



Application of Multivariate Statistical Techniques for Characterization of Groundwater Quality in the Coastal Aquifer of Nador, Tipaza (Algeria)

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A b s t r a c t

The study focuses on the characterization of the groundwater salinity on the Nador coastal aquifer (Algeria). The groundwater quality has undergone serious deterioration due to overexploitation. Groundwater samplings were carried out in high and low waters in 2013, in order to study the evolution of groundwater hydrochemistry from the recharge to the coastal area. Different kinds of statistical analysis were made in order to identify the main hydrogeochemical processes occurring in the aquifer and to discriminate between different groups of groundwater. These statistical methods provide a better understanding of the aquifer hydrochemistry, and put in evidence a hydrochemical classification of wells, showing that the area with higher salinity is located close to the coast, in the first two kilometers, where the salinity gradually increases as one approaches the seaside and suggests the groundwater salinization by seawater intrusion.

Key words: coastal aquifer, statistical analysis, hydrogeochemical parameters, groundwater quality, seawater intrusion.