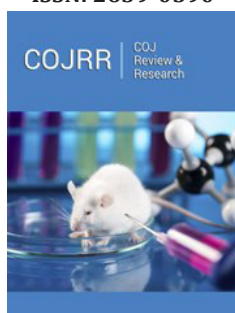


Modern Approaches on Oceanography and Petrochemical Studies to Sustainable Ecosystem- A Review

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Review Article

The present day global technological evolutions in sciences and engineering need to be answer for the global climatic changes and their impact on earth system cycles viz., atmospheres, biospheres and especially on lithospheres and hydrosphere. The exploration, production and utilization of petrochemicals and their products are most implication, changes and affect the equilibrium ecosystem condition in earth system cycles as well as maintaining sustainable development in the field of balancing natural ecological niche in surface and subsurface of the earth (Figure 1). The various parts of ocean are divided using different parameters like slope, topography, composition, salinity, temperature, pressure and habitat of living and non-living things. Due to production or input of petrochemicals into these systems, the variation in ocean ecological niche for example the temperature, pressure, light penetration and density of the materials present in the systems (Figure 2 & 3). The major environmental unsustainability will be causes in the natural ecological niche (Figure 4). The modern approaches in offshore/onshore petrochemical sciences and engineering research and development to improve and enhance the integration of recent technological usage in the field of balance/sustainable ocean and petrochemical engineering science [1,2]. The major evolution in the field of science and technology to identification of geochemical traces increases or decreases in ocean systems and their impact analyses on natural ecological niche using modern instrumentation like NRM, AAS, FE-SEM, XRD, ISP-MS etc., it is very essential to understand ocean morphology, coastal morphology, sea level rise or fall and biotic environmental balanced sustainability managements [3-5]. The modern Gravity models to determine torque expressing gravities/gravikinesis on moss sperm cells changes fertilization, thermal fluctuation, diffusivity and divergences to analyses discordance, upwelling, or overturning circulation of ocean [6]. The recent development on geochemical traces in advance studies on oil digging platform on sea shelf using low temperature or frozen water filled with vertical metal tube like column to create sea platform strong and reliable. It will be low cost and environmentally friendly. The new satellite-based technology such as TANDEM-X satellite with multichannel interferometry maps algorithm models are efficiently modeling sea surface current flow with X-band and spatial variability analysis.

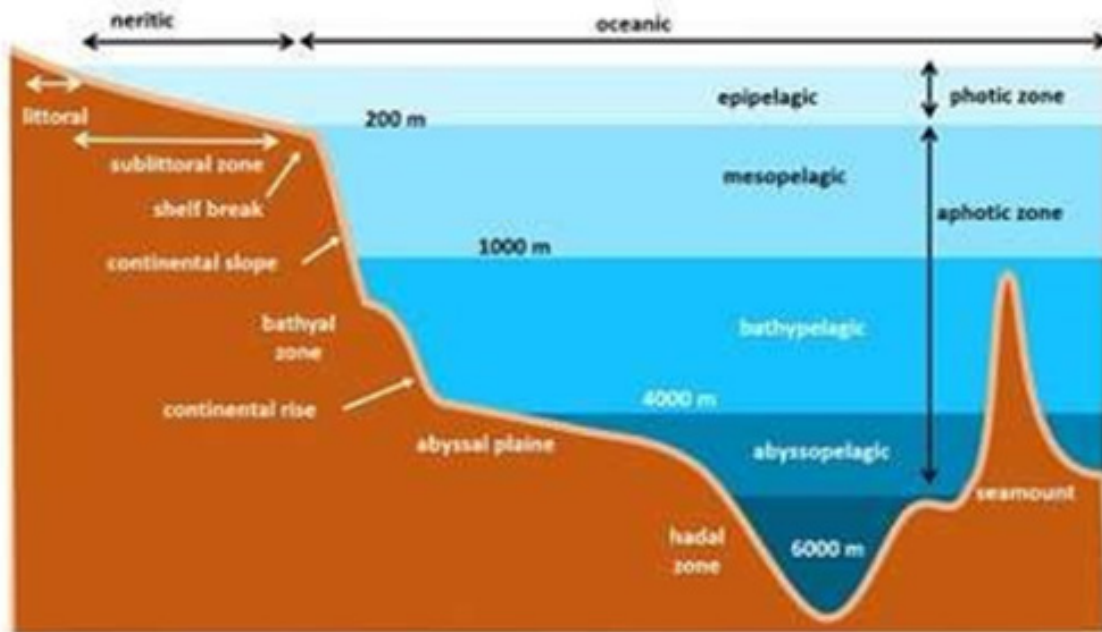


Figure 1: The surface and subsurface zonation is show in the figure.

