



Recent changes in the Arabian Sea ecosystem linked to large-scale climatic events

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Between 1994 and 1996, the Arabian Sea became the focus of a multinational effort directed at studying ocean biological and physical processes and their links to the global carbon cycle. The results of this comprehensive, multi-disciplinary effort known as the Joint Global Flux Study (JGOFS) program provided important indications of the role of the reversal of the monsoons and the extremes in wind forcing, in causing the greatest seasonal variability of primary production and vertical flux of carbon observed in any of the world's oceans. Since the end of the JGOFS program, most contemporary shipboard investigations of primary productivity and biogeochemical processes have come mostly from small programmatically focused shipboard cruises that have been regional in scope. On the other hand, most recent large basin-scale studies have relied mainly on coupled physical-biological models and on satellite data. Here we present a synthesis of recent observations from shipboard cruises and satellites, together with modeling studies which highlight the extreme sensitivity of the Arabian Sea ecosystem to climatic events. We posit that the Arabian Sea ecosystem is undergoing rapid change as a result of changes in physical processes tied to climate change.