

INSULAR WETLANDS OF GREECE AND THEIR ROLE IN WILDLIFE BIODIVERSITY THE CASE STUDY OF ZAKYNTHOS ISLAND (WESTERN GREECE- IONIAN SEA)

Moschous Stamatis¹, Karris Georgios¹, Martinis Aristotelis¹, Poirazidis Kostas¹ & Georgiadis M. Nicos²

¹ Department of Ecology and the Environment, Technological Educational Institute (TEI) of the Ionian Islands, GR-29100, 2 Kalvos Square Zakynthos, Greece, e-mail: Moshous@hotmail.com.

² WWF Hellas, GR-10558, 26 Filellinon St., Athens, Greece



Introduction

Wetlands are unique ecosystems with important environmental functions that cannot be replaced by other ecosystems such as the provision of vital habitats for important wildlife species, the removal of suspended particles and pollutants from flowing water, the stabilization of local climatic conditions and the protection of fragile coastlines from erosion and storms.

Most countries have adopted specific measures to protect their wetlands, but there is a significant proportion of wetlands that still face the threat of a continuous degradation. Greece, constitutes a specific case study where wetlands are located not only on the mainland but also on widespread island complexes. The lack of update knowledge of the exact number, location and the ecological status of the Greek insular wetlands lead to non effective sustainable management and poor conservation policy.

In order to gain the baseline data for the Greek insular wetlands that will lead to their wise use, WWF Greece has initiated during the last five years a systematic survey on the Aegean and the Ionian Islands' area¹. The main aim of the present study was to estimate the number, locate, delineate on digital maps and assess the environmental condition of the wetlands of Zakynthos Island so as to contribute to the inventory of the greek insular wetlands survey.

Results/Discussion

A. Wetlands survey

A total number of **10 wetlands** were counted in Zakynthos Island, divided into **four different types** (Figures 1 & 2). The evaluation of the wetlands' ecological character through the data obtained by the survey indicates that, the **Katastari salines** and the **Keri lake**, being respectively defined as parts of an Important Bird Area-IBA, GR086 and a Natura 2000 site-GR2210002, are the most significant wetlands of the whole island (Figures 3 & 4). The systematic recording of environmental quality and wildlife support of the Katastari salines (NE Zakyhnthos, 170 ha) was focused on the avifauna species' richness that the wetland hosts and gave a **total number of 79 species** (Figures 5-9). The five most common Aves families in terms of species' richness were **Sylviidae** (14 species - 17,7%), **Ardeidae** (8 species - 10,1%), **Turdidae** (8 species - 10,1%), **Scolopacidae** (5 species - 6,3%) and **Motacillidae** (5 species - 6,3%). These data point out the international importance of Katastari salines as a bird habitat since this wetland is on a main route of bird migration over the eastern Mediterranean.

