Preface

The present study focused on the impact of climate change on coral reefs. Climate is the weather averaged over a long period of time. Any alteration in climatic condition directly affects the biotic and abiotic components of the earth; such altered climate is termed as Climate Change. Earth has undergone periodic climate shifts in the past, including five major ice ages, hence climate change is a very common phenomenon throughout Earth's history. But the accelerated change in climate is the most pressing issue which is the consequence of the Global warming. Such warming of earth is caused by the Greenhouse gases that trap heat and light from the sun resulting into elevated temperature.

Climate driven changes have been identified in various ecosystems on earth and they result in either species adaptation or eradication. In order to get insight into such changes, it is necessary to assess their magnitude and rate which will lead to know the gravity of the threats on an ecosystem if any. Global climate change imposes synergistic chronic and acute stresses on coral reefs. One recent estimate valued that 15 percent of coral reef ecosystems have been lost due to warming of the ocean surface and climate change will further contribute to coral reef degradation in the decade's ahead.

Hence, the present study emphasizes to explore the impact of climate change on the coral reef in the form of Coral bleaching status and calcium carbonate deposition rate of the coral reef. The corals convert the free carbonate in to fixed form as well as they behave as an archive to envision the past climate by recording the climatic conditions persisting during their growth. So, this study will fulfil the information gap regarding the carbon storage potential of coral reefs. The Gulf of Kachchh was considered as an area of low to moderate coral bleaching

region hence this study was carried out to bring forth the current coral health status in terms of coral bleaching.

An understanding of the current status of coral reefs is indispensable for their conservation. I hope this work will be useful to researchers, policy makers and stake holders for the management and conservation of the underwater wonderlands of our state- *the coral reefs*.