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**Study on the diversity and distribution of octocoral community and
associated invertebrates in southern waters of Hong Kong**

香港南部水域八放珊瑚群落及無脊椎動物多樣性和分佈研究

Final Report

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Executive Summary

Octocoral communities are vital components of marine ecosystems, providing shelter and food resources for a diverse array of marine organisms. The last survey of octocorals in Hong Kong was conducted over a decade ago, revealing a highly diverse community in the southern waters. Unfortunately, despite their ecological importance, they are often understudied and overlooked due to the challenges associated with surveys and identification. In this project, comprehensive surveys were conducted at 30 sites across the southern and western waters of Hong Kong. A total of 40 species of octocorals were identified using an integrated approach that combined morphological traits, including sclerites investigation, and DNA barcoding sequences. This approach successfully clarified some previously confused species and discovered six newly recorded species in Hong Kong. Additionally, several hotspots of octocoral richness were identified. Furthermore, 30 species of octocoral-associated invertebrates with one new record species were also documented, underscoring the critical role octocorals play in supporting marine life. To facilitate future monitoring programs and public education activities, a photographic catalogue that could be freely accessible online by the public was produced for the quick identification of octocorals and their associated invertebrates, promoting long-term citizen engagement in biodiversity conservation efforts.

八放珊瑚群落是海洋生態系統的重要組成部分，牠們為多種海洋生物提供棲息地和食物資源。上一次與香港八放珊瑚群落相關的調查已在十多年前進行，調查結果揭示了八放珊瑚群落在香港南部水域的高度多樣性。儘管八放珊瑚群落對生態系統有相當的重要性，水下調查和識別的難度時間往往令牠們被忽視。在本項目中，我們在香港南部和西部水域的 30 個地點進行了全面調查。通過結合形態特徵（包括骨針調查）和分子生物學研究的方法，共識別出 40 種八放珊瑚。我們透過這一方法亦成功澄清了一些曾被混淆的物種，並從中發現了六個本地新記錄物種。此外，本項目還確定了八放珊瑚的熱點區域，以及記錄了 30 種與八放珊瑚相關的海洋無脊椎動物，其中包括一種香港新記錄物種，證明八放珊瑚在支持海洋生物方面起了關鍵的作用。我們亦製作了一份香港八放珊瑚及其相關無脊椎動物的圖鑑，以便公眾快速識別不同種類的八放珊瑚，公眾可於網上免費存取。這圖鑑有助大家日後於水底監察時快速辨認八放珊瑚及相關物種，並便利公眾教育活動，提高公眾對生物多樣性保育的認識的參與。