

Evidence for an evolving sub-oxic water mass in the Eastern Mediterranean (EMS) interacting with the Nile flood during sapropel S1; effect on P geochemistry

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Oxygen minimum zones are expanding in the Modern ocean as a result of global environmental and climate change. It is thus important to use paleoinformation to understand the temporal and spatial evolution of OMZ's. Recent GCM modeling of the S-1 sapropel in the EMS have suggested a previously unrecognized 4th water mass at 500-1800 m, called here Sapropel Intermediate Water (SIW). SIW flowed from the Adriatic to the east becoming increasingly depleted in oxygen due to descending labile organic matter and increasingly by organic matter derived from the greatly increased Nile flood. There was a major interruption in anoxicity associated with the 8.2 ky global event in all cores above 1800m but no interruption in deeper cores. The start of S1 anoxicity was later in deeper water for cores near the modern Israeli coast which is characteristic of an expanding OMZ. New data will be discussed on P sampled from SIW depths under the Nile plume and compared with previous results for S1 sapropels in deep basin, locations which remained anoxic throughout S1.