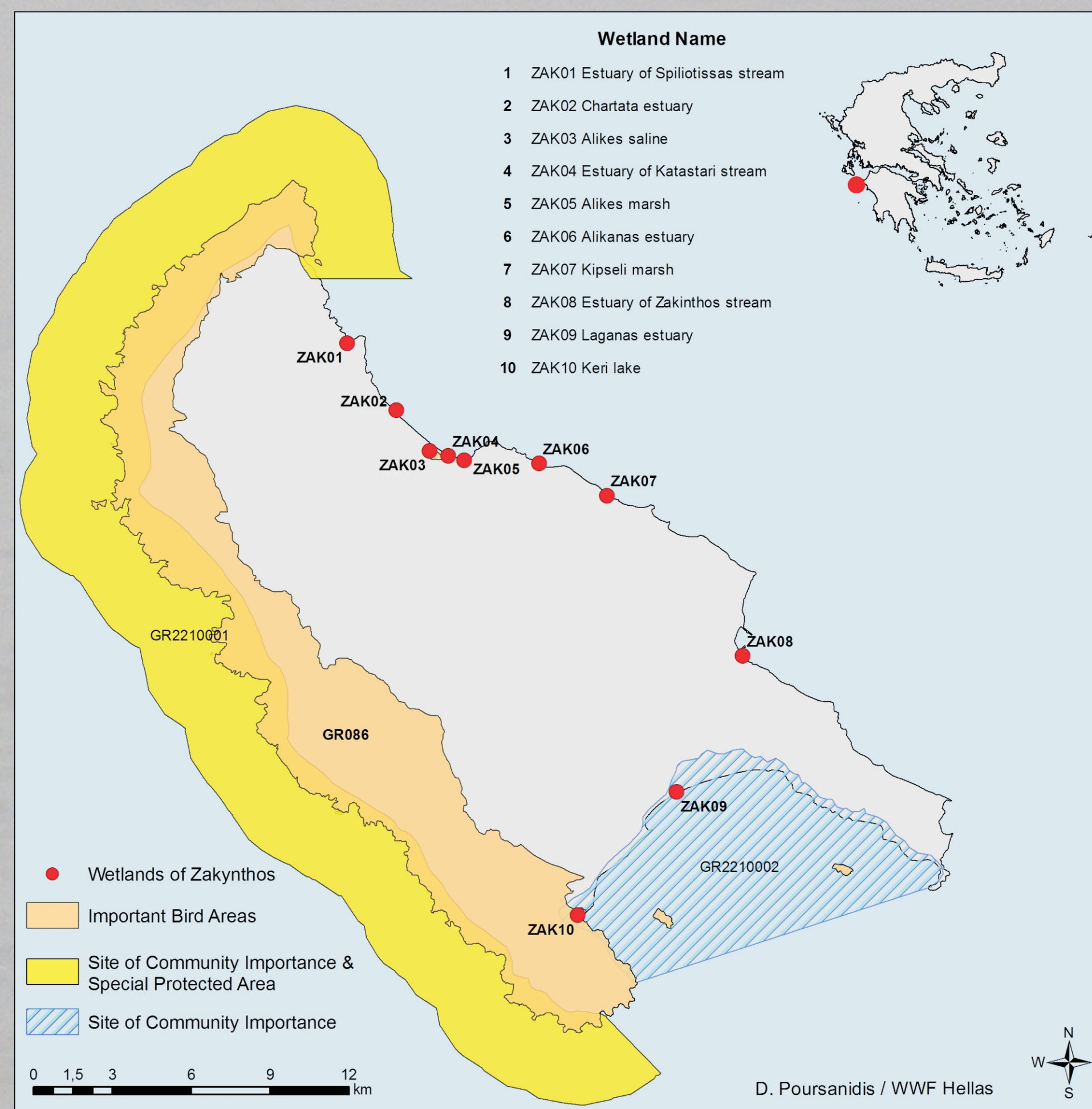


Figure 1. Location of the wetlands in Zakynthos Island

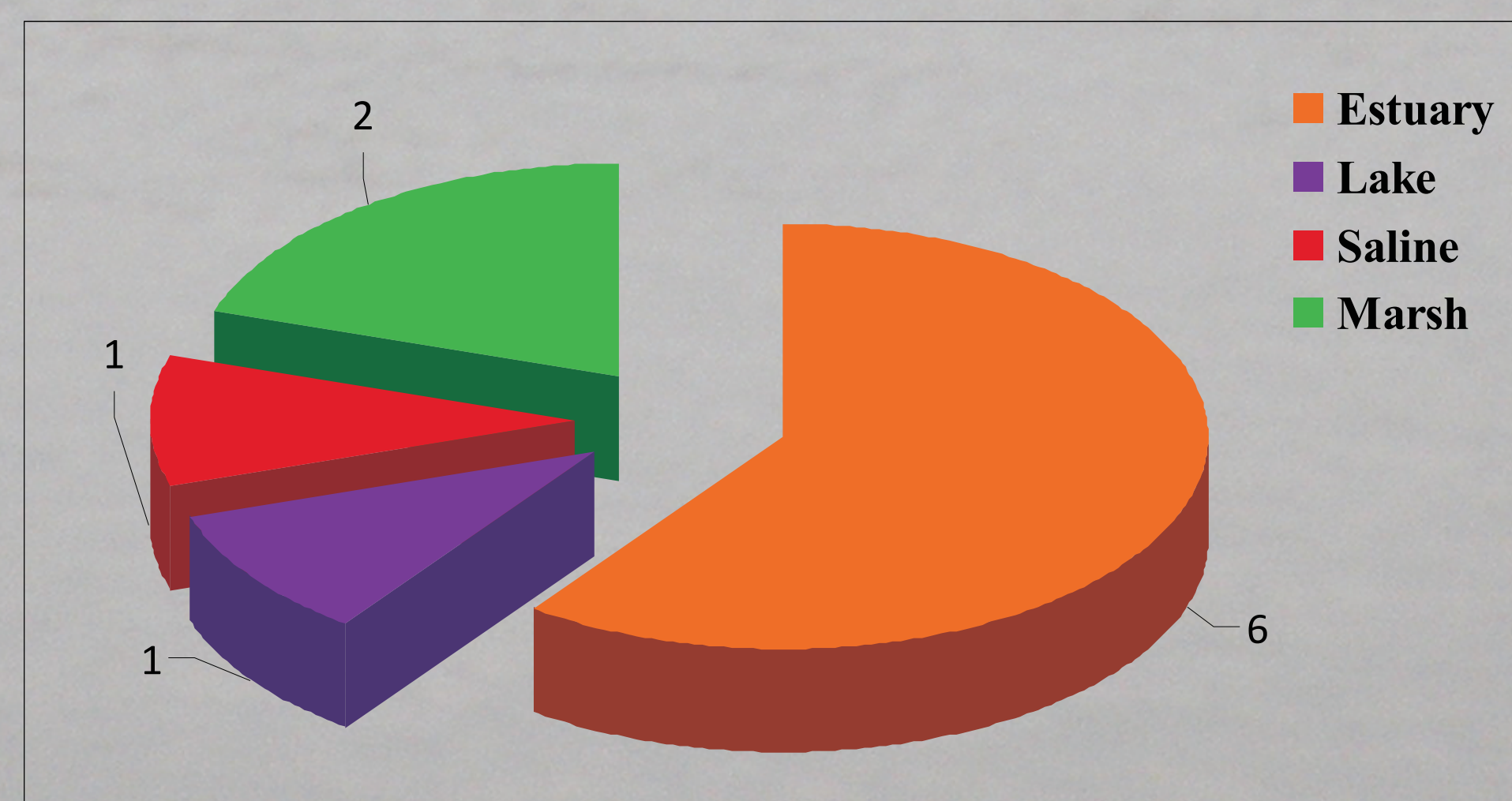


Figure 2. Number and types of Zakynthos wetlands

Study Area & Methods

Wetlands survey was carried out in Zakynthos Island which is located in the south of the Ionian Sea, close to the western coastline of Peloponnisos peninsula, covering an area of 408km². The island has a Mediterranean type of climate, characterized by wet winters and hot dry summers. In addition, Zakynthos faces during the last decades, increasing demands for water, due to its development whereas problems such as salinization, quality deterioration, decline of groundwater level and increasing pollution risks appeared².

From 23rd January - 2nd February 2009, an intensive survey was implemented in order to estimate the number of wetlands and locate them by using GPS devices. These data and their respective biotic parameters as well as wetlands' utilization were collected by using standard counting protocols entered, in a database. The latter was interactively connected with a Geographic Information System (GIS) software so as to be depicted in digital maps.

In addition, the avifauna species' richness that the Katastari salines (situated at the NE part of Zakynthos Island) host, was recorded, based on systematic observations with a spotting telescope and binoculars during April 2008 - May 2009. Further research on local residents' attitude regarding the ecological importance of the salines, the need of their protection and the ways of their development and management was implemented by using questionnaires that were distributed. The questionnaires consisted of 8 questions, requiring in many cases a restricted response, and others of a multiple-choice nature, although there was an opportunity for open answers.



Figure 3. View of the Keri lake (photo: S. Moschous)



Figure 4. View of the Katastari salines (photo: G. Karris)



Figure 5. Wood Sandpiper (*Tringa glareola*) photo: G. Karris



Figure 6. Temminck's Stint (*Calidris temminckii*) photo: G. Karris



Figure 7. Little Egret (*Egretta garzetta*) photo: G. Karris



