Geophysical Research Abstracts
Vol. 18, EGU2016-5129-1, 2016
EGU General Assembly 2016

Evaluating the Old World Drought Atlas in North Africa

Ramzi Touchan (1), Dalila Kherchouche (2), Kevin Anchukaitis (3), Said Slimani (4), Jordan A. Krcmaric (5), and David M. Meko (1)

(1) Laboratory of Tree Ring Research, The University of Arizona, United States (rtouchan@ltrr.arizona.edu), (2) Institute of Veterinary and Agronomy Sciences, The University Hadj-Lakhdar, Batna, Algeria (d.kherchouche@yahoo.fr), (3) University of Arizona, ENR2 Tucson, AZ, USA (kanchukaitis@email.arizona.edu), (4) Faculty of Biological Sciences and Agronomy, The University Mouloud Mammeri, Tizi Ouzou, Algeria (slimanisaid@yahoo.fr), (5) Laboratory of Tree Ring Research, The University of Arizona, United States (dmeko@ltrr.arizona.edu)

Drought is a focal point in the assessment of hydroclimatic variability in the Mediterranean Basin. The Old World Drought Atlas (OWDA) by Cook et al. (2015) was the starting point for understanding several centuries of drought occurrence, duration, and severity over all of Europe including the Mediterranean Basin. Here, we investigate the extension of the OWDA to North Africa (NA), specifically Algeria, since droughts there can have drastic social and economic impacts. Pearson correlations were used to gauge strength of the relationship of gridded reconstructed series from OWDA (-0.25° W-34°.25N, 34°.75N, 35°.25N, and 35°.75N) with 27 tree-ring chronologies from various species from Algeria. Correlations range from 0.35 ($p < 0.0001$) to 0.025 ($p > 0.627$), and suggest the OWDA does not fully reflect the regional drought patterns in parts of Algeria and nearby NA. Lower correlations between local tree-ring chronologies and OWDA grids are related to the lack of tree-ring chronologies from Algeria within the OWDA. Work is ongoing to blend existing chronologies from the Mediterranean region with newly developed chronologies from currently under-sampled parts of NA and generate a Mediterranean Basin Drought Atlas (MBDA) that chronicles spatiotemporal drought variability over the past few centuries to millennium. The MBDA will complement the OWDA, the existing 'North American Drought Atlas' (NADA), and the 'Monsoon Asia Drought Atlas' (MADA) in charting drought history of the Northern Hemisphere.