

Environmental pre-evaluation for eco-leisure : a case study of a restored stream system in Hofanchuken creek of Taipei county, Taiwan

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Abstract

The environmental evaluation approach based on the notions of pre-ecoleisure experiences was conducted in the Hofanchuken stream, of which dredged works had been enforced by eco-engineering concepts since 2003. Four sampling stations were monitored during the studying period from December 2003 to February 2004. Three indices were applied, including River Pollution Index (RPI), Citizen Qualitative Habitat Evaluating Index (CQHEI), and Integrated Biological Index (IBI) to evaluate environmental impact and biological condition after the completion period. Final results indicated that: 1) stream restored engineering work among different periods and stations were statistically significantly different by three aforementioned evaluation indices where shown worse water quality led fish species with less tolerant capability as well as swimming skills; 2) RPI, CQHEI, and IBI all provide consistent trend for evaluating environmental and biological condition of Hofanchuken stream and have dramatically significant correlations; and 3) water quality and biological condition became worse at the beginning of the repaired works whilst they turned better after the accomplishment of stream restored works. This phenomenon was driven by ecological resilience from river restoration.

Keyword : Aquatic indices, Citizen Qualitative Habitat Evaluating Index, eco-engineering, Integrated Biological Index, River Pollution Index