



Evaluation of weather-related indicators in the prediction of wildfire risk in a Mediterranean region, in the frame of DISARM project

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Drought and wildland fires constitute major threats for the sustainable development of countries in southeast Mediterranean. Both hazards are recognized for their adverse impacts on communities, infrastructures, and cultural/environmental protected areas. The relationship between droughts and fires has been well documented in the Mediterranean region. There is also evidence of an increasing trend in dry periods, in the occurrence of fires and the resulting burnt areas. This study is performed in the frame of DISARM Interreg Balkan-Med project, co-funded by the European Union and national funds of the participating countries, that brings together the countries of Greece, Bulgaria and Cyprus, with the aim to establish a common strategic framework for tackling the challenges posed by drought and wildland fires. More specifically, the current work examines the relationship between drought and fire in Greek forests by using various drought and precipitation measures, and indicators, namely: the Canadian Fire Weather Index, Keetch-Byram Drought Index (KBDI), Nesterov Index (NI), Modified Nesterov Index (MNI), Zhdanko Index (ZI), Swedish Angstrom Index (SAI), and McArthur Forest Fire Danger Index (FFDI). The aim is to evaluate the performance of these indicators and to identify drought-related predictors of the occurrence and the dangerous spread of fire. Data with respect to the fire events are provided by the Greek Fire Service, covering the period 2000-2016. Weather data are provided from the network of automated weather stations of the National Observatory of Athens, as well as from numerical simulations performed with WRF model for the same 17 year long period. The findings are expected to have significant implications for the evaluation of weather-related indicators in the prediction of local wildfire risk.