

Human-climate-environment interactions during the past 4000 years in the Taurus Mountain Range, SW Turkey

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The Eastern Mediterranean has been an area of intense human occupation since the early Neolithic. However, contrary to many temperate environments in NW Europe, human pressure on the landscape did not follow a linear trajectory from the Neolithic to the present, but is rather characterised by cycles of land cover expansion and contraction. Here, we provide a synthesis of human-climate-environment interactions in the region of the antique city of Sagalassos in the Taurus mountain range of SW Turkey. The combination of archaeological, palynological and geomorphological data, together with geochemical sediment provenancing and spatial modelling techniques, enabled to reconstruct the relative importance of anthropogenic pressure and climatic changes on the environment. The sensitivity of the landscape towards anthropogenic disturbance is strongly controlled by the geomorphic-tectonic setting, as well as by important feedback mechanisms in the soil system. The first major clearing of the landscape in the Iron Age led to a peak in soil erosion, but also to soil exhaustion limiting erosion rates in subsequent periods. Soil erosion and sediment delivery is more limited during the main occupation phases of the Roman Imperial Period. Periods with more favorable climate in the Roman and Mid-Byzantine periods resulted in the occupation of more isolated parts of the territory (i.e. higher up in the mountains), whilst a decrease in human pressure can be observed during the Early Byzantine and Ottoman periods related to less favorable conditions. Such smaller and short-lasting bursts of human occupation did not significantly impact the environment. Only in the last two hundred years, human pressure reached similar values as those encountered in the classical period.