

The vulnerability of groundwater of the Crau plain in a context of change in land use

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In the Crau plain (520 km², Western part of the region of Marseille), With the arrangement of canals which began at the end of the 17th century, the irrigation by flood in a part of the plain has allowed the production of an quality hay and the preservation of a performing traditional socio-ecological system named "Pastoralism - Foin de Crau" between the arid part (steppe) and the Green Crau with a voluminous groundwater in the Green Crau.

During the second part of the XXth century the traditional economical functions have quickly changed in a context of uncertainty about the future of climate and a strong pressure on this territory, characterized by an irrigated part (the Green Crau) and a dry part (the steppe named Coussoul) : (1) the surface used for the regular flood (irrigation) in hot season of meadows for hay has decreased, while this water allows the alimentation of an important groundwater in which 80 million of m³ of water are taken every year; (2) the arid steppe, used seasonally by the ovine pastoralism, allows the preservation of a unique biodiversity. These fast changes in the land use raise the question of the durability of this groundwater today which offers numerous ecosystem advantages to the populations but also, the preservation, even the reconstruction, a rare biophysics environment and the major ecological interest. The management of the groundwater of Crau just like the conservation of the agro-system of the dry steppe thus constitutes an inseparable territorial stake. The impact of Man on this old ecosystem modelled slowly by the man is very vulnerable in front of exogenous disturbances.

What are today the threats generated by the evolution of the land uses for the groundwater but also on the preservation of the unique and ancestral agro-ecosystem of the steppe?