



鄉郊保育辦公室
Countryside
Conservation
Office



Smart Wetland 2.0 - A Smart Monitoring Network for Mai Po Nature Reserve

Introduction to Smart Camera Traps

智慧濕地 2.0 – 建立米埔保護區智慧監測網絡

智慧相機監測網簡介



Since 2022, CCFS has supported WWF-Hong Kong's Smart Wetland Initiative to implement smart technology and integrated intelligent devices into the management protocols of Mai Po Nature Reserve (MPNR). This strategic initiative has facilitated the real-time monitoring of water levels, water quality, and buffalo tracking in the MPNR, enhancing the comprehensive understanding of ecological dynamics. Building upon the success from previous CCFS-supported Smart Wetland 1.0 project, WWF-Hong Kong has now kick-started Smart Wetland 2.0 project. The Project focuses on establishing a smart monitoring system in MPNR to enhance the camera trap monitoring network. Smart Wetland 2.0 will feature a solar-powered camera trap network complemented by an AI-

powered online data management platform. By connecting to the newly setup mobile ad-hoc network (MANET) in MPNR, real-time camera trap data will be efficiently collected to the online platform and automatically analyzed using AI species identification feature of the platform. The use of AI to identify the target species could enhance the effectiveness of sorting and examining camera images, enabling swift responses to animal sightings or even trespassing events. Data from camera traps could be used to monitor the occurrence of target mammals, possibly offering implications for habitat management practices.

While the camera trap network is being set up in MPNR at the moment, it is hoped that these innovative solutions will lay the foundation for and drive future smart wetland management practices.

自 2022 年以來，鄉郊保育資助計劃一直支持世界自然基金會香港分會的《智慧濕地計劃》，將智能技術和設備整合到米埔自然保護區的日常管理中。這種策略性計劃已促進了對保護區的水位監測、水質監測和水牛追蹤的實時監控，以及加強對生態相互關係的理解，提升濕地管理。建基於之前鄉郊保育資助計劃支持的《智慧濕地 1.0》計劃的成功經驗，世界自然基金會香港分會已經開展了《智慧濕地 2.0》計劃。這計劃旨在於米埔自然保護區建立一個智慧監測系統，以提升紅外線相機監測網絡的效能。《智慧濕地 2.0》將設有太陽能供電的紅外線相機監測網，配合人工智能數據管理平台。通過在保護區中的隨建即連網路（MANET），收集實時數據並透過在線平台的人工智能（AI）物種識別功能進行自動分析。利用人工智能識別目標物種可以提升相機照片分析的效率，從而對動物出現甚或潛在的違法闖入事故作迅速反應。紅外線相機的數據可以用來監測目標哺乳動物的出沒，對生境管理發揮指導作用。

目前團隊正努力在米埔自然保護區不同地點設置紅外線相機及其網絡系統。希望這些創新解決方案將為未來智慧濕地管理奠定基礎及提供推動力。



