

大嶼山陸地植被生態系統對碳儲量和碳封存的貢獻為何？

What is the Contribution of Terrestrial Vegetated Ecosystems on Lantau Island to Carbon Storage and Sequestration?

陸地植被生態系統（如森林、灌木林、草地等）有相對高的面積覆蓋率及二氧化碳吸收率，故被視為一些最具潛力之自然為本的氣候解決方案。但是迄今，有關香港陸地植被生態系統碳儲量和碳封存的情況及其控制因子的相關本土野外研究仍甚缺乏。此外，隨著時間變化，生態演替對陸地森林碳封存潛力的影響仍未獲充分了解。

Terrestrial vegetated ecosystems (e.g. forests, shrublands, grasslands, etc.) are some of the most promising nature-based climate solution owing to their considerable areal coverage and high rates of carbon dioxide uptake. Yet, there is at present a paucity of local field studies quantifying the magnitude and controlling factors of carbon storage and sequestration in the terrestrial ecosystems in Hong Kong. Moreover, the effect of ecological succession over time on the carbon sequestration potential of terrestrial forests is poorly understood.



為填補此方面的知識落差，本研究旨在：

1. 就大嶼山不同陸地植被生態系統類型（包括森林、灌木林及草地），量化植物及土壤的碳儲量，
2. 測定不同陸地森林類型（包括風水林、低地次生林、高山森林及種植林）的碳儲量，
3. 探討生態演替及森林年齡對陸地森林碳儲量和碳封存的影響，及
4. 估算整個大嶼山所有陸地植被生態系統於植物及土壤的總碳儲量。

本研究結果能豐富我們對大嶼山陸地植被生態系統碳儲量及碳封存速率的知識，並揭示森林保育及管理所能帶來對香港實現2050年碳中和及緩解未來氣候變化的潛在好處。



The objectives of this research are to:

1. quantify the amount of carbon storage in the vegetation and soils in various types of terrestrial vegetated ecosystems on Lantau Island, including forests, shrublands, and grasslands;
2. determine the magnitude of carbon storage in different types of terrestrial forests, including fung shui forests, lowland secondary forests, montane forests, and plantations;
3. examine the influence of ecological succession and stand age on the magnitude of carbon storage and sequestration by terrestrial forests; and
4. estimate the total carbon storage in the vegetation and soils of all terrestrial vegetated ecosystems across the whole Lantau Island.

The results of this study will improve our knowledge of the magