



Geo-database and characterisation of drought effect on groundwater

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Main droughts recently occurred in Calabria and regional sectors hardest hit have been found carrying out an historical research. A regional newspaper has been selected as an information source and articles concerning drought have been selected for the period among 1980 to 2005. Data inferred from the articles have been organized in a database in which both hit areas and damaged sectors have been highlighted.

During the study period, the northern sector of Calabria has been hit the hardest. On this sector additional data have been found in order to better understand the effects of drought on groundwater availability, particularly on the Sibari Plain, the main coastal plain of Calabria.

For this reason, the climatic trend and the occurrence/duration of exceptionally dry periods have been investigated, based on long rainfall and temperature time series. In addition, in order to characterize the effects of droughts periods on the availability of groundwater, piezometric data, which had been collected from the thirties, have been compared to 2002 and 2006 in-situ measurements.

At the end a geo-database has been implemented including too climatic and hydrogeological data.

The analysis has shown a remarkably negative rainfall trend and a widespread piezometric lowering, triggering further negative effects in terms of potential quality degradation of groundwater for seawater intrusion.