# 亞熱帶地區人工濕地的土壤性質變化

# Changes of Soil Physiochemical Properties in Subtropical Constructed Wetlands with Different Ages

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## 摘　要

濕地只佔地球陸地表面的 6%，但卻提供許多如水質淨化、洪峰削減與棲地復育等生態系服務的價值。濕地由於具有高初級生產量，成為供給濕地生態系中各食物鏈階層重要的能量來源。人工濕地，最初的建造主要目的在於對鄰近農業或其他家庭廢水排放提供淨化服務。然而隨著濕地完工後，其土壤營養鹽的變化與濕地生態系的穩定性變化，過去並沒有太多文獻討論，尤其在亞熱帶地區的人工濕地，並無太多研究團隊對其有著墨。

新海人工濕地位於新北市板橋區，為自 2003 年起以人工方式建置濕地，以淨化大漢溪的水質，改善生態環境、維持河川水量及生態功能，新海人工濕地共有三期工程，佔地 13 公頃，濕地分成草澤、草生地、開放水域與陸島等四種地景結構。本研究針對新海橋一到三期濕地土壤進行各物理化學參數的分析，期望透過土壤元素含量的探討，可以作為判斷濕地建造後其生態系發展的狀況之參考，以助於日後進行濕地保護、管理與生態檢核重要的參考參數之一。

關鍵詞：人工濕地，土壤碳氮變化

## Abstract

Although wetlands cover only 6% of the Earth's land surface, they provide various ecosystem services such as carbon sequestration, wastewater purification, stormwater mitigation and wildlife protection. Because the high primary production wetlands have, they provide sufficient nutrients that are needed for the all the life in the ecosystems. Constructed wetlands are designed mainly for treating agricultural or household wastewater. While the C and N stored in the systems are important to their ecosystem functions while yet to be well studied.

Hsin-Hai Constructed Wetland is located in Banqiao District, New Taipei City. It has been constructed mainly for improving water quality of Dahan River since 2003. Hsin-Hai Constructed Wetland has a total of three phases, covering an area of 13

hectares. The wetland is divided into four types of landscapes, namely grass swamp, grassland, open water and island. Therefore, this study comprehensively determined the changes of soil physiochemical propertiesin the three phases of Hsin-Hai constructed wetland. Through this study, we hope to provide information that is useful to future wetland protection, management and ecological assessment.

Keywords: constructed wetlands， soil carbon and nitrogen changes