, as a consequence of the combined marine and terrestrial resources. Easy access to water and to fertile land were crucial for the advance of agriculture, animal husbandry, cultivation of trees as well as the commercial activities with the towns of the Western Greece.

The geomorpological evolution of lagoons

Diachronically, the main creators of the Messolonghi lagoon were the two big rivers of the region, Acheloos and Evinos.In Table 1 the diachronic evolution of the alluvial deposits are given. The values of this table were computed based on Villas 1983 after overlaying 2 maps over a current map using GIS method Hatzopoulos, (2008).

It is found that the present protected area includes 22627.7 Ha having increased by 212% in relation to the past due to the soil material brought Acheloos river (Diamanti and all., 2014).

[3] A number of factors that had led to the choice of specific locations for the construction of Late Helladic fortifications have been outlined by Karageorghis 2001.

[4] For a review of the site's history and role see Gazis 2010.

[5] L. Maffi, defines *biocultural diversity* as "the diversity of life in all its manifestations: biological, cultural, and linguistic — which are interrelated (and possibly coevolved) within a complex socio-ecological adaptive system." (Maffi 2007). She also notes that " … the emergence of this field came from the observation that all three diversities are under threat by some of the same forces and from the perception that loss of diversity at all levels spells dramatic consequences for humanity and the earth." (Maffi 2005).

[6] Certain geographic areas have been positively correlated with high levels of bio-cultural diversity, including those of low latitudes, higher rainfalls, higher temperatures, coastlines, and high altitudes.

Period	Hectares [Ha]	Difference [Ha]	Change %	Total Change [Ha]	Total Change %
1900-2000 A.D.	32627.7	0	0.0	22170.3	212.0
1700-1800 A.D.	29355.5	3272.2	10.0	18898.1	180.7
1200-1500 A.D.	28880.5	475	1.6	18423.1	176.2
800-1100 A.D.	26148.7	2731.8	9.5	15691.3	150.0
100-400 A.D.	23027.2	3121.5	11.9	12569.8	120.2
700-400 B.C.	17388.1	5639.1	24.5	6930.7	66.3
2000-1600 B.C.	10457.4	6930.7	39.9	0	0.0

Table 1. The evolution of alluvial deposits in Acheloos River Delta, since 2000 B.C.

The complex of the lagoons covers an area of 15000-22,627.7 ha, Hatzopoulos, (2008), and includes the wider area of the wet land system, the coastal ecosystems and the swamps. The whole wetland system includes 42% of the lagoons on a national level, and the Messolonghi lagoon is one of the greatest in Greece as well as in the Mediterranean basin.

Conclusions

The study of the evolution of Western Greece's wetlands (lagoons, rivers, lakes and marshlands) has disclosed the following:

These wetlands have played, and continue to play an important role in the economic, social and cultural development of this part of Greece.

The prehistoric citadel of Teichos Dymaion was the only fortified mycenaean acropolis in western Greece, and the emblematic cyclopean fortification (erected around 1300 B.C.)[7], strengthened and symbolized the defensive character of the site (Driessen 1999)[8].

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