MARINE ECOSYSTEMS · CHALLENGES AND OPPORTUNITIES

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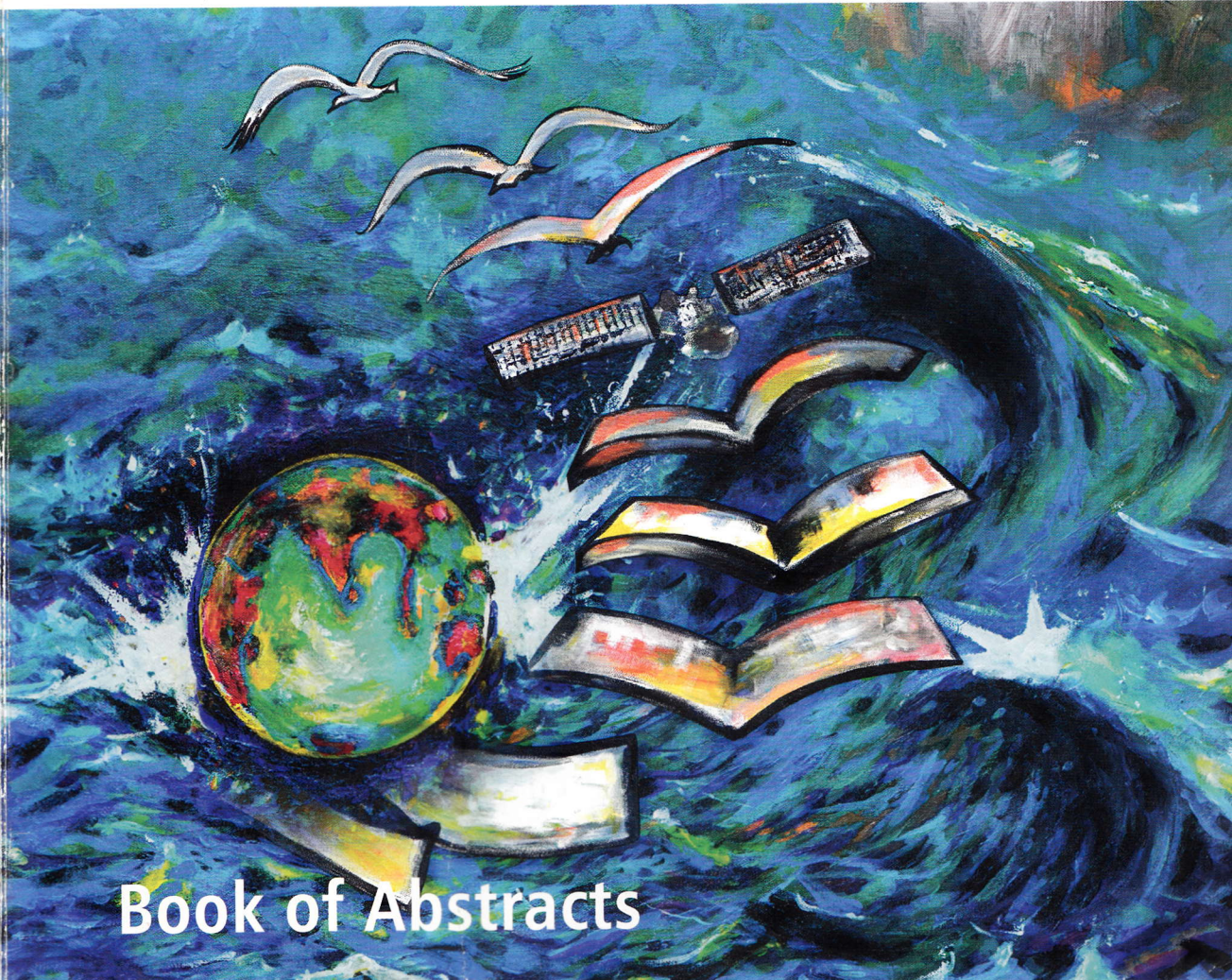
Marine Ecosystems
Challenges & Opportunities

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Book of Abstracts

Opportunistic sighting and behavioral pattern of cetaceans in the Indian EEZ and the contiguous seas

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Marine mammals of Indian EEZ and the contiguous seas have been documented by Central Marine Fisheries Research Institute, India for over a period of 10 years. 25 species of cetaceans, which include baleen whales, toothed whales, dolphins and single species of sirenian are known to occur in India. This study was based on opportunistic sightings onboard *FORV Sagar Sampada* along with the other oceanographic research cruises. Published pictures of whole animals, size of spouts, shape of dorsal fin and caudal flukes of different species were used to identify the cetaceans sighted. The study area included the coastal, continental shelf and oceanic waters of the Indian EEZ and the Sri Lankan Sea. The surveyed area extended between 5°-23°N latitude and 66°-95°E longitude with depth range of 20-5000 m.

Region	Sub region	LAT1	LAT2	LON1	LON2	Spatial resolution	Time span (monthly)	Climate variables*								
								AT(A)	SST(S)	SLP(P)	TC(C)	SH(Q)	U	V	W	
NWEEZ	NW1	16.0	20.0	70.0	73.0	1°x1°	1960-2014	√	√	√	√	√	√	√	√	
	NW2	20.1	24.0	65.0	73.0	1°x1°	1960 2014	√	√	√	√	√	√	√	√	
SWEEZ	SW1	8.0	12.0	74.0	77.0	1°x1°	1960 -2014	√	√	√	√	√	√	√	√	
	SW2	12.1	16.0	72.0	75.0	1°x1°	1960 -2014	√	√	√	√	√	√	√	√	
SEEEZ	SE1	8.0	16.0	77.0	86.0	1°x1°	1960 -2014	√	√	√	√	√	√	√	√	
	SE2	16.1	19.0	81.0	89.0	1°x1°	1960 -2014	√	√	√	√	√	√	√	√	
NEEEZ	NEEEZ	19.0	22.0	85.0	89.0	1°x1°	1960 -2014	√	√	√	√	√	√	√	√	
LAKEEZ	LAKEEZ	8.0	12.0	71.0	74.0	1°x1°	1960 -2014	√	√	√	√	√	√	√	√	
ANEEZ	ANEEZ	6.0	14.0	91.0	95.0	1°x1°	1960 -2014	√	√	√	√	√	√	√	√	
Climate parameters units data:-International Comprehensive Ocean-Atmosphere Data Set (ICOADS)								0.01°C	0.01°C	0.01 hpa	0.1 okta	0.01 g/kg	0.01 m/s	0.01 m/s	0.01 m/s	

*AT(A)-Air temperature; SST(S)-Sea Surface Temperature; SLP(P)-Sea Level Pressure; TC(C)-Total Cloudiness; SH(Q)-Specific Humidity; U-Vector wind Eastward component; V-Vector wind Northward component; W-Scalar wind; LAT-latitude; LON-longitude; NWEEZ-North West Exclusive Economic Zone; SWEEZ-South West Exclusive Economic Zone ; SEEEZ-South East Exclusive Economic Zone; NEEEZ-North East Exclusive Economic Zone; LAKEEZ-Lakshadweep Exclusive Economic Zone; ANEEZ-Andaman and Nicobar Islands Exclusive Economic Zone

Cetacean family observed during the study includes Balaenopteridae, Physeteridae, Delphinidae and Ziphiidae. During the sighting of a cetacean it has been observed that they exhibit various behavioral actions. This article is an attempt to document some of the behavioral features observed during sighting of a dolphin or a whale. These include breaching, foraging, bow riding, leaping, surfacing the water, spinning, fluking and aerial behavior. This attempted study is only a fractional part for more future studies leading to novel insight into the behavior of Cetaceans in the Indian EEZ.

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Effect of adverse factors on the density and distribution of marine macroalgae along Indian coasts

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The density and distribution of marine macroalgal resources of Indian waters are affected since recent years due to a number of factors-over exploitation, sediment deposition, discharge of effluents, changes in the environmental factors, water temperature, light intensity, tidal waves, cyclones and consequence of bottom trawling for fishes. As a result there is decrease in algal production in many areas. On the other hand there is rising demand for the phycocolloids such as agar, algin, carrageenan and others. In this context there is urgent need for conservation and better exploitation of the resources.

Regulation of exploitation, control of pollution by domestic and industrial