

EGU22-11536

<https://doi.org/10.5194/egusphere-egu22-11536>

EGU General Assembly 2022

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Palaeosol evolution and human disturbance on Mediterranean coastal pedosequences (SW Sardinia, Italy)

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In the southwestern coast of Sardinia coastal sediments preserve evidence of geomorphic processes such as slope, colluviation and pedogenesis, as well as human activities. We present the preliminary results of an integrated approach focused on descriptive and analytical soil investigation together with micromorphological data, geoarchaeological investigations and landscape survey as part of a larger project aimed to characterise the geoheritage of the region. We describe palaeosol sequences related to stratal architectures that date back to the Late Pleistocene. Our goal is to gain information on landscape evolution in the area and the effect of human agency on the larger environment, as well as document hydroclimatic change.

At the current coastline level, the last marine transgression exposed marine sequences dated to the MIS5, later covered by fluvial and slope deposits throughout the last portion of the Late Quaternary. Several soil sequences show traces of recent colluvial events of anthropogenic origin. Such deposits contain pottery and other human made materials related to the Iron/Roman age. These initial findings seem to suggest a strong control of human activity on environmental change in the area, not related to a single location but widespread in the landscape. This control was such to cover and take precedence over the natural pre-existing surface dynamics, thereby complicating the definition of Anthropocene in Sardinia. Further investigations would bring more light on the ways palaeosols can inform on the shifts in human land use and occupation. How has land use accelerated since the Bronze age? How can these palaeosequences inform us about anthropogenic processes overstepping natural ongoing surface dynamics?