

淡水蝦於水生植物棲息地利用與環境因子之關係

Aquatic Vegetation Habitat Utilization by Freshwater Shrimp Related to Environmental Factors

國立成功大學水利及海洋工程學系

碩士

教授

柯柏隆

孫建平

Bo-Long Ke

Jian-Ping Suen

摘要

臺灣河川復育工程重點仍在排水設計與塑造景觀，河道底床多以採用拋石方式，這些工程缺乏對原生生物需求考量，一些水生生物需要不同底質形式或水生植物才能在河川中建立群落。水生植物對於河川生態是一個重要的因子，會直接影響水生生態系統，除了提供食物來源外，水生植物也具備躲避天敵、提供生殖場所的功能。在河川復育工程中塑造水生植物棲地有助於一些水生生物的生存。然而過去的研究鮮少探討水生植物與依賴水生植物作為棲息地的生物之間的關係。如淡水蝦常發現於水生植物叢或遮蔽物內。在臺灣，淡水蝦面臨棲地汙染、棲地破壞與外來種入侵的問題，這使得這些物種生存受到威脅。然而，目前淡水蝦對於水生植物的需求了解甚少。本研究以屏東縣萬巒鄉五溝水為例，探討淡水蝦於水生植物棲息地的需求，並探討環境因子與水生植物關係以提供未來河川復育工程的參考。

本研究發現擬多齒米蝦對於相對酸性的水質與原生水生植物有明顯偏好，這些原生水生植物偏好生長於細顆粒底質的淺水區，粒徑較大的底質多被外來種水生植物所佔據，多齒新米蝦偏好相對鹼性的水質、低流速區域。一些枝葉結構簡單的水生植物可以做為較大型的淡水蝦作為棲息地，枝葉繁密的水生植物有助於塑造低流速環境，並且有利於小型個體的淡水蝦生存。本研究認為：1. 河川復育工程應規劃部分細底質的區域來建立原生水生植物群落，有助於淡水蝦於河川中建立族群，特別是有利於擬多齒米蝦。2. 應該制定對於河道管理的長期規劃，才有助於生態與民生安全之間的平衡。

關鍵字：淡水蝦、水生植物、環境因子、河川復育、伏流水、五溝水。

Abstract

In Taiwan, river restoration engineering focuses on flood control and landscape works. These riverbeds are constructed by riprap. However, different aquatic organisms require different substrate forms or aquatic plants to establish communities in rivers. Aquatic plants are

important factors in river ecology. They directly affect the aquatic ecosystem. Besides providing food, aquatic plants also provide sites for reproduction and escaping from the threats of natural enemies. However, past research in Taiwan had rarely explored the relationship between aquatic plants and organisms, such as freshwater shrimp being frequently found in aquatic vegetation or under shelter. In Taiwan, freshwater shrimp are threatened by water pollution, hydraulic engineering, and exotic species, which endanger the survival of these species. However, the requirements of freshwater shrimp for aquatic plants are poorly understood. In this study, we investigated the requirements of freshwater shrimp for aquatic vegetation habitat and explored the relationship between environmental factors and aquatic plants at Wu-Gon-Shui River in Pingtung County in order to provide a reference for river restoration projects.

Keywords: Freshwater Shrimp, Aquatic Plants, Environmental Factors, River Restoration, Hyporheic Water, Wu-Gon-Shui River