Chapter - VII
SUMMARY AND CONCLUSION

For the present study the Kolsur Dam, Kolsur Tal-Omerga Dist-Osmanabad (Maharashtra) was selected.

During the present study various Physico-chemical, Biological factors have been studied for two years from the period Feb-2009 to Jan – 2011. The Physico chemical parameters studied includes Air temperature, water temperature, Transparency, Turbidity, pH, Dissolved oxygen, Free carbon dioxide, Total hardness and Total Alkalinity. The biological parameters studied includes Phytoplanktons, Zooplanktons, Aquatic macrophytes, Arthropods, Molluscas, Fishes and Piscivorous birds.

The Air temperature was always higher than the water temperature during study period. The temperature was higher in summer and rainy season as compound to winter season. A rise in temperature of water leads to the spreading up of the chemical reactions which leads to reduction in solubility of gases in water like O₂ % CO₂.

During the study period the transparency were low indicating high tropic status of Dam. The transparency values were lower in rainy season, due to sewage contamination from rain water from surrounding area. The turbidity was higher during rainy season due to the addition of silt and sewage in the dam water from surrounding areas and earthen bund.

The pH of the dam water was alkaline throughout the study period, the pH ranged from 7.2 to 8.5. the present pH range showed that the water of this dam was suitable for aquatic life, irrigation and domestic purposes.
The dissolved oxygen was higher during winter season and lower during summer season due to reduction in solubility of gases. Because due to increase in temperature the oxygen carrying capacity of water decreases and the other cause may be the increased concentration of Aquatic organisms due to decreased water level of dam water. The free carbon dioxide was higher in summer and lower during winter season.

The total Hardness was ranged from 36 to 106 mg / lit. during present study period. The hardness was minimum during summer and maximum during winter season and it seemed that the water of the present dam was suitable for the growth of organisms. Total alkalinity was minimum during rainy season and maximum during winter season. The present water of dam seems to be productive. Thus present water of dam seems to be moderately polluted due to domestic sewage and agricultural run off which indirectly suggest beginning of eutrophication.

The high diversity of phytoplanktons observed in the Kolsur dam. The Phytoplankton. Diversity was higher during summer and winter season and minimum during the rainy season.

About 12 species of Zooplanktons were observed in dam. This Kolsur dam was dominated by Rotifers, followed by Cladocerans and Copepods. The population of zooplanktons was maximum during summer season. The group Rotifer a represented by 8 species. Higher temperature, less nutrients and low Oxygen contents would have favored the growth of Rotifers. The occurrence of rotifer species as Branchious and Lecane were indicator of pollution. The Cladocerans represented by 2. Species . The peak counts of Cladocera were observed during summer. Copepods were represented by two species. The maximum count of copepods during summer
may be due to the abundance of blue green algae. The decreased copepod population in rainy season May due to predation by fishes.

Aquatic weeds were also observed in dam, 13 species of aquatic weeds were identified in the dam during study period. The aquatic microflora might be responsible for the luxuriant growth of plankton in the lake by maintain the ecological balance. The Aquatic weeds growing in the lake also constitute in the principle source of food in the food chains of fishes and provides cheap simple and efficient way of treating waste water. Certain emergent species were known to occupy level and undesirable conditions yet offering habitat for innumerate residents and migratory aquatic birds and Ichtyofouna.

Certain arthropods species also observed in the dam. 07 species of arthropods identified during present study. Certain molluscan species observed in dam about 4 molluscan species identified.

During present study 13 species of fishes identified. Belonging to 5 orders and 6 families. This dam was dominated by cypriniformes. The species of family cyprinidae, channidae were common, while Notopteridae, Leuciscinae, siluridae, Bagridae, Gobiidae, were uncommon.

During present study 09 species of piscivorous birds were observed. Some of them are resident as vanelius indicus, Halcyon smyrnensis, Porphpio porpyrio. Some are migratory, resident. They all belong to different feeding habitat.