

房裡海堤常見陸蟹調查研究

The study on the common land crabs of the Fangli Seawall

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摘 要

本研究以苗栗縣苑裡鎮房裡溪與南房裡溪出海口間之房裡海堤進行陸蟹調查，自南側堤尾起算，總長約 330 公尺，現況環境由紅樹林、卵石及泥灘地所組成，堤內側有一水防道路及側溝，其餘皆為木麻黃防風林。範圍內有大量蟹類族群，因道路側溝屬感潮段，當發生大潮差時，海水灌入溝內，部分陸蟹於繁殖季時甚至直接於溝內釋幼，形成特殊的生態系統。爰此，為瞭解房裡海堤週邊棲地之陸蟹族群及降海釋幼路線，以做為後續海堤改善之生物友善對策。

本研究於 111 年 6 月至 8 月及 112 年 7 月至 8 月陸蟹降海釋幼期間，於房裡海堤進行 6 次物種補充調查。依據調查結果，共觀察到 7 科 20 種蟹類，包含地蟹科(凶狠圓軸蟹、毛足特氏蟹)、相手蟹科(紅螯螳臂蟹、漢氏無齒螳臂蟹、雙齒近相手蟹、斑點擬相手蟹、摺痕擬相手蟹)、弓蟹科(隆背張口蟹、平背蜞、秀麗長方蟹、字紋弓蟹、臺灣厚蟹)、沙蟹科(乳白南方招潮蟹、角眼沙蟹、中華沙蟹、弧邊管招潮蟹)、大眼蟹科(萬歲大眼蟹)、毛帶蟹科(角眼切腹蟹、長趾股窗蟹)及梭子蟹科(鋸緣青蟳)，共計 3,847 隻次，扣除以水域活動為主的鋸緣青蟳，共計 19 種陸蟹。

而房裡海堤陸蟹的棲地可分為堤後溝渠、木麻黃防風林、紅樹林及泥灘地、沙地及卵石灘地等四個位置，堤後溝渠共發現 11 種蟹種，如漢氏無齒螳臂蟹、雙齒近相手蟹、台灣厚蟹等。而本團隊發現，側溝接壤至南房裡溪口，溝渠水位高低會隨潮差大小而有明顯變化，尤其在大潮差之時有許多屬夜間活動之凶狠圓軸蟹及紅螯螳臂蟹抱卵個體會進行釋幼行為，白天則可發現如雙齒近相手蟹及台灣厚蟹等於側溝水底覓食或休息，以維持水分降低被捕食或乾死等風險；木麻黃防風林中共發現 7 種蟹類，如隆背張口蟹、雙齒近相手蟹及台灣厚蟹等。防風林於降雨後或在大潮時會自南房裡溪口及溝渠缺口處湧入大量海水，形成暫時性水域，為多數陸蟹提供良好之棲地；紅樹林及泥灘地則有 14 種蟹類，蟹種多為弧邊管招潮蟹、乳白南方(清白)招潮蟹及角眼切腹蟹等，但也可見適應力較佳之陸蟹如摺痕擬相手蟹、雙齒近相手蟹；沙地及卵石灘地以沙蟹科(如中華沙蟹、角眼沙蟹等)之棲地，鄰近水域處，亦發現許多幼蟹及蟹穴。而位於房裡海堤西側之灘地因多以卵石堆砌而成，較缺乏土壤有機物覆蓋，故該棲地蟹群多以適應力較佳的摺痕擬相手蟹及雙齒近相手蟹為優勢物種。

而陸蟹越堤降海釋幼之觀察結果，橫跨水防道路的蟹種以抱卵紅螯螳臂蟹為主，但是在側溝觀察釋幼之蟹種，則記錄達 11 種，顯示大多數陸蟹可能仍偏好經由路徑較短之水路進行釋幼。另外，既有堤防因量體大且無水源，因而增加陸蟹移動難度。由於多數陸蟹主要仍利用側溝進行釋幼，且防風林內為陸蟹核心族群所在棲地，故建議工程應優先迴避防風林區域，並設置施工警示帶，以減少擾動；針對少數越堤釋幼之陸蟹種類，建議於出沒之熱點處，將其鄰近之堤防堤腳緩坡化，並以打毛方式使其堤腳面粗糙，減輕陸蟹與其他野生動物越堤難度；完工後，於堤前工程影響範圍進行員生濱海植生之補植(馬鞍藤、海浦姜)。期待透過相關生態保育措施，維持房裡海堤寶貴的自然資源及豐富的生物多樣性。

