邊坡植生固碳量估算～以曾文、南化、烏山頭水庫國有林地為例

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摘　要

植生固碳量一般係以用聯合國政府間氣候變遷小組(IPCC)「2006國家溫室氣體清冊指南」所建議之原則及公式進行推估，除普遍應用於森林之植生固碳量推估外，並可進一步應用於邊坡造林植生固碳量之推估，文中案例為以曾文、南化及烏山頭水庫集水區國有林地98年莫拉克颱風後崩塌地面積為基準，探討經由各項保育治理工作之推動，至105年梅姬颱風後造林植生復育、間接穩固坡面促進植生復育，以及環境的自然復育等情形之植生固碳量，經評估曾文、南化及烏山頭水庫集水區國有林地邊坡總復育面積約1,537.9ha，植生固碳量約15,417.9t/year，約等於39.6座大安森林公園之固碳量。

關鍵字：崩塌地、植生復育地、固碳量。

The Estimation of Carbon Sequestration for Slope Afforestation : A Case Study of State-Owned Forest Land at Zengwen Reservoir, Nanhua Reservoir and Wushantou Reservoir

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Abstract

Carbon sequestration of vegetation is commonly using the estimation formula in “Guidelines for National Greenhouse Gas Inventories” of Intergovernmental Panel on Climate Change (IPCC). Other than its use to measure carbon sequestration of forest, it can be further use to estimate carbon sequestration of slope afforestation. This case study using the collapse slope area of state-owned forest land in the catchment area of Zengwen Reservoir, Nanhua Reservoir, and Wushantou Reservoir as a benchmark to explore the result of conservation efforts. From typhoon Morakot (2009) to typhoon Meiji (2016), the area of slope stabilization and erosion control using vegetation is about 1,537.9ha, the carbon sequestration is about 15,417.9 tons/year, it is about the amount of carbon sequestration of 39.6 Daan Forest Park.

Key Words：landslide, afforestation, carbon sequestration.

一、前　言

曾文、南化及烏山頭水庫集水區因地形陡峭、地質條件不佳，受民國98年莫拉克颱風之高強度長延時降雨，造成水庫集水區土石沖刷及崩塌嚴重，暴雨逕流再挾帶大量土砂下移，造成水庫淤積急遽增高，除影響南部地區之供水穩定外，產生之大量崩塌地更失去森林之固碳公益效能，為確保曾文、南化、烏山頭水庫營運功能、上游集水區水域環境保育，及有效提升南部區域水源備援及常態供水能力，保障