



Circum-Mediterranean fire activity and climate changes during the mid-Holocene environmental transition (8500-2500 cal yr BP)

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In this contribution I will present a synthesis of mid- to late-Holocene fire activity from the Mediterranean basin and explore the linkages among fire, climate variability and seasonality, and people through several climatic and ecological transitions. Regional fire histories were created from 36 radiocarbon-dated sedimentary charcoal records, available from the Global Charcoal Database. During the mid-Holocene "Thermal Maximum", charcoal records from the northern Mediterranean suggest the region was more fire prone while records from the southern Mediterranean indicate a decrease in fire activity associated with wetter-than-present summers. A North-South partition at 40-43°N is apparent in the central and western Mediterranean. In the context of orbitally-induced summer insolation decrease, South Mediterranean wet conditions could be linked to the Afro-Asian summer monsoon which weakened after ca. 8000-6000 cal yr BP. Relatively abrupt changes in fire regime observed at ca. 5500-5000 cal yr BP may be associated to a threshold in this weakening influence of the orbitally-driven Afro-Asian monsoon strength. Charcoal records of past fire activity appear sensitive to both orbitally-forced climate changes and shorter lived excursions which may be related to cold events apparent in the North Atlantic record of ice-rafted debris. These results contradict former notions of gradual aridification of the entire region due to climatic forcing and/or human activities. In contrast, they suggest: 1) Teleconnections between the Mediterranean area and other climatic regions, in particular the North Atlantic and the low-latitude monsoon areas, influenced past fire regimes; 2) Gradual forcing, such as changes in orbital parameters, may have triggered more abrupt shifts in fire regime, either directly or indirectly through these teleconnections.