Diversity and distribution of winter phytoplankton in the Arabian Gulf and the Sea of Oman

Igor Polikarpov, Maria Saburova, Faiza Al-Yamani

www.elsevier.com/locate/csr

PII: S0278-4343(16)30109-1
DOI: http://dx.doi.org/10.1016/j.csr.2016.03.009
Reference: CSR3388

To appear in: *Continental Shelf Research*

Received date: 29 July 2015
Revised date: 23 February 2016
Accepted date: 8 March 2016

Cite this article as: Igor Polikarpov, Maria Saburova and Faiza Al-Yamani Diversity and distribution of winter phytoplankton in the Arabian Gulf and the Sea of Oman, *Continental Shelf Research* http://dx.doi.org/10.1016/j.csr.2016.03.009

Diversity and distribution of winter phytoplankton in the Arabian Gulf and the Sea of Oman

Igor Polikarpov*, Maria Saburova, Faiza Al-Yamani

Environment and Life Sciences Research Center, Kuwait Institute for Scientific Research, P.O. BOX 1638, Salmiya 22017, Kuwait

*Corresponding author. igor.polikarpov@gmail.com

Abstract

The spatial distribution of the phytoplankton (diversity, composition, and cell abundance) was described in relation to local environmental conditions across the Arabian Gulf, the Strait of Hormuz, and the Sea of Oman based on data of ROPME cruise of winter 2006. The 376 phytoplankton taxa identified in these waters represented a diverse composition of species with a prevalence of dinoflagellates and diatoms. Three peaks in the phytoplankton abundance were recorded throughout the studied area associated with diatom-dominated phytoplankton blooms in the central and northwestern part of the Arabian Gulf and in the Sea of Oman and the adjacent waters. The studied area was divided into three main regions by cluster analysis based on differences in the phytoplankton composition and concentration. The Sea of Oman and the Strait of Hormuz were occupied by highly abundant, strongly diatom-dominated phytoplankton assemblage. The Arabian Gulf was divided into two main regions along a diagonal northwest-southeast axis, with diatom-dominated phytoplankton assemblage off the south and along the Iranian coast but with flagellate-dominated phytoplankton of the north and along the Arabian coast. The distance-based linear modeling revealed a significant relationship between the phytoplankton composition and water mass as indexed by salinity. Our results demonstrated that abundance and composition of winter phytoplankton were related to water circulation pattern in the Arabian Gulf and the Sea of Oman.