

## ENVIRONMENTAL AND ECOLOGICAL MEASURES OF RIVER CORRIDOR ON NAN-SHIH STREAM IN TAIWAN

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Restoration is a complex endeavor that begins by recognizing natural or human-induced disturbances that are damaging the structure and functions of the ecosystem or preventing its recovery to a sustainable condition. It requires an understanding of the structure and functions of stream corridor ecosystems and the physical, chemical, and biological processes that shape them (Stream Corridor Restoration, USDA, 2001). Specific goals of any particular restoration should be defined within the context of the current conditions and disturbances in the stream.

Environmental and ecological data in Nan-Shih stream were investigated in this study to comprehend the ecological demands. Based on the data collected, the IBI index (Index of Biotic Integrity) which takes fish species as the major target, the FBI aquatic insects Hilsenhoff index (Family-level Biotic Index) and the GI (Genus Index) index of algae were thus analyzed to quantify Nan-Shih stream's ecological system. The indices above were then applied on ISC index (Index of Stream Condition) to describe the overall river condition, including the hydrology, physical form, streamside zone, water quality, and aquatic life.

According to the indices, water quality in Nan-Shih stream is relatively clear, nevertheless, hydraulic structures along Nan-Shih stream have blocked the free passage of the fish. The priority of the river corridor restoration or the habitat improvement is suggested. The amount of ecological base flow should be released and fish passage should also be planned for government as a reference for river management.

*Keywords:* River corridor; Bio-assessment; Indices