關鍵詞：房裡海堤、陸蟹、降海釋幼

Abstract

The study carried out a survey of land crab in the seawall of the Fangli River and the South Fangli River estuary, which began from the southern embankment, totaling approximately 330 meters, the current environment consists of mangrove, pebbles and mud land, and the inside of the embankment has water-proof roads and side ditches, and the rest are wooden hemp-proof-air forests. There are a large number of crab populations in the range, because the road sideways ditch is a sensitive tide, when the tide is poor, seawater is inserted into the ditch, and some land crabs are larval release migration directly in the ditch during the reproduction season, forming a special ecosystem. In order to understand the land crab community and the larval release migration route of the seawall surrounding the seawall, as a biological friendly countermeasure to improve the seawall.

The study conducted six species supplementary surveys on the Fangli seawall during larval release migration of land crab from June to August 111 and July to August 112. According to the results of the survey, a total of 7 family 20 species of crabs were observed, including Gecarcinidae (*Cardisoma carnifex*, *Discoplax hirtipes*), Sesarmidae (*Chiromantes haematocheir*, *Orisarma dehaani*, *Parasesarma bidens*, *Parasesarma pictum*, *Parasesarma affine*), Varunidae(*Chasmagnathus convexus*, *Gaetice depressus*, *Metaplex elegans*, *Varuna litterata*, *Helice formosensis*), Ocypodidae(*Austruca lactea*, *Ocypode ceratophthalmus*, *Ocypode sinensis*, *Tubuca arcuata*), Macrophthalmidae(*Macrophthalmus banzai*), Dotillidae(*Tmethypocoelis ceratophora*, *Scopimera longidactyla*), Portunidae(*Scylla serrata*), a total of 3,847 times, deducting the *Scylla serrata* mainly based on waters, a total of 19 species of land crabs.

The habitats of land crabs at the Fangli Seawall can be categorized into four locations: post-dike drainage ditches, Casuarina windbreak forests, mangroves and mudflats, as well as sandy and pebbled shorelines. A total of 11 species of crabs were found in the post-dike drainage ditches, including species such as *Orisarma dehaani*, *Parasesarma bidens* and *Helice formosensis*. Our team discovered that the side ditches connected to the estuary of the southern Fangli River experience significant changes in water levels due to tidal differences. During high tides, many egg-carrying individuals of nocturnal species like *Cardisoma carnifex* and *Chiromantes haematochir* were observed releasing their larvae, while during the day, crabs such as *Parasesarma bidens* and *Helice formosensis* could be found foraging or resting at the bottom of the ditches, preserving moisture and reducing the risk of predation or desiccation. In the Casuarina windbreak forests, a total of 7 crab species were identified, including *Chasmagnathus convexus*, *Parisesarma bidens*, and *Helice formosensis*. After rainfall or during high tides, large amounts of seawater would surge into the windbreak from the southern Fangli River estuary and the gaps in the drainage ditches, forming temporary water bodies that provide good habitats for many land crabs. The mangroves and mudflats housed 14 crab species,

Tubuca arcuata, *Austruca lactea*, and *Tmethypocoelis ceratophora*, but more adaptable land crabs like *Parasesarma plicatum* and *Perisesarma bidens* were also present. The sandy and pebbled shorelines were the habitat for crabs from the Ocypodidae family, such as *Ocypode sinensis* and *Ocypode ceratophthalmus*. The beach on the western side of the Fangli Seawall, primarily composed of pebbles and lacking organic soil cover, is dominated by more adaptable species, with *Parasesarma plicatum* and *Perisesarma bidens* being the most prevalent.

The observation of land crab crossing the embankment of the ocean, the crab species crossing the water road is mainly the *Chiromantes haematocheir*, but observed in the side ditch to larval release migration the crab species record of 11, shows that most land crab may still prefer to release the young through the shorter path. In addition, there are large embankment and no water source, thus increasing the difficulty of land crab movement. Since most land crabs are mainly still using side ditch for release young, and the wind forest is the habitat of land crab core ethnic group, it is recommended that the project should prioritize the area of the forest and set construction warning belts to reduce disturbance; for a few cross-embankment of the land crab species, it is recommended to slip its neighboring embankment at the hot spot, and make its embankment rough, reduce the difficulty of land crab and other wildlife to cross embankment; after completion, the planting of native coastal plants is carried out in the impact range of the embankment project (*Ipomoea pes-caprae*, *Vitex rotundifolia*). We look forward to maintaining the valuable natural resources and rich biodiversity of Fangli seawall through relevant ecological conservation measures.

Keywords : Fangli Seawall , land crab , larval release migration