

## 應用沖蝕針量測評估曾文水庫集水區整治邊坡土壤沖蝕抑制率

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**摘 要** 民國 98 年莫拉克颱風誘使曾文水庫集水區發生大規模土砂災害，其中入庫砂源尤以細粒料土壤沖蝕為鉅，形成水庫濁度且淤積量升高之風險，甚至影響水庫供水能力。為解決嚴重之水質惡化與水庫淤砂問題，相關權責單位針對災害坡面以植生工程進行治理，增加地表覆蓋面積及防止雨滴逕流沖蝕，抑制表土流失。為量化莫拉克颱風後至 101 年間已辦理植生工程對曾文水庫減淤效益，本研究於集水區境內佈設現地沖蝕針，藉以建立並累積降雨引致土壤沖蝕深度量測數據。由量測結果分析發現，經整治邊坡相較於未整治邊坡，土壤沖蝕抑制率至少達 36.62%，顯示保育治理工程確有成效且有效抑制土壤流失。

**關鍵詞：**曾文水庫集水區、土壤沖蝕抑制率、保育治理。

### **Application of Erosion Pins Measurement to Evaluate Soil Erosion Suppression Rate of Remediated Slopes in Tsengwen reservoir watershed**

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**ABSTRACT** In 2009, typhoon Morakot induced massive sediment-related disasters within the Tsengwen reservoir watershed flushing large amounts of sediments into the reservoir mostly constituted of fine sediments from soil erosion. This led to increase turbidity and serious sedimentation, and severely affecting the water supply capacity of the reservoir. To solve the deterioration of water quality and reservoir sedimentation, hillslope vegetation engineering has been conducted between 2009 and 2012 on a large scale by the authorities to increase land cover area preventing heavy runoff and suppressing soil erosion. To quantify the suppressed rate of soil erosion on remediated slopes and represent the effectiveness of sedimentation reduction of Tsengwen reservoir, this study utilized the measured rainfall-induced soil erosion depth of several erosion pins embedded in remediated and non-remediated hillslopes. Based on long-term erosion pin data, soil erosion suppression rate averaged 36.62% at least in Tsengwen reservoir watershed. These results also demonstrate that remediation efforts of hillslope vegetation engineering are effective in suppressing soil erosion.

**Key Words:** Tsengwen Reservoir Watershed, Soil Erosion Suppression Rate, Conservation and Management.

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