WATERISKULT - Climate change risk to underwater cultural heritage in stone

The impact of climate change on cultural heritage has been addressed only recently beside the most discussed environmental and socioeconomic implications. Broad attention is given to the vulnerability of tangible cultural assets on land, whereas underwater sites are often neglected.
WATERISKULT provides the first quantitative assessment of the climate change risk to underwater cultural heritage, with a focus on archaeological stone. The project aims at predicting the effects of key-factors of climate change on stone deterioration, i.e. ocean acidification (combined with sea level rise and ocean warming) and increasing intensity and shifts of extreme weather events (cyclones); by laboratory simulations, field-exposure tests, and monitoring of heritage stones, the effects of different levels of CO2, pressure, and temperature in seawater and high-intensity ocean currents will be investigated. This project also aims at exploring the causes and effects of current deterioration in underwater archaeological sites, constrained by diverse stone properties and submarine environments, specifically in the Mediterranean region. Downscaled trends and patterns of observed and predicted stone decay will be obtained, based on the (micro)structural and compositional changes and biodeterioration. This research adopts an interdisciplinary approach involving petrography/mineralogy, oceanography, analytical chemistry, marine biology, hydraulic engineering, and underwater archaeology.
WATERISKULT may pave the way to long-term strategies of heritage protection and studies of other archaeological materials. By marking a step forward in assessing the climate change risk to the anthroposphere, the timeliness of this project reflects the policies and research promoted by the EU, at the forefront of the fight against climate change and heritage valorization. The echo of the environmental debate on the media is now stronger than ever, and so are the possibilities to raise public awareness.

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Find out more: **https://cordis.europa.eu/project/id/101022386**