SUMMARY

Sukhna Lake is one such ecosystem, created in 1958 by damming the Sukhna Choe, a seasonal stream coming down from the Shivalik Hills. The Sukhna Lake was studied to look at the overall health of this ecosystem. The different aspects of lake including physico-chemical parameters, biotic components (phytoplanktons, zooplanktons, aquatic weeds, fish diversity), morphometric analysis of seven fish species length-weight relationship of eleven fishes and time scale changes have been studied in order to have better idea of aquatic health of lake. All the physico-chemical parameters were found to be well within the range as per USEPA, 1986 for healthy fish production, except carbon-dioxide, phosphates and silicates which were found to high. A total of 19 fish species, 29 species of phytoplanktons, 26 species of zooplanktons, 8 aquatic weeds have been identified. The time scale changes in physico-chemical parameters, fish diversity and other biotic components including phytoplanktons, zooplanktons and aquatic weeds revealed decrease in overall biodiversity of the lake. In morphometric analysis, in all the species most of the morphometric characters have been found to be genetically controlled, thereby meaning that the species are localized in this environment. The study of length weight relationship revealed value of correlation (r) between total length and total weight to be significant and found to be in the range between 0.657-0.986 at p<0.01 level. The studies revealed that overall aquatic health of Sukhna Lake is good.