

The archaeological research provides an effective support to the studies upon climate change, since it explores ancient environments and human responses to changing conditions over time.

Since 2011 the Department of Cultural Heritage of the University of Padova has been exploring the archaeological site of Nora (Sardinia, Italy) and its surrounding sea, in order to detect and preserve the coastal and submerged structures and to provide a model of the ancient environmental and urbanistic aspect of the site. Seasonal storms and global sea level rise (SLR) have been proved to be the main impact factors, today, as well as in the past.

The ancient scenario has been shaped combining archaeological research, digital terrain models and geomorphological assessments. It has provided the essential frame for modelling paleoenvironmental and paleosettlement reconstructions. By applying the studies upon the Mediterranean SLR during the Holocene, the ancient coastline of the peninsula has been drawn along the current -1.40 meters depth. Values from the geological and archaeological markers have been used to validate the model. A particular focus is currently drawn on a long submerged structure that might be explained as a breakwater, probably assembled as a human response to face an ancient progressive process of SLR.

The project takes into account even the present and future outcome of SLR on the coastal heritage, by recording the current rate of coastal erosion and of regional SLR and by applying a predictive modelling of SLR by 2100 (IPCC 2013) to inform public administrations and inspire preservation projects.