Figure 8. Barn Swallow (*Hirundo rustica*) photo: G. Karris



Figure 9. Recording birds in Katastari salines (photo: G. Karris)

B. Questionnaires

This study was carried out in the neighbouring community of the Katastari salines following the example of previous studies^{3&4}. A **total number of 103 questionnaires** were completed by the inhabitants, **covering a 10% of the local community**. The preliminary evaluation of the results showed that:

- There is a serious lack of knowledge about the importance of wetlands as well as lack of relative environmental education.
- The highest percentage of inhabitants (**75%**) is not aware of the wetland's importance and more specifically of its ecological value regarding the birds migration flow.
- The highest percentage (**81%**) of inhabitants believe that the Katastari salines have still not been properly developed and they are not satisfied with the current status of the wetland.
- A percentage of **50%** wanted an integrated management of land, water and living resources which, according to their opinion, could contribute to the establishment of an environmental education center or could help the planning of a sustainable touristic policy, whereas a percentage of **21%** welcomed a drainage approach for the wetland's management and a further touristic development.

References

- ¹Catsadorakis, G. and K. Paragamian. 2007. Inventory of the wetlands of the Aegean Islands: Identity, ecological status and threats. World Wide Fund for Nature - WWF Greece, Athens, 392 pp.
- ²Diamantopoulou, P. and K. Voudouris. 2008. Optimization of water resources management using SWOT analysis: the case of Zakynthos Island, Ionian Sea, Greece. Environmental Geology (54): 197-211.
- ³Yanxia W., Yong Y. and J. Meiting. 2008. Wise Use of Wetlands: Current State of Protection and Utilization of Chinese Wetlands and Recommendations for Improvement. Environmental Management (41): 793-808.
- ⁴Christopoulou, O. and E. Tsachalidis. 2004. Conservation policies for protected areas (wetlands) in Greece: A survey of local residents' attitude. Water, Air and Soil Pollution: Focus (4): 445-457.