D-22 The water chemistry experienced by the endemic fish of Nilwala basin

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The development of culture methods for endemic fish with ornamental value is important to reduce over-exploitation of natural stocks. Most endemic fish are habitat specialists, thus may have narrow tolerance limits for water quality parameters. Therefore, an investigation was made to find out the chemical water quality naturally experienced by them and any effect of water quality on their distribution. Fish density, species composition and major chemical parameters of 12 sites selected along the mainstream and branches were determined.

Sites were selected considering altitude, and depending on flow rate and substratum of these sites, macro-habitat types were identified. The chemical parameters measured were pH, alkalinity, hardness, D.O., B.O.D., unionized ammonia, nitrite and nitrate.

The distribution of endemic fish in the river was more related to the macro-habitat type than the altitude. The macro-habitat types varied within and among altitude ranges. The endemic fish diversity was highest in shallow slow-flowing water, probably because most endemic fish are adapted for slow-flowing conditions. The down stream sand and mud habitat was least preferred by them. Although the species diversity was low in other habitats, these few species were contributing considerably to the fish population. Chemical water parameters did not vary much with altitude or among macro-habitats. Therefore, no relationship between fish distribution and water quality could be drawn. Ammonia and nitrate levels were comparatively high in downstream. However, almost all water quality parameters were within the acceptable limits set for fish. It seems that physical environment is much influential on distribution of endemic fish than chemical environment.

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