

44<sup>th</sup> Annual Congress of the  
International Association of Hydrogeologists (IAH)

“Groundwater Heritage and Sustainability”



Dubrovnik, Croatia, September 25<sup>th</sup> to 29<sup>th</sup> 2017

Book of Abstracts

Code of abstract: T6.4.1

Type of presentation: Oral presentation

Topic: T6. Coastal and Island Hydrogeology

Session: T6.4. Management of groundwater resources of coastal aquifers

## **A comprehensive approach to the knowledge of the coastal carbonate aquifers of Adriatic and Ionian Seas**

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**KEY WORDS** - Coastal Carbonate Aquifer, seawater intrusion, geodatabase, Ionian Sea, Adriatic Sea

### **ABSTRACT**

The increasing groundwater exploitation and contamination risks due to the progressive population growth in coastal areas are emphasized in the case of carbonate coastal aquifers (CCAs), the peculiarities of which, especially in the Mediterranean basin, constitute a scientific matter of worldwide relevance.

The CCAs of the Adriatic and Ionian coasts not only ensure the socio-economic development of the populations but feeds with their spring waters valuable wetland and coastal environments with relevant and highly positive effects on ecosystems. The groundwater resources of CCAs are highly vulnerable, especially if affected by karstic phenomena, to the quality and quantity degradation phenomena, not only for the increasing water demand and the decreasing recharge due to climate changes but also in relation to the sea level changes and the pollutant loads due to the contamination occurred in the whole hydrogeological basins.

The aim of this study is to offer a systematic and synoptic view, useful for knowledge, management and forecast purposes, contributing to assure enduring availability of high quality groundwater, conciliating water demand satisfaction with the ecological needs of coastal Adriatic and Ionian environments in which the role of groundwater is very important. A geodatabase, collecting information for all carbonate aquifers present along the Adriatic and Ionian coast, have been created. At the core, there is a Geographic Information System, in which are placed the spatial information regarding the geology of aquifers, hydrogeological and geochemical features, together with specific information concerning groundwater use of CCAs. The added value of this database is the availability of a wide bibliography related to CCAs, together with a schematised summary of key information realised considering available information in the whole geodatabase.

Starting from this idea, the cooperation between hydrogeologists experts of different areas, have enabled to focus on some specific areas of peculiar hydrogeological interest, as for the CCAs of Apulia (SE Italy), South-western Slovenia, Western and South Croatia, Montenegrin coast (Boka bay) and Western Greece.

