

屏東地區黃緣螢濕地調查研究

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摘要 螢火蟲是生態環境的重要生物指標之一，幾十年來由於環境的破壞與汙染，造成螢火蟲生存的棲地大量的減少，因此，本研究透過屏東縣九如鄉玉泉村的黃緣螢棲地(崇蘭舊圳)為研究對象，經過現地 19 個月的調查量測棲地流況、水質、土壤，以穿越線法調查左右護岸上黃緣螢成蟲數量。結果顯示區域內黃緣螢成蟲發生的高峰期有三次，分別為 3~4 月、6~7 月及 11~12 月，每天活動最頻繁的時間為日落後 30~60 分鐘，且自然護岸黃緣螢成蟲數量為景觀護岸的三倍以上。水深及流速的調查結果分別為 42.3cm 及 0.33m/s，水溫、溶氧、電導度、鹽度及酸鹼度的調查結果分別為 25°C、4.63mg/l、0.42mS/cm、0.21ppt 及 7.21，流況及水質的調查分析與前人的研究結果相當接近，顯示該地區的水環境相當適合黃緣螢幼蟲的生存。自然護岸與景觀護岸水質調查結果相當接近，但土壤性質存在顯著的差異性。土壤性質與黃緣螢成蟲數量呈現中度以上的相關性，其中總體密度、孔隙率及酸鹼度與黃緣螢成蟲數量之相關係數分別為 -0.809、0.803 及 0.734，顯示為高度相關。換句話說，當黃緣螢化蛹時，較喜歡鬆軟及中性偏弱鹼性的土壤條件。

關鍵詞：螢火蟲、黃緣螢、水質、土壤性質。

A study on wetland of *Luciola ficta* Olivier in Pingtung county

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ABSTRACT The number of fireflies is the index of environment pollution in suburban area. Firefly is one of the important biological indexes for ecological environment. The study area is located in Yuquan village, Jiuru Township, Pingtung County. The field investigation data included flow conditions, water qualities, soil properties and the number of adult *Luciola ficta* Olivier were collected and analyzed in this paper.

The results show that the peak times of daily activity for adult *Luciola ficta* Olivier occur after sunset to 30-60 minutes, and there have three breeding periods (March to April, July to August and November to December) in the study area. The natural revetment is more than 3 times the number of adult *Luciola ficta* Olivier of landscape revetment. The average values of flow depth and velocity are 42.3cm and 0.33m/s respectively, and the means of water qualities for water temperature, dissolved oxygen, electrical conductivity, salinity and pH value are 25, 4.63mg/l, 0.42mS/cm, 0.21ppt and 7.21. The above data investigated in the study area are very close to the investigations of other researchers. In other words, the water environment of the study habitat is suitable for living with larva of *Luciola ficta* Olivier. The difference in water qualities between natural revetment and landscape revetment is very closely, but the soil properties of two revetments differ greatly. Using the statistic method, the correlation coefficients between the number of adult *Luciola ficta* Olivier and Bulk density, Porosity, Soil reaction are -0.809, 0.803 and 0.734 respectively. On the other hand, the *Luciola ficta* Olivier prefers living in soft and mildly alkaline soil during pupation period.

Key Words: Firefly, *Luciola ficta* Olivier, Water quality, Soil property.

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