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Using vegetation units as salinity predictors in the Lower Cheliff Algeria

of

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**Abstract:** The Lower Cheliff plain is among the largest salted soils in north-western Algeria. In order to establish the relationships between the main soil factors and plant species in this stressed ecosystem, 133 relevés related to soil and vegetation were realized. Soil variables measured included electrical conductivity and calcium carbonate. The 133 relevés were arranged in clusters using k-means classification. The similarity analysis used to examine the variation in vegetation assemblage structure showed significant differences in taxonomical composition among groups of relevés. The phi coefficient of fidelity used then to extract the different vegetation units and to measure species concentration in each vegetation unit enabled us to extract a synoptic table with 6 vegetation units, exclusively related to conductivity. The results of redundancy analysis were concordant with k-means clustering results and showed that conductivity is the main factor affecting the vegetation distribution in the Lower Cheliff plain whereas CaCO<sub>3</sub> plays a secondary role. The approach used in this study enabled us to extract 4 ranges of salinity in the Lower Cheliff according to the optimum of salinity tolerated by each vegetation unit.

**Key words:** Analysis of similarity, fidelity, vegetation unit, conductivity, Lower Cheliff, Algeria

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