

THÈME 01 : Bio-écologie de la steppe et exploitation des bio ressources agro-sylvo-pastorales.

Titre de la présentation affichée :

**Climate Changes, an Alarming Impact on the Steppe Ecosystem
(Case of Djelfa)**

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Résumé:

The utterly obvious delay of some trees defoliation on the one hand, and the advance of blooming of some trees mainly the palm tree on the other hand which are witnessed this last years usually at end of December to January in the region of Djelfa are uncontestable evidence of the reality, significance of the climate changes and theirs impacts. These strange phenological behavior in addition to the disappearance of many species have sparked this very research as well as others based on many methods including those of the time series analysis, pre-whitening with ARIMA model, trend analysis by Kendall's tau and Sen's slope and homogeneity tests. The outcomes of these studies consist of the reveal of the general climate warming due to the increase of the three temperature (mean, max and min) and the climatic drought. In fact, a global warming of 1°C was recorded, more due to Tmin (1.4°C) than to Tmax (0.92°C). Summer was the most warming season, then autumn and finally spring. However, a slight cooling was in December and February, intermediated by January's warming which would cause early break of the overwintering and the subsequent damages. Also, an almost recent abrupt change (of about 1°C to 3°C) was recorded except for winter, whose frost and cold disappearance would be partially caused by drought. Indeed, a drastic variability was recorded for all the monthly and annual rainfall from year to another with no seasonality; namely a strong hydric stress would threaten plants subsistence and cause summer flood that destroys soil. Moreover, an annual decreasing was due to almost of months decreases particularly winter and spring. However, August, September and October recorded slight increases to let expect an eventual autumnal advance in August instead of September. Under the desertification threat, this drought and the drastic hydric stress make a real challenge to the sustainable development of the steppe ecosystem.

Mots-clés : Climate change, Warming, Drought, Blooming, Defoliation, Sustainable Development, Steppe Ecosystem, Djelfa, Phenology.