SUMMARY AND CONCLUSIONS

Conservation is the thrust area of ecological science. Conservation is having number of facets. Conservation may be of species, of habitat or of biodiversity. Before implementing any conservation plan one has to have sufficient **data** about present situation. Therefore there is essentiality of data collection i.e. **monitoring.** It may be physical or/and biological. Monitoring includes continuous visits to different stations of ecosystems and experimentation. Both these activities help to identify the threats to the particular ecosystem. Threats may be visible or hidden but the coupling of observations and experimentation is able to identify it.

The present study aims at determination of ecological status of waterbodies of Jotiba. Therefore monitoring was undertaken from October 2006 to October 2007. It was monthly for physico- chemical parameters and seasonal for biological parameters. The data is analysed, some of the indices are calculated and based on this, an attempt has been made to draw some conclusions.

The problem of pollution is discussed in the chapter introduction. All the methods are given in the part material and methods. Under the heading results and discussion four different aspects are presented viz. ecological survey, physico-chemical assessment, biomonitoring and impact assessment.

Under the heading ecological survey site wise description of all water bodies is given also the observation on ritual activity calendar. Under the heading physico-chemical assessment the results on physico-chemical parameters are presented and discussed in the light of available relevant literature. The part biomonitoring includes standard plate count (SPC) of bacteria and occurrence of phytoplankton seasonally at different stations of water bodies of Jotiba. Based on the above observations and some

additional observations before, during and after yatra the impact of yatra- the ritual activity is discussed.

General conclusions:-

1. Local inhabitants have very close relationships with all waterbodies.

2. Cloth washing, bathing, mixing of sewage and waste from cattle houses mixing of surface runoff from agriculture field, activities of devotees are the major visible threats.

3. Temperature, pH, electrical conductivity and total solids show considerable variation according to ritual activity than seasonal effects.

4. Level of hardness and alkalinity is also ritual activity dependent.

5. Water of these resources become anoxic at some sites and it is alarming from living component point of view.

6. BOD indicates presence of heterotrophs in very large number.

7. Oxidizable substances are also considerable in water.

8. Concentration of phosphorus, nitrate minerals as well as oil and grease is alarming in almost all water bodies.

9. Presence of pollution tolerant phytoplankton species indicate heavy organic pollution.

10. Total 85 phytoplankton species belonging to various groups are recorded.

11. Water bodies are biologically polluted as Standard Plate Count is higher at all stations. Presence of coliforms in high number clearly indicate the faecal pollution.

12. Based on the similarity of occurrence of phytoplankton, it can be stated that all the water bodies are polluted in which Kapurbao rank first and Gaimukh rank last.

Evaluation of pollution intensity index.-

It is rather significant if there is any gradation among the different water bodies indicating pollution intensity. By coupling the data on physico-chemical environment and biological parameters, the pollution intensity indices are evaluated. Among all water bodies Kapurbao is highly polluted and Gaimukh is less polluted. Pollution of Yamai, Kapurbao and Chavantali water bodies is mainly caused by activities of inhabitants and devotees while pollution of Gaimukh is caused by upstream activities of Kasari river from which water is uplifted to restore during summer in Gaimukh. Water of Gaimukh is comparatively very clean during remaining season.