CHAPTER-5

CONCLUSION

Water is essential element of life. Everyone knows that, if we do not use them judiciously with proper care the problem of water scarcity is going to be serious.

The River Narmada along with its tributaries is considered the lifeline of the State of Madhya Pradesh India. In the recent times the ecology of River Narmada is seriously affected by the domestic sewage discharge, effluents from different industries located near the banks and by dam formation. Industrial Effluents entering the water bodies is one of major sources of environmental toxicity. It not only affects the quality of drinking water but also has deleterious impact on the soil microflora and aquatic ecosystems. Industries keep on releasing effluents, which is quite toxic whether its sugar mill or fertilizer industries, or chemical treatment given to the river also cause problems for the survival of the Narmada river fauna and flora.

India is a developing country where large scale industrial units form a major part and effluent treatments are not taken care of. The costs of water treatment add to woes of the ailing smaller units as the values pH, TSS, TDS, BOD and COD are above the permissible limits, these effluents have deleterious effects on the water. The results indicate that the effluents make the water unsuitable for drinking purpose. The effluents from the Beverages industry also show a similar trend. The high levels of TDS and TSS are of major cause of concern due to the increased incidences of cancer.
The physico-chemical and biological studies with seasonal and monthly changes under different vibrating conditions provide enough understanding to manage any water body for multipurpose use. The catchments of river have measurable impacts in the submergence area its activity are directly and indirectly affect the quality of water. The use of biochemical approach has been advocated to provide an early warning of potentially damaging changes in stressed organism. The health of any organism is influenced by the physiological activities taking place in the body. Toxicant affects biological reactions and Thus any change in the physico chemical parameters will affect the efficiency of the fish, in turn reducing the consumption value.

The changes observed in the physical properties of water, where effluent are discharged notably increased TDS, Suspended solids, and dissolved oxygen in Stations II & III indicate inefficient effluent treatment in the distilleries. Common effluent treatment is subject to certain limitations, which means that industrial effluents have to be pre-treated to prevent interference in the clarifying processes. As these rivers fulfill 80% of domestic water supply demand of the local community, all specified quality criteria must be met especially before the discharge. It is recommended that apart from continuous collection of effluents for monitoring purposes, automated measuring and monitoring equipment be installed to check discharge parameters against stipulated standards for drinking water, aquatic life and other uses.

It was concluded that the water quality of Narmada river catchment areas are under stress of severe pollution due to the discharge of industrial effluents and waste water from various sources into the river. The water is not suitable for
drinking purpose. In order to save these catchment areas from further deterioration, effective pollution control measures must be taken in the near future.

The response of Rotifera to effluent pollution varied greatly, sensitive species normally disappear as the water becomes polluted while tolerant ones survive the pollution stress and readily recovers downstream of the point of discharge. Their disappearance in the effluent station of this study might have link with factors other than organic pollution.

From the present study it was concluded that there was a continuous declining in the number of species due to various anthropogenic activities. When the previous literature was cited and compared with the present study, there was declination recorded in the species number. The various preventive measures should be done in order to conserve the plankton biodiversity. As the planktons serve as an important link in the food chain and they are the main source of food of other organisms, thus efforts should be done for their biodiversity conservation.

Industrial distillery effluents are affecting the Ichthyofauna either directly or indirectly. Most of the industries discharge their waste without proper treatment which cause change in physical, chemical and biological characteristic of water. The release of untreated industrial effluents into aquatic system seriously affects aquatic biota and their production. The deterioration of water quality day by day is due to the discharge of untreated effluents, which demand urgent measures to assess pollutions.

The results indicate that reduction in the overall abundance of fish fauna is a clear indication of the effect of habitat destruction. Simultaneously, it was also revealed that the river has not recovered. There is definitely some kind of
disturbances in the river which is causing reduction in the abundance of fish fauna. An urgent need exists for studying the life history traits and demography of the most important threatened fishes, as lack of information on these aspects have significantly affected conservation efforts.

On the basis of Shannon-Weaver diversity index (H') it was found that river Narmada is moderately polluted even at Station-I where no effluent was mixed in the river, and Station-II was heavily polluted due to mixing of factory effluent and at downstream the pollution level was again reduced.

**SUGGESTION & RECOMMENDATIONS**

Water resources are essential to the existence and development of global community, but its availability is finite. The available resources of water are being destroyed faster than those can be protected because of ignorance, population explosion and competing demand for limited quality of water.

Distillery effluents are major point in relation to water pollution and primarily are engaged in the production of alcoholic beverages through fermentation process. Effluent form distilleries contain a large amount of dissolved organic matter which is readily decomposed by the biological action, consequently, their discharge into riverine system, causes as severe damage to the aquatic life and also increases pollution load, which in turn its effect the human life also.

In the recent times the ecology of river Narmada has been seriously affected by the discharge of domestic sewage, industrial effluents from factories and number of other agencies. The construction of dam is going on and a lot of people of the Narmada valley have been displaced due to submergence of land. They are being rehabilitating in or near the towns and villages situated on the banks of the
river. The new settlements along with the older ones will generate comparatively more domestic sewage, which in turn will be, as usual, drained in the river and will pollute river badly.

Here are some important suggestions to minimize and control the pollution in river Narmada.

1. The practice of direct mixing of sewage and waste water in the river should be stopped immediately.
2. Some factories discharge their effluents into the river. It is advised that the industrial effluents must not be mixed directly into the river.
3. Distillery effluent management is also necessary for the conservation of river Narmada.
4. Creation of awareness in common man, against the pollution is very important.
5. Effective participation of the public in the river environment conservation and management programmed should be promoted.
6. Visitors coming to the Narmada river should be educated in order to keep the water body surrounding clean.
7. Present status of the pollution and future consequence cannot be properly grasped due to lack of environmental monitoring. So in order to maintain the water quality of the Narmada river there is a grave need to monitor and assess the environmental changes regularly and continuously.