Introduction:

Water is a most important factor of life. Good quality water is essential for living organisms. The quality of water can be known studying the physical and chemical biological characteristics of water. A change in the water quality affects the biotic community of the aquatic ecosystem which ultimately reduces primary productivity. Rapid population growth, urbanization and industrialization have led to a greater demand of water from an increasingly smaller supply of water resources in the country (Tyagi et al. 2002). For last few years environment is highly polluted by many pollutants that affect our fresh water bodies. If water is badly polluted then it has some clear sign that something is wrong. Because of pollution plankton and water quality is affected. Water is the most common yet the most precious resource on earth without there would be no life on earth (Sunilkumar and Ravindranath, 1998). Water quality is a paramount factor in ecosystem productivity. Tempory pond are found throughout the world. Though there are considerable regional difference in their type and method of formation. Many physical, Chemical and biological properties are quite similar. The world wide distribution of water body type leads to a large variety of temporary pond type due to climate and geological differences (Solanki et al. 2007) For last few years environment is highly polluted by many pollutants that affect our fresh water bodies. Plankton form an intermediate step in grazing food chain in aquatic ecosystem and they play an important role in aquatic biota so one has to know its seasonal variations. The most important physico-chemical parameters such as DO, Temperature, pH, Turbidity, EC, Alkalinity, TDS, etc. are directly associated with the water quality and the distribution and abundance of biological organisms. The maximum production is obtained when physic-chemical factors are at optimum level (Sinha and Srivastav, 1991). Plankton community is one of them. It is a heterogeneous group (phytoplankton and zooplankton) of tiny organisms adapted to suspension in a sea and freshwater (Battish, 1992). Phytoplankton is a predominant type of a plant found in most water bodies. Analysis of fresh water bodies determines the extent of pollution and studies of plankton tell us its qualitative and quantitative variations, which affect food chain of aquatic ecosystem. Analysis of fresh water bodies determines the extent of pollution and studies of plankton tell us its qualitative and quantitative variations, which affect food chain of aquatic ecosystem.
Study area:

Visnagar taluka is popularly known as ‘Shikshan Nagari’ and also known as Copper city is located between **Latitude: 23° 41’ 60 N, Longitude: 72° 32’ 60 E.** There are many fresh water bodies are situated at and around Visnagar taluka, Dist. Mehsana, Gujarat, India. These water bodies has dense growth of algae and planktons in its. The area have several water bodies out of five water bodies are selected. deliya lake, pindhariya lake, malap lake mindhal lake and gunja lake under biotic stress”. Deliya lake is natural fresh water body having 19 hector area & circular in shape. It is located between latitude23° 41’ 60”N longitude72° 32’ 60” E. it is oldest lake of visnagar. It is also known as hanuman temple talav. Constructed before 10’th century. Another historical lake is pindhariya lake. Pindhariya lake lake is natural fresh water body having 8 hector area. is also situated near Visnagar Malap lake is natural fresh water body having 3.5 hector area & circular in shape. it is oldest lake of visnagar. It is situated on kada-road farmer is use of this lake water for in agriculture purpose Mindhal lake is also present between visnagar mehasna road is natural fresh water body having 4.6 hector area circular in shape. Gunja lake is also present in gunja village it is natural fresh water body having 11.86hector area circular in shape.

1. Deliya lake (mostly used for domestic purpose)
2. Malap lake (mostly used by cattle)
3. Mindhal lake (mostly used a sewer purpose)
4. Gunjha lake (mostly used for domestic and fishing purpose)
5. Pindhariya lake (mostly used for domestic purpose)
Location of map of the research area

Satellite map of the study area