

## Accepted Manuscript

Ecosystem response in temperature fronts in the northeastern Arabian Sea

V.V.S.S. Sarma, D.V. Desai, J.S. Patil, L. Khandeparker, S.G. Aparna, D. Shankar, Selrina D'Souza, H.B. Dalabehera, J. Mukherjee, P. Sudharani, A.C. Anil

PII: S0079-6611(17)30164-7

DOI: <https://doi.org/10.1016/j.pocean.2018.02.004>

Reference: PROOCE 1908

To appear in: *Progress in Oceanography*

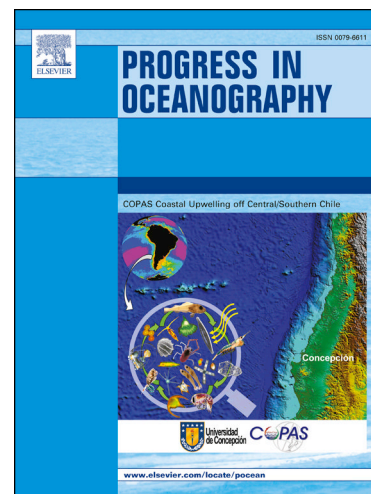
Received Date: 8 May 2017

Revised Date: 17 January 2018

Accepted Date: 6 February 2018

Please cite this article as: Sarma, V.V.S.S., Desai, D.V., Patil, J.S., Khandeparker, L., Aparna, S.G., Shankar, D., D'Souza, S., Dalabehera, H.B., Mukherjee, J., Sudharani, P., Anil, A.C., Ecosystem response in temperature fronts in the northeastern Arabian Sea, *Progress in Oceanography* (2018), doi: <https://doi.org/10.1016/j.pocean.2018.02.004>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## **Ecosystem response in temperature fronts in the northeastern Arabian Sea**

V.V.S.S. Sarma<sup>1</sup>, D. V. Desai<sup>2</sup>, J.S. Patil<sup>2</sup>, L. Khandeparker<sup>2</sup>, S.G. Aparna<sup>2</sup>, D. Shankar<sup>2</sup>, Selrina D'Souza<sup>2</sup>, H.B. Dalabehera<sup>1</sup>, J. Mukherjee<sup>1</sup>, P. Sudharani<sup>1</sup>, A.C. Anil<sup>2</sup>

<sup>1</sup>CSIR-National Institute of Oceanography, Regional Centre, 176 Lawsons Bay Colony, Visakhapatnam, India

<sup>2</sup>CSIR-National Institute of Oceanography, Dona Paula, Goa, India

Corresponding author (sarmav@nio.org)

### **Abstract**

Productivity is low in tropical waters outside the traditional upwelling regimes, making temperature fronts a potential marker of fish. To test the hypothesis that all temperature fronts harbour high concentrations of nutrients and phytoplankton biomass, several fronts were sampled during winter 2014 in the northeastern Arabian Sea (NEAS). The data suggest that all the sampled temperature fronts are active biological spots owing to injection of subsurface nutrients into the surface layer. The plankton response, however, varied, with enhanced zooplankton biomass (total bacterial counts) in the shelf (open-ocean) fronts, suggesting that classical (microbial) food webs are active. The plankton response depended on the age of the front, and, more importantly, the initial or background conditions under which a front forms. Determination of the initial conditions for a front is complicated owing to advection by the mean current and mesoscale eddies and this advection itself modulates the background conditions. An increase in integrated Chlorophyll-*a* (Chl-*a*), but not surface Chl-*a*, was observed in both shelf and open-ocean fronts, suggesting that depth-integrated Chl-*a* is likely to be a better marker of potential fishery zones (PFZs). This study suggests that the

Download English Version:

<https://daneshyari.com/en/article/8886638>

Download Persian Version:

<https://daneshyari.com/article/8886638>

[Daneshyari.com](https://daneshyari.com)