



Late Holocene Palaeoecology of Cappadocia (Turkey): Multiproxy evidence from annually-laminated sediments from Nar Gölü crater lake.

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Coupled multi-proxy indicators (pollen, stable isotopes and charcoal) reconstructed from annually-laminated lake sediments from Nar Gölü in Cappadocia (central Turkey) complemented by documentary and archaeological evidence provide a detailed record of environmental changes and their causes from late Antiquity (AD 300) to the present day. Stable isotope data indicate marked shifts in the variability in summer drought intensity and winter-spring rainfall, but these did not coincide in time with changes in vegetation and land use shown by pollen data. Rather, human impacts appear to have been the main driver of landscape ecological changes in Cappadocia over the last two millennia. Pollen and charcoal data indicate four principal land-use phases: (i) an early Byzantine agrarian landscape characterised by cereals and tree crops, and marking the later part of the so-called Beyşehir Occupation phase; (ii) a period of landscape abandonment and the establishment of secondary woodland from AD 670-950 coinciding with the Arab invasions of Anatolia and marking the transition from late Antiquity to the middle Byzantine period; (iii) the re-establishment of cereal-based agriculture and pastoralism from *ca.* AD 950, with this cultural landscape being maintained through the Byzantine “Golden Age”, the Selçuk and Ottoman Empires; and (iv) agricultural intensification during the late Ottoman era and the Turkish Republic (AD 1830 to present). Charcoal fluxes indicate that prior to the 20th century,

landscape burning was most frequent at times of diminished human impact when fuel biomass increased. Pollen and historical data show remarkably close agreement in terms of the timing of landscape change, and the former suggest that rural cultural traditions were able to survive largely intact through short-lived periods of socio-political dislocation such as the 6th century Justinian plague and the 13th century Mongol invasions.