Coral reefs are considered the rain forest of the ocean. A network of commercial and medicinal purposes are derived from the ocean. The reefs play an important role in providing the complete web of life from producers to primary consumers to the quaternary consumers. The marine biodiversity is dependent on the reef ecosystem in various ways in which the diverse and abundant fauna of corals are surviving.

Looking into current aspects it was felt necessary to study the diversity of corals of family Faviidae and assess the ecology regarding the fauna associated. Narara and Poshitra coastal reefs were selected for the same.

There are total 24 genera of Family Faviidae of which 13 genera are present in the Indian subcontinent. Gujarat, Southern Gulf of Kachchh has 14 species of family Faviidae till date. During the current study 8 species were encountered at Narara and Poshitra coastal reefs. The density of the Faviids were comparatively moderate in terms of the geographic area and the reef locations. Poshitra reef had more density of faviids than Narara reef. Also, the frequency of sighting was higher in Poshitra coastal reef. The disturbances are likely to be higher at Narara due to vessel movements to and from crude based industries that might release waste in the gulf. Poshitra is towards the inner side of GoK and away from major vessel movements and major industries. The population status of the Faviids was found to be low on the Narara coastal reef while the Poshitra reef was found to stand at the better condition with reference of Faviidae and other Scleractinian diversity apart from anthropogenic pressures.

However, the diversity of macrobenthic associates was near to the normal distributional curve on both the study sites. The major phylum and subphylum ie. Viz. Porifera, Cnidaria, Annelida, Platyhelminthes, Crustacea, Mollusca, Echinodermata and Pisces taken into consideration for the ecological studies gave interesting findings in the species presence and population status. Both the reefs had almost same species of Porifera but the populations differed with reference to respective reef. The annelid and

crustacean diversity as well as population were higher at Narara reef. Many past studies have reported that the diversity in the Narara coastal reef is declining, however in present study good diversity of poriferans, annelids and crustaceans were encountered at Narara. The Cnidarian diversity apart from Faviids at both the sites were comparatively high. The Actiniarians were diverse at Poshitra and population of *H. malu* was higher than the Narara coastal reef. Association of nudibranchs were higher at Poshitra than Narara coastal reef. The encounter of nudibranchs was mainly during the evening tides.

The physicochemical parameter analysed using the correlation plots with SST as independent factor gave positive correlation with DO, pH, salinity, nitrate, nitrite at Narara whereas, it showed negative correlation with phosphate. For Poshitra coastal reef positive correlation were obtained with pH, salinity, nitrate and phosphate whereas, negative with DO and nitrite. The difference in the correlations of physcochmical parameters may be attributed to high mixing of Gulf water twice in a day.

The substrate characteristic of Narara costal reef dominated with sand and live corals while at Poshitra live coral dominated with mud patches. The coral bleaching was negligible at Poshitra and not recorded at Narara whereas algal cover was more at Narara. The overall study indicates that both the reefs have their own characteristic substratum as well as the microbenthic fauna they support. Additionally, these reefs are adapted to extreme environmental conditions as the fluctuation in tidal water is high, turbidity/ sedimentation in the area is also high, the ambient temperature also show extreme fluctuations and the gulf currents are also strong. Under such circumstances the reefs support good diversity of faviids and equally good diversity of fauna which is not likely to face threat due to climate change but if the industries around the gulf are not taking care and any crude is added to the gulf water in long term the reef may face a threat of destruction.

The authorities need to have stringent control of the policies to check the industrial effluent flow in the gulf. This study is expected to help policy makers and private agencies to build their strategies in conservation of

species and transplantation of that are declining species in the coastal reefs. Marine tourism fetches enormous economy and cannot be halted due to any such physical and anthropogenic pressures. Awareness programs should be organised frequently not only for locals and tourists but also for industries. Awareness amongst the fishermen community and the local schools is strongly needed to stop the ill practices of exploiting the reefs. This will help in capacity building in the villages that are adjoining the coastal reefs of Southern Gulf of Kachchh.