The title (العنوان):

Scenario modeling of the groundwater in a coastal aquifer (Jijel plain area, Algeria)

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ABSTRACT: This study investigates the effect of drought and pumping discharge on groundwater supplies and seawater intrusion in the Jijel plain area (Algeria). The numerical model developed based on available hydrogeological data in real scale such as the calibration can be done only with real data. The groundwater model for the Jijel plain area was calibrated in two steps: (1) steady-state calibration to average conditions during 2012 and (2) calibration to transient conditions from 2012 to 2042 (30 years). The main objective is to quantify the components of the groundwater balance, to estimate the hydraulic conductivity distribution, and to control the encroachment of seawater into coastal aquifer systems. The impact of pumping discharge and drought on groundwater level evolution has been examined. As the population continues to grow and the demand for groundwater pumping intensifies beyond 2012, it can be expected that the actual extent of seawater intrusion and anthropogenic pollution in the future will be more severe than that predicted by the model. For example, the maximum drawdown value is recorded in the northwest of the study area (11.30 m). This drawdown is explained by the overexploitation, which causes the advancement of seawater in the northern region and anthropogenic pollution in the central region (next to cities). Better strategies for groundwater development and management, such as artificial recharge and modern irrigation systems, will be necessary to conserve freshwater aquifers and protect them from pollution.

Keywords: Model calibration , Drawdown , Piezometric level , Seawater intrusion , Coastal aquifer

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2-https://www.researchgate.net/profile/Hakim-Saibi-2/publication/336719893_Scenario_modeling_of_the_groundwater_in_a_coastal_aquifer_Jijel_plain_area_Algeria/links/609c93aea6fdcc9aa7ddacb5/Scenario-modeling-of-the-groundwater-in-a-coastal-aquifer-Jijel-plain-area-Algeria.pdf