ABSTRACT

Increasing anthropogenic impacts on water resources has led increased concern about the health of water bodies. Assessment of health with respect to the ecological quality of lakes and streams is an important aspect to determine the effects of the different stress, their level and how these stresses accumulate. Healthy water bodies exhibit ecological integrity, representing a natural or undisturbed state. Ecological integrity is a combination of three components: chemical integrity, physical integrity, and biological integrity. When one or more of these components is degraded, the health of the water body will be affected and, in most cases, the aquatic life living there will reflect the degradation. The identification of water quality degradation requires appropriate monitoring tools. Such tools help us detect and characterize the cause and source of chemical, physical and biological impairment. The ecological health of a lake can be expressed in terms of water quality, Trophic State and Biodiversity Riparian Vegetation and macro invertebrate popularly in it.

Renuka lake is an important religious lake of Himachal Pradesh. An international fair is organised at Renuka lake annually in which thousands of devotees visit the lake for holy bath and worship in the temples situated at the site. The present work deals with assessment of the ecological health status of Renuka lake, Himachal Pradesh, India through various parameters of water quality. Major threats to its ecosystem are from siltation, runoff, water pollution and infestation of weeds. Hence evaluating the current health status of the lake will help the regulatory authorities to conserve and restore the lake to its natural state.

Ecological Health status of Renuka lake was analyzed based on Water Quality Index (WQI) i.e. 53.39, Simpson Diversity Index (SDI) i.e. 0.9131, Shannon-Weiner index i.e. 2.476. WQI shows that water quality was medium which is not suitable for drinking purpose but can be used for bathing purpose. Riparian vegetation analysis was done and index value for both Simpson and Shannon-Weiner Index represented very good diversity around lake.

On comparing the results of current with previous work it is clear that Renuka lake is deteriorating and the adverse factors needs to be dealt with various management strategies which will help to improve the ecological health of Renuka Lake.