

《論文獎》

七家灣溪拆壩後之河道演變模式

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摘要 為探究七家灣溪一號壩拆壩後達到準平衡階段之河道演變模式，本研究蒐集水文、地形與影像資料，分析拆壩後一年半之河道演變情形，做為建立長期河道演變模式之基礎。七家灣溪之河道調整程度和距壩遠近與溯源侵蝕有關。本研究根據壩上游 48 m 處與下游 30 m 處斷面，分別定義上下游九個與六個河道演變階段。在時間尺度上，上游河道進入階段 B(主河道調整) 僅需數分鐘、進入階段 E3(河道拓寬並持續下切) 需 1~2 年、而準平衡階段 F' 尚未達到，因此以此研究所建立之河道演變模式為基礎，持續監測未來七家灣溪達到準平衡階段之過程有其必要。

關鍵詞：河道演變模式、拆壩、泥砂沖淤、河相、七家灣溪。

Channel Evolution Conceptual Model Associated with Dam Removal at Chijiawan Creek

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ABSTRACT This study focused on channel responses one and a half years after dam removal in the Chijiawan Creek and proposed a channel evolution model based on analyses of hydrology, morphology, and images. Channel adjustment is highly influenced by the distance between the dam and the headcut erosion. We defined nine and six stages of the channel evolution model for the upstream and downstream reach, respectively, according to the cross sections 48 m upstream and 30 m downstream from the dam. It took a couple of minutes to reach stage B (main channel migration) and one year or so to reach stage E3 (widening and continued incision). As Chijiawan Creek has not reached the quasi-equilibrium state, stage F', we suggest that the establishment of a long-term channel evolution model is critical for in-situ monitoring.

Key Words : Channel evolution model, dam removal, sediment erosion and deposition, river morphology, Chijiawan Creek.