

中華白海豚監察工作：水底聲學調查

Chinese White Dolphin Monitoring Works Underwater Acoustic Surveys



香港機場管理局在三跑道系統項目施工前[#]、施工期間、隨後的工程完成及營運階段均持續在大嶼山水域進行中華白海豚水底聲學監察，並定期公布相關數據。監察結果顯示，中華白海豚持續使用北大嶼山水域，尤其是在冬季，而晚間的整体活動較日間頻繁。

Airport Authority Hong Kong continuously conducts underwater acoustic monitoring of Chinese White Dolphins (CWDs) in Lantau waters during the pre-construction[#], construction, and the subsequent post-construction and operation phases of the Three-Runway System (3RS) Project, aiming to collect information of CWDs, which is published regularly. Monitoring results indicated CWDs continue to use the northern Lantau waters, especially in winter and the overall activities are more during night-time than daytime.

[#]以三跑道系統項目施工前收集的數據作為參考基準線以進行相關的評估工作
Information gathered during the pre-construction of the 3RS Project forms a baseline reference for the relevant assessment work

靜態聲音監測 Passive Acoustic Monitoring (PAM)

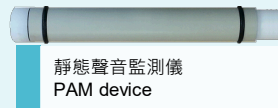


靜態聲音監測通過識別中華白海豚用作探測獵物、定位及互動的回聲定位訊號來偵測中華白海豚的出沒。在沙洲以南水域設置的靜態聲音監測儀用來補充陸上監察的數據，並在沙洲經緯儀追蹤監察站有觀察記錄時將數據同時使用，為晚間海豚聲音模式提供了有用的信息。自2016年監察工作開展至2023年中，調查工作已進行超過2,400天。

此外，在機場西面、沙洲及龍鼓洲海岸公園、大小磨刀海岸公園和擬議的北大嶼海岸公園水域亦設了六部靜態聲音監測儀，收集相關區域海豚出沒時間及地點的資訊作為補充資料。

Underwater PAM detects CWD occurrence by recognising the echolocation click trains they make to detect their prey, orientate and interact. PAM device has been deployed in south Sha Chau waters to supplement the land-based survey by providing useful information on patterns of dolphin vocalisation at night, and to coincide the data when there is sighting from Sha Chau Theodolite Tracking Survey Station. Since the commencement of monitoring works in 2016 and up to mid-2023, a total survey effort of over 2,400 days was conducted.

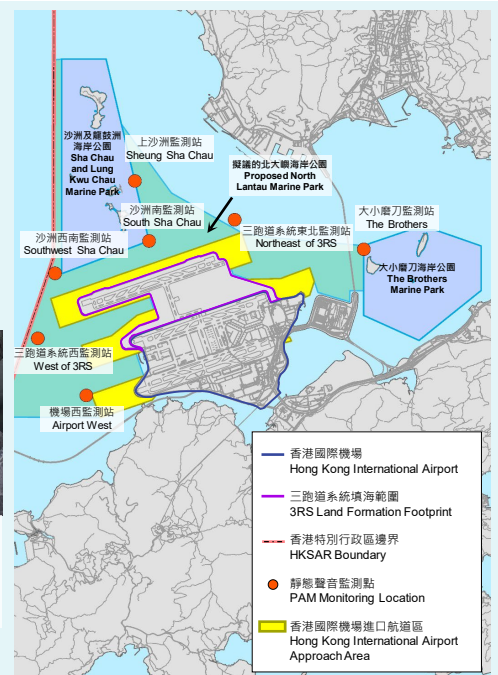
Six more PAM devices were deployed in waters around Airport West, Sha Chau and Lung Kwu Chau Marine Park, The Brothers Marine Park and the proposed North Lantau Marine Park to provide supplemental information on the temporal and spatial patterns of dolphin usage in the area.



靜態聲音監測儀
PAM device



定期收回靜態聲音監測儀作數據下載
PAM devices are retrieved regularly for data download



晚間聲學調查 Night-time Hydrophone Survey



為了進一步研究中中華白海豚使用棲息地的模式，在晚間亦進行了聲學調查。水底聲音監測儀能探測和記錄中華白海豚全部已知的聲音頻率。調查於晚上6時至早上6時期間進行，過程中調查船拖著水底聲音監測儀沿東北大嶼山、西北大嶼山及西大嶼山的調查樣條線行駛。這些晚間數據將有助補充日間船上樣條線調查所收集的觀察數據。自2022年監察工作開展至2023年中，調查總航程超過1,900公里。

To further explore patterns of CWDs' habitat use, night-time hydrophone surveys are also conducted. Hydrophone systems are capable of covering and recording the entire known range of CWD vocalisation. During the surveys, conducted between 18:00 and 06:00 hours, the monitoring vessel tows a hydrophone along the transect lines in Northeast Lantau, Northwest Lantau and West Lantau. These night-time detections contribute to supplementing visual sightings collected during daytime vessel line-transect surveys. Since the commencement of monitoring works in 2022 and up to mid-2023, a total survey effort of over 1,900 km was conducted.



水底聲音監測儀
Hydrophone device

