以生態水文特性探討雙連埤濕地棲地改善規劃

Habitat Improvement Planning for Shuanglian Reservoir Wetland Based on Ecohydrological Characteristics

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摘　要

本研究聚焦於恢復雙連埤重要濕地於 1990 年代時之多樣性棲地樣貌，包括水陸交接帶、淺水區、深水區及浮島等多類型生態單元。透過地形調整，濕地環境由單一平坦地形型態轉變為具高低起伏之非均勻地形，營造出兼具淺水與深水特徵的多樣性棲地，有效提升生物多樣性，如維持各類珍稀水生植物的棲息空間。現有閘門設施為三孔式(每孔寬 90㎝、高 160㎝)且無閘板，本研究研擬改善為鋼索式倒伏閘門，具水位調控功能，調控範圍自最低水位 462.5m 至最高水位 464.0m（變動幅度為 1.5m)。可依據乾濕季節變換與濕地重要水生植物需求特性，彈性調整水位，改善濕地水生植物的生長環境。新設計之閘門兼顧防洪需求，並有效減緩外來魚種由下游逆流進入雙連埤濕地之風險。此外，本次閘門改善設計未對下游渠道造成顯著水文衝擊，確保下游安全。本案成果將為區域濕地保育與棲地生態功能恢復提供重要經驗，可供未來類似濕地生態工程之參考與應用。

關鍵詞：水文調控、棲地復育、閘門改善、生態工程

Abstract

This study aims to restore the diverse habitats of Shuanglian Reservoir Wetland to its status in the 1990s, including areas such as water-land edges, shallow zones, deep zones, and floating islands. By reshaping the terrain, the flat wetland is transformed into a varied landscape, providing both shallow and deep water habitats and supporting greater biodiversity, especially for rare aquatic plants. The current sluice structure is a three-hole design without gate panels. This project proposes replacing it with a cable-operated flap gate that can control water levels between 462.5 m and 464.0 m. Water levels can be flexibly adjusted according to seasons and plant needs, improving habitat quality for aquatic plants. The new gate also supports flood control and reduces the risk of invasive fish entering the wetland. Additionally,

it does not significantly affect downstream water flow. These improvements offer practical experience for wetland conservation and can serve as a reference for similar future projects.

Keywords: Hydrological Regulation, Habitat Restoration, Gate Improvement, Ecological Engineering