1. ENVIRONMENT ANALYSIS AND CONSERVATION TEAM (ENACT) – AN INITIATIVE BY THE DEPARTMENT OF BIOTECHNOLOGY TOWARDS ENVIRONMENT MANAGEMENT

With the increasing population in India, the problem of pollution and environment management has become a serious concern to the country. Most of the land is turning infertile and toxic due to dumping of wastes, garbage and other anthropogenic activities leading to increased concentrations of toxic pollutants and rising salinity and alkalinity. Such soils have lost its potential and can't be used for agriculture which is required to address the rising food security issues. Parallelly, air, water and noise pollution has also reached alarming levels threatening the life of all living forms. Immediate measures are to be taken to bring these in control and to balance the nature, as also to maintain the resources for the future generations to cherish and meet their own needs. A systematic analysis and management of the environment maintaining the harmony in nature and paving way towards sustainable development is the need of the hour.

With this objective, Prof. Gopakumar Pillai developed an Environment Analysis and Conservation Team on 6th September, 2014 at the Department of Biotechnology to actively take up the responsibility of environment management. The team led by Prof. Gopakumar Pillai comprises of three more faculty members (Ms. Rejitha Renji, Ms. Marishka Dsouza and Mr. Akhil Nair) and 40 student members from the biotechnology dept. The team has planned various goals to be met for the current academic year and ahead. Various initiatives has been planned including campus solid waste management, biodiversity maintenance and studies, Pollution analysis, Environmental Research, cleanliness and environment awareness campaign, etc. The student members are very much excited with this initiative and are actively working towards attaining the goals. The team looks forward to a developed healthy environment in the coming future.

2. FIELD VISIT TO VASHI MANGROVE FOREST ORGANISED BY ENACT

Environment Analysis and Conservation Team (EnACT) of the Department of Biotechnology organised a field visit for T.Y.B.Sc Biotech students to the Mangrove forest, Mini sea shore and Sagar Vihar in Vashi on 12th September as a part of their curriculum and environment awareness program. A total of 53 students accompanied with three teachers and a non-teaching staff visited the mangrove forest.

Prof. Gopakumar Pillai, Incharge of EnACT explained the students about the working and significance of mangrove ecosystem and its biodiversity and emphasized on the recent problems affecting these forests and their conservation need. Students were also provided information pertaining birds and mangrove species identification.

The current status of the forest was studied and photos and details of the problems affecting these forests were documented by the students. The wetland in Vashi was observed to be highly stressed due to accumulation of mainly plastics, garbage and other solid wastes posing threat to the survival of flora and fauna of this ecosystem. Only two dominant species of mangroves were seen in these areas. The water body was polluted and dead fishes and plants were observed in the vicinity of accumulated wastes. A report of the field visit was generated by each student and submitted to the Department as a part of their curriculum.




Overall, the visit was an enthralling experience which has spread awareness among these young citizens and has stirred their minds to positively take up the responsibilities to conserve mangrove ecosystems. The visit has built a keen interest in students to work for environment management which is the need of the hour.

3. GUEST LECTURE ON ENVIRONMENTAL AUDIT ORGANISED BY DEPARTMENT OF BIOTECHNOLOGY

Department of Biotechnology & Biotechnology association organized lecture on "ENVIRONMENTAL AUDIT" on 10th December 2014 by Dr. Abba Elizabeth Joseph, Assistant Professor, Department of Environmental Science, K.J. Somaiya College of Science & Commerce, Vidyavihar. The lecture started at 2:00pm. Dr.K.M.Srinandhinidevi, in – charge, Biotechnology Association, welcomed the students and introduced the speaker to the crowd. Dr. Elizabeth gave the overview of Environmental audit and specifically about electricity audit, water audit and different methods of auditing in academic institutions, Industries and hospitals etc. She showed the videos of rainwater harvesting and insisted the students that everyone should take the responsibility wholeheartedly to save our environment. The students were very interactive throughout the session. More than 75 students attended the lecture. The session ended at 3:30pm with a vote of thanks and concluding statement by Mr.Gopakumar Pillai, Assistant Professor and Incharge (EnACT), Dept. of Biotechnology.

4. ‘SWACHH BHARAT ABHIYAN' ORGANIZED BY BIOTECHNOLOGY ASSOCIATION AND ENVIRONMENT ANALYSIS AND CONSERVATION TEAM (ENACT), DEPARTMENT OF BIOTECHNOLOGY

With the ongoing activity of ‘Swachh Bharat Abhiyan', the Department of Biotechnology on behalf of Biotechnology Association and Environment Analysis and Conservation Team (EnACT) organized a cleanliness drive and a dengue awareness programme on 11th December, 2014. The increasing cases of dengue and environmental pollution make it a need of the hour to highlight the necessity for cleanliness in the nation. Under the guidance of Dr.K.M.Srinandhinidevi, In charge, Biotechnology Association and Mr. Gopakumar Pillai, In charge, Environmental Analysis and Conservation Team (EnACT) and Mr. Akhil Nair, Assistant Professor, Dept. of Biotechnology, more than seventy students actively took part in the drive and cleaned the area between Panvel Railway Station and State Transport Bus Depot (Old Panvel). The students explained the necessity for cleanliness, sanitation and hygiene for a disease free society with emphasis on measures to prevent dengue and malarial attacks to the public. People from different age groups also contributed to the campaign by actively working along with the students, which highlights the accomplishment of our objective.


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5. WATER QUALITY ASSESSMENT OF KALUNDRE RIVER (JAN-MAR, 2015) BY ENACT MEMBERS

As a responsibility towards river conservation, the Environment Analysis and Conservation team (EnACT) took an initiative to conserve Kalundri river of Panvel flowing adjacent to the campus. The team has planned for a water quality assessment program on a quarterly basis, every year. Such a step will help analyse the pollution levels much better and thereby will help in deciding suitable measures towards the river conservation.

Student members under the guidance of Prof. Gopakumar Pillai, Incharge (EnACT) carried out the water quality assessment of Kalundre River, Panvel for the period of Jan-Mar, 2015. The major parameters for quality analysis were studied and the following results were obtained.

Sr. No.	Parameters Analysed	Result
1	pH	6.5
2	Temperature	$26^{o}C$
3	Conductivity	0.75 mS
4	Chlorinity	142 mg/L
5	Salinity	259.31 mg/L
6	Chemical Oxygen Demand (COD)	80 mg/L
7	Biological oxygen demand (BOD)	3 mg/L
8	MPN index	>1600/100 ml

The quality of water was found to be poor and requires some treatment to be provided.

6. ENVIRONMENTAL RESEARCH – DEPARTMENT OF BIOTECHNOLOGY

The Department of Biotechnology has been involved in active research in various fields of biological and environmental sciences. Following projects related to environmental sciences were carried out in the department during the academic year 2014-15.

Sr. No.	Student	Project Guide	Project Title
1.	Elora Das, Vaibhav Yewale	Dr. K. M. Srinandinidevi	Screening of feather degrading bacteria from soil.
2.	Sanit Mhatre and Shardool Nair	Mr. Gopakumar Pillai	Biodegradation studies of plastics using soil microorganisms.
3.	Anjali Rawat, Kaustubh Patil, Anju Nair, Divya Pillai	Mr. Gopakumar Pillai	Assessment of water quality of kalundre river, Panvel.
4.	Mrunmayi Bhouraskar	Ms. Uma Sadashivam	Screening of oil degrading bacteria
5.	Suyog Chavan	Ms. Marishka D'souza	Isolation of oil degrading bacteria