

一個溪流生態環境綜合性評估模式之權重估計—以石門水庫自然旅遊地為例

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摘要

Previous studies of eco-environmental quality assessment of streams have relied on single indicators. Few comprehensive assessments have been applied simultaneously. Different evaluation indicators owned their diverse variations thus, integrated assessment results with a number of indicators, have more explanatory capability. However, some difficulties occurred as to how to assess and estimate the weighting values of the indicators. This study aimed to use Structural Equation Modeling (SEM) to develop a new Stream Integrity Assessment Model (SIAM) to combine indices' weightings. In one case study, we conducted seasonal surveys at a Tahan Stream tributary with eight sampling stations in the Shihmen Reservoir watershed, at eight different times from 2003 to 2004. We used environmental and/or ecological factors including River Pollution Index (RPI), Index of Biotic Integrity (IBI), Qualitative Habitat Evaluation Index (CQHEI), Family-level Biotic Index (FBI), Rapid Bioassessment Protocol III (RBP III), Generic Index (GI), and Saprobity Index (SI). From the result of this SIAM for ecological quality assessment, the variation of the geographical distribution of the ecological quality was detected.

關鍵字：structural equation modeling (SEM), stream assessment indicators, estimated weighting.