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Comparison of the Water Quality between the Surface Microlayer and Subsurface Water in Typical Water Bodies in Sichuan

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ABSTRACT

Investigation and assessment of water quality status in the surface microlayer (SML) and subsurface water (SSW) in several kinds of typical water bodies in Sichuan were carried out from May to June 2010.The results showed that N, P were enriched to some extent at SML in Xichi pool, Funan River and Longquan reservoir, which made concentrations of the indexes such as total nitrogen (TN), total phosphorus (TP), chemical oxygen demand (COD)of SML be much higher than those of SSW ($P<0.05$), and the exceeding rates were up to 100%. The contents of TN,TP,COD of SML and SSW in Xichi pool, and Funan River exceeded III even Ⅳlevel of water quality standard, while these indexes in Longquan reservoir were lower than Ⅲ or Ⅱlevel of water quality standard. Though Chl. a mass concentration at SML and SSW in Funan River was prominently lower than those in Xichi pool and Longquan reservoir, according to the eutrophic evaluation standard, the water bodies of SML and SSW in Funan River and Xichi pool were in middle eutrophication, the highest index of eutrophication (E value) was up to 66.78, while there was light entuophic in Longquan reservoir, and there had obvious difference with E value and COD, TP, TN ($P<0.05$). This research shows that the water quality of Longquan reservoir is generally well. While Funan River is a middle eutrophication, and its pollution is more serious than Xichi pool, the two waters belong to national III even IV level, and SML has the capability of enrichment to the pollutants such as N, P.

KEYWORDS

Surface microlayer, Eutrophication, Subsurface water, Funan River, Assessment

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