



Overexploitation of coastal groundwater resources in Northern Greece

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Groundwater is a valuable natural resource in Mediterranean countries as it plays a vital role to the national economies of these countries, and Greece could not be the exception to the rule. The fact that almost 87% of the total amounts of water which are annually exploited for different uses, are used for agricultural purposes, proves the necessity for rational groundwater resources management in Greece. The practice of groundwater resources overexploitation, lead also to qualitative degradation in case where the aquifer system is hydraulically connected to the sea, and therefore seawater encroaches towards the mainland. Especially in Northern Greece, this fact is a very common environmental problem as most of the main aquifer systems lay within a zone of less than 30 km distance from the shoreline. This paper investigates the groundwater resources management of Northern Greece -with special reference to the seawater intrusion phenomenon- and presents the results of some case studies during the last decade. All investigated aquifer systems are sedimentary, and hence they all concern seawater intrusion in porous media due to overpumping of groundwater. The paper also analyses the enforcement of water resources management legislation into Northern Greece, as applied by the relevant water authorities. The aforementioned are supported by the development of a Geographical Information System, GIS, based on the demands of the European Water Framework Directive 2000/60/EC, illustrating the qualitative status of groundwater resources and the degree of contamination due to seawater intrusion.