

# Monitoring of Marine Environment by ABC (Abundance-Biomass Curve) Analysis—A Case Study on Western Offshore area of Arabian Sea

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**Abstract**—Assessment of the variations in marine ecosystem can be effectively monitored using benthic fauna because pollutants from any source will ultimately end in the seabed. The benthic communities play an important role in the transfer of materials from primary production through detrital pool into higher trophic levels, including commercially exploitable fish. They not only act as a major food source for fish species but human also consume some of the large-sized bivalves and crustaceans. The abundance/biomass comparison (ABC) method was proposed by Warwick in 1986 is considered a sensitive indicator of physical and biological disturbance as well as pollution-induced disturbance over space and time. The ABC method compares the ranked distribution of abundance among species against the similar distribution of biomass among species. It indicates whether a particular area is undisturbed, moderately disturbed or highly disturbed. Case study has been made around several sampling points around Western Offshore of Arabian Seas during 2016-17, where lot of commercial activities are going on including the E&P activities of ONGC. Benthic samples are collected from 13 different stations where operational activities of ONGC are going on. Comparison has been made based on the dominance of *k*-selected species (slow growing, large, late maturing) and *r*-selected species (fast growing, small, opportunistic). Results of ABC analysis shows that benthic community around most of the stations are undisturbed and around few locations are moderately disturbed. No highly disturbed areas are found based on this study. Besides, ABC behaviour of Mumbai High reference point (MHR), indicates that operational activities of ONGC platforms is not creating any significant environmental stress.

**Keyword:** E&P: Exploration and production MHR-Mumbai High reference, 10 km away from Mumbai High platform and considered as no operational influence from Mumbai high platform.