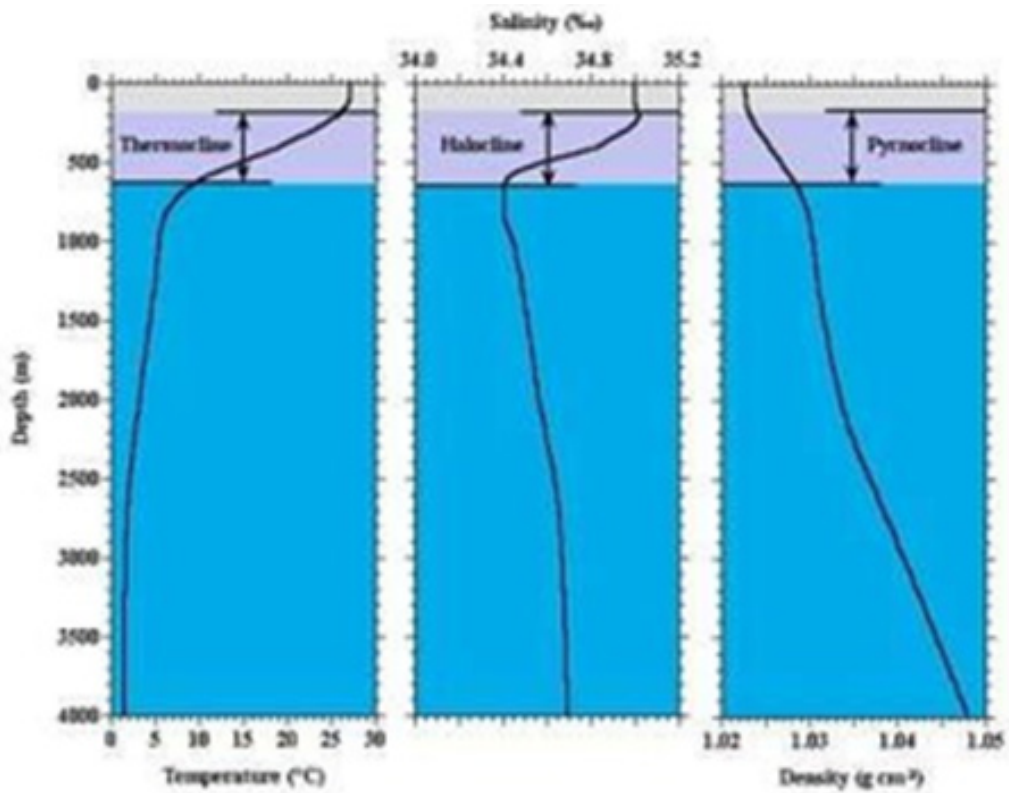


Figure 2: Temperature and density.

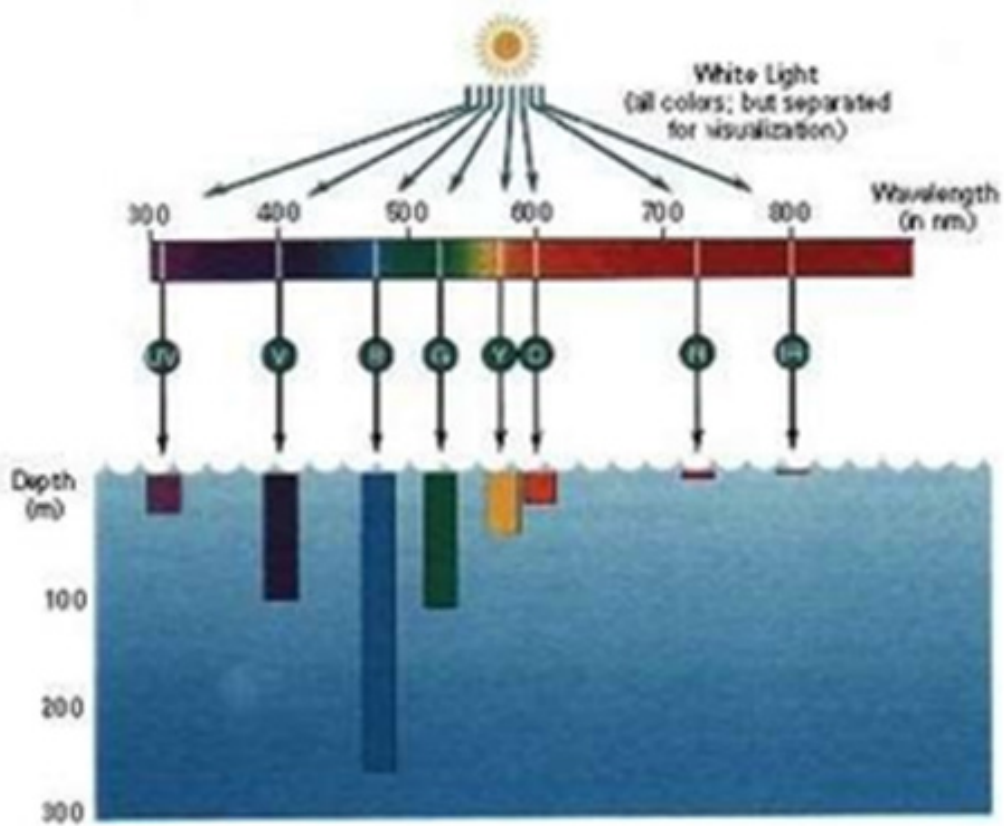


Figure 3: Light penetration and temperature.

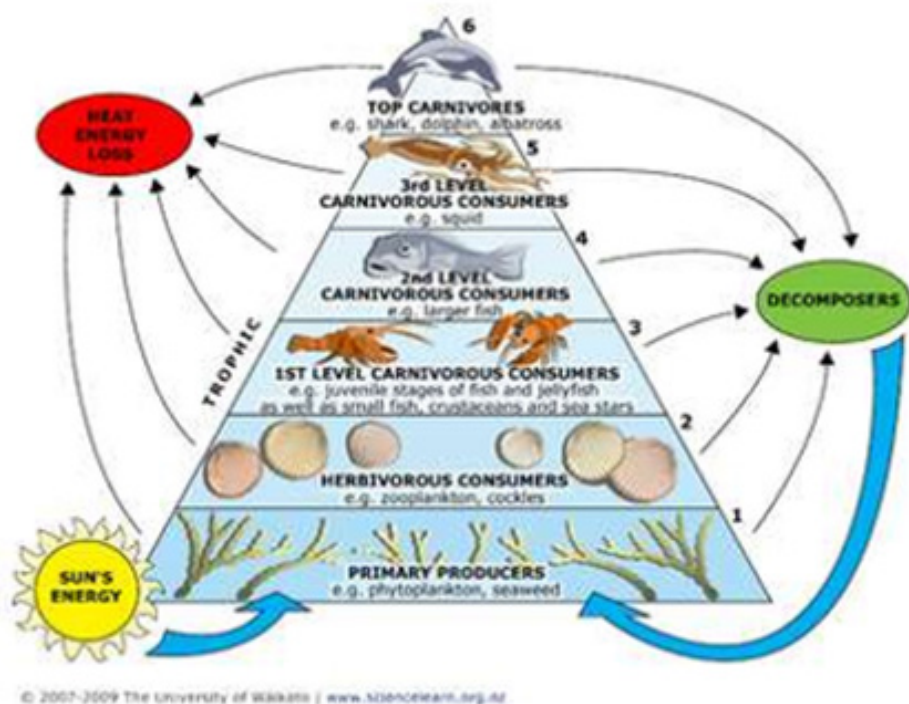


Figure 4: Natural ecological niche.

The unique research will be required to determine molecular levels of chemical concentration, blowout, waste rig oils and contaminated oil spills affected the sea environments towards lethal and sublethal level organism or microorganisms. The recent research on exceeding critical concentrations and their effects analysis using traditional biomarkers variation in genomic, reproductivity and morphological evaluations by developing SPMDs passive devices and updated protocols for interpretation of WAFS and CEWAFS data [7-12].

SARAL/ Altika mission (2021) frequency track observer or retriever on Significant Wave Height (SWH) changes and estimates are well correlated with the coastal buoy measurements and improves observation of wave height estimates close to the coast, to determine the seasonal coastal variation and its effects on sea environments. The Blue economy, influence of parasitic life and host species expansion to be protect from pollutant for establish Sustainable development needs of the present without compromising the ability of future generations to meet their own needs. Collaborative studies with the Halifax Fisheries Research Board Laboratory immediately after the Arrow spill demonstrated that hydro-carbon-utilizing bacteria capable of degrading spilled oil are ubiquitous in seawater and sediments off eastern Canada (Mulkins-Phillips and Stewart 1974). The proven success of bioremediation led to the need for operational guidelines on oil spill bioremediation strategies that could be used to support decision making by the international oil spill response community [13]. The surf-washing' was developed. Oil stranded in sediments at the high tide mark was mechanically relocated into the surf zone where wave action could stimulate the formation of OMA and thereby increase biodegradation of the oil [14]. The nanoparticles with low and high molecular weight porous sheer or sorbents are used for oil spill uptake or absorbed from ocean environments [15]. The various web series, web catalogue and observation programs or exploration research (European Marine Observation and Data Network (EMODnet), Global Temperature and Salinity Profile Program (GTSP), Optimal Spectral Decomposition (OSD), Upper Ocean Freshwater Content (FWC) or Empirical Orthogonal Function (EOF) and Data Correction or Test Systems (DCS)). The combination or correlation of these research on oceanography will harmonizing different data sources and integration of all the data to develop advance or modern controls techniques to improve the strategy to mitigate and create suitable warning systems on earth cycle equilibrium or oceanography disorders [16]. The intervention of human activity and petrochemicals demands causes adverse effect on diffusion, internal waves, turbulence, salinity, Pressure-Temperature and loss of natural ecological niche in the ocean environments, the research or publishers should pay attention to minimize these effects using integration of ideas and analytical data from different techniques such as Remote sensing, geophysics, geochemical or geological investigation. The Modern Approaches in Oceanography and Petrochemical Sciences, which contributes towards balancing sustainable natural ecological niche [17]. The

modern technological invention research methods/analysis and research literature reproducibility or reviewers and publishing qualitative and quantitative articles globally very essential in the field of petrochemical and ocean related development and management studies [18].

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