

Post-Typhoon Wei-Pa Effects of a Catastrophic Baling Dam Collapse on a Stream Fish Community in the Tributaries of Shihmen Reservoir, Taiwan

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Abstract

Baling dam located at up stream collapsed damage totally, so the massive silt in Baling dam moved down in Da-ha Stream affected by typhoon Wei-Pa in 2007. The catastrophic collapse of the dam and ensuing flash flood resulted in a dramatic decrease in benthic insect density in riffle and pool habitats. We examined the short-term effects of the natural catastrophic collapse of the Baling dam on up/downstream fish community structure, were surveyed before and after the hit of super-typhoon Wei-Pa. Sampling was conducted seasonally from February 2005 to October 2009. Samples for biotic data and abiotic variables analyses were collected at the same time. Based on the data collected, the Morisita's index (I_m) and the Qualitative Habitat Evaluation Index (QHEI) were thus analyzed to quantify stream's fish population. The results of this study suggested that the cyprinid *Candidia barbata* that is richness and abundance then increased for 1-2 years to levels below those prior to the collapse in upstream. Collapse of the Baling dam altered the structure of the downstream fish community by causing a short-term influx of pond species, resulting in a brief increase in species richness and abundance.

Keyword : Shihmen Reservoir, Disturbance, Floods, QHEI, Baling dam