

USING SEVERAL INDICES IN WATER QUALITY ASSESSMENT OF HIGHER MOUNTAIN STREAMS OF NEPAL

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Water quality assessment in higher mountain streams of Nepal was carried out at 27 sites from 23 streams. The altitudes of the regions ranged from 2,530m to 3,802masl, thereby covering from the western Inner Himalayan to the eastern Fore Himalayan zones of the Everest region of Nepal. Altogether 12 kinds of index methods were applied in assessing the water quality of these regions: Trent Biotic Index, Extended Trent Biotic Index, Belgian Biotic Index (with and without the inclusion of single findings), Indices Biotiques (after Verneaux and Tuffery 1968, and Tuffery and Davaine 1970), Indice biologique global normalisé, Biological Monitoring Working Party Score (after the Anglian Water Authority 1986, and Coring and Küchenhoff 1994 transformations), BMWP/Average Score Per Taxon (after the Coring and Küchenhoff 1994 transformation), Lincoln Quality Index, and Hilsenhoff's Family-based Biotic Index Method.

A rapid field estimation of water quality was performed using saprobic methods and the results obtained were compared with the different indices. The French Indices and the related methods are considered unsuitable for Nepal at present. The BMWP and BMWP/ASPT methods seemed promising when used after the inclusion of local taxa with local adaptations and modifications. The Trent Biotic Index proved relatively the most suitable method for Nepal when applied to slightly or moderately polluted streams showing a correlation coefficient of (r^2) = 0.42. Absence of highly sensitive local taxa from the score list and underscoring or overscoring of the intolerant or tolerant families of macroinvertebrates are regarded as the

chief limitations of such indices when used in a country other than the country of their origin.