季風驅動之海洋變遷：臺灣西南部眼眶魚棲息地條件

Monsoon-Driven Oceanographic Variability: Habitat Conditions of Moonfish in Southwestern Taiwan

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摘　要

沿海魚類對季風性海洋環境變化的敏感性，對於永續漁業影響深遠，尤其是在生物多樣性豐富且漁撈壓力大的地區，例如臺灣西南部。眼眶魚（*Mene maculata*）是一種具有生態與經濟重要性的魚種，日益受到季節性海洋動態之影響。本研究利用2014年至2020年間臺灣圍網漁船的漁獲資料，應用泛加法模型（GAM）探討季風對其棲地分布的影響。研究結果顯示，西南季風（SWM）期間眼眶魚分布與葉綠素濃度顯著相關，而在東北季風（NEM）期間則與海表面高度有顯著關聯。雖然棲地面積隨季節變動，但主要漁場穩定分布於北緯21.5°至25°與東經119°至120°之間。NEM期間棲地範圍有所擴張，而在SWM期間則於臺灣淺灘出現西向延伸。此研究結果對眼眶魚季節性棲地動態提供了關鍵見解，有助於資源管理與因應氣候變遷之調適策略的制定。

關鍵字：眼眶魚、泛加法模型、棲地分布、季節變異性、臺灣西南部、太平洋

Abstract

The susceptibility of coastal fish to monsoonal oceanographic alterations significantly affects sustainable fishing, especially in biodiverse and intensively exploited areas such as southwest Taiwan. Moonfish (*Mene maculata*), a species of ecological and commercial importance, is increasingly influenced by seasonal oceanic dynamics. This research examines the monsoonal influence on their habitat distribution using generalized additive models from Taiwanese purse seiner catch data between 2014 and 2020. The findings indicate a significant link between chlorophyll levels and moonfish distribution during the southwest monsoon (SWM), and sea surface height during the northeast monsoon (NEM). Despite seasonal fluctuations in habitat size, the primary fishing area remained consistent within 21.5°–25°N and 119°–120°E. Expanded habitats were noted during NEM, but a westward extension occurred in SWM along the Taiwan Bank. These findings provide critical insights into the seasonal habitat dynamics of moonfish, facilitating resource management and adaptation techniques in response to changing climate conditions.

Key words : *Mene maculata*, generalised additive modeling, habitat distribution, seasonal variability, Southwest Taiwan, Pacific Ocean.