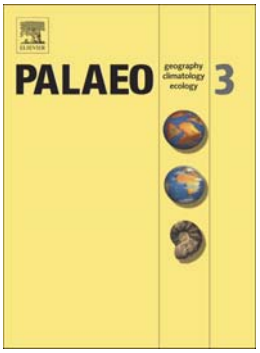

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PII: S0031-0182(16)30256-5
DOI: doi: 10.1016/j.palaeo.2016.07.014
Reference: PALAEO 7905

To appear in: *Palaeogeography, Palaeoclimatology, Palaeoecology*

Received date: 8 February 2016
Revised date: 5 July 2016
Accepted date: 9 July 2016

Please cite this article as: Naik, D.K., Saraswat, Rajeev, Lea, David W., Kurtarkar, S.R., Mackensen, A., Last glacial-interglacial productivity and associated changes in the eastern Arabian Sea, *Palaeogeography, Palaeoclimatology, Palaeoecology* (2016), doi: 10.1016/j.palaeo.2016.07.014

Last glacial-interglacial productivity and associated changes in the eastern Arabian Sea

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Abstract

We reconstruct paleo-productivity and bottom water oxygenation changes during the past 32 ka, from the southeastern Arabian Sea, using absolute abundance of planktic foraminifera, relative abundances of *Globigerina bulloides*, angular asymmetrical benthic foraminifera (AABF), measurements of total organic carbon (C_{org}), %$CaCO_3$, and *Globigerinoides ruber* $\delta^{18}O$ and $\delta^{13}C$. The faunal and geochemical proxies suggest that productivity in the southeastern Arabian Sea was high during MIS 3. A distinct decrease in productivity is inferred during the last glacial maximum (19-23 ka) (LGM). Bottom water was well oxygenated during MIS3, only to become oxygen-depleted during the LGM. Productivity decreased abruptly during Heinrich Stadial 1 (HS-1), but the response to Heinrich Stadial 2 (HS-2) was different. Low productivity during the early deglaciation is also synchronous with an increase in ice-volume corrected $\delta^{18}O$ ($\delta^{18}O_{sw\text{-}ivc}$), a salinity proxy, between 18.9 (18.3-18.9) ka BP and 15.9 (15.0-16.3) ka BP, and a concomitant