

The 29th G-COE Special Seminar & The 5th Lecture Series



by

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Date: September 30, 2010 10:00 – 12:00, 14:00 – 15:00

Venue: The 4th floor meeting room in annex to the Science Research Building1, Ehime University

Language: English

< 10:00 – 12:00 The 29th G-COE Special Seminar >

Land Based Sources of Marine Pollution and their Impact on Coastal Water Quality in India

India has a coastline of about 7500 km long. There are 9 coastal States and 5 Union Territories along the coast. About 20% of the country's population live along the coast and generate an estimated 10000 MLD of sewage. The coastal waters of India face a threat of pollution due to disposal of untreated sewage, industrial effluents and run off from the land brought by rivers via lagoons, backwaters and creeks to the sea. The extent of contamination of seawater from these sources varies from location to location. Such variations in discharge quantities cause large spatial and temporal variations on distribution of the pollutants in the coastal waters. A long-term monitoring program like Coastal Ocean Monitoring and Prediction System (COMAPS) being implemented since the year 1991 helps in assessing the quality of coastal waters and to find the suitability of coastal waters for fisheries and other human related uses. The results of such a long term monitoring programs also help in taking appropriate remedial measures to restore the water quality, where it has deteriorated or likely to be deteriorated.

The assessment of water quality has been carried out at selected locations along the coastline of the country. As the primary indicators of water quality criteria, the parameters chosen for assessment are: dissolved oxygen, ammonia, nitrate, phosphate, chlorophyll *a*, and population of zooplankton, pathogenic bacteria such as *E. coli* and *S. faecalis* and mercury in the sediments. Data on these parameters have been collected at shore (0-1km), nearshore (1-3 km) and offshore (5 km and beyond) at several locations along the coastline of the country from the year 1990 onwards. The results obtained have shown increasing concentrations of nitrate and pathogenic bacteria at locations where the population of coastal civic body exceeds 40,000. The populations of phyto and zooplankton have declined over the years at some locations close to the shore, but improved towards offshore to reach normal levels of populations. The concentrations of organochlorine pollutants such as HCHs and DDTs in food fishes were extremely low and below detection limits at some instances. The results have also indicated the effectiveness of pollution control measures taken at locations like Mumbai (Bombay) and also the role of tidal waters in diluting the pollutants.



< 14:00 – 15:00 The 5th Lecture Series >

Utilization of knowledge and skills acquired in Japan for developing country programs

Japan occupies a commendable position and a forerunner in Environmental Research in the World. The initiatives taken by the Marine Environmental Studies group in Ehime University in understanding the dynamics of number of man made chemicals belonging to Persistent Organic pollutants (POPs) family has greatly helped in elucidating the impact of these chemicals on the quality of air, water and soil and in turn the well being of the biosphere. The knowledge and skills acquired from such an Institution by a student from India has formed as basic impetus in developing long-term marine pollution research programs. The skills acquired in advanced methodology, instrumentation and data analysis have facilitated the formulation and implementation of pollution related programs successfully. The skills on methods of data analysis have also aided in yielding valuable outputs that are useful, especially on monitoring and conserving the long coastal waters with fragile and sensitive ecosystems such as estuaries, mangroves, lagoons, corals etc. from myriad anthropogenic pollutants in India.

< Biography >

1985 - present : Ministry of Earth Sciences, Government of India.

Adviser to the Ministry of Earth Sciences, Government of India since 2000 for matters regarding earth science related issues in India

Nature of work involves project(s) management, policy making and research and development in Indian marine environment and coastal zone. Heading the R & D Unit on Coastal Management since 1998. Implementing projects on pollution, marine eco-toxicology, ecosystem modeling and shoreline management.

1983 - 1985: CSIR Scientific Pool Officer at Madurai-Kamaraj University.
Conducted research on bioaccumulation of insecticides

1981 - 1983: Monbusho Research Fellow at the Department of Environmental Conservation, Ehime University, Japan.
Carried-out studies on accumulation of DDTs and HCHs in Antarctic fish

1981: Ph.D. in Marine Biology and Oceanography from the Centre of Advanced Study in Marine Biology, Annamalai University, India

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