

**IMPROVED PREDICTION OF LIFE EXPECTANCY FOR A HIMALYAN LAKE:
NAINITAL LAKE, UP, INDIA**

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ABSTRACT:

An attempt has been made to predict the life of Lake Nainital, a natural lake located in the Kumaon Himalaya with early large human settlement around it. Sediment accumulation rates estimated by dating the lake sediment cores employing ^{210}Pb and ^{137}Cs dating techniques have been used for the purpose. The sediment accumulation rates estimated by radioisotope techniques are comparable to the rates obtained by the sediment balance method using the suspended sediment data. The estimated useful life of the lake is about 2,200 years, which is much higher than the results obtained by earlier investigators who used short-term bathymetric data. In the present study, long term (46 years) annual lake sounding data have also been analyzed. Large bi-directional variations in the annual bathymetry imply that major errors are associated with the lake sounding data that led to the under-estimation of the life span of Lake Nainital by earlier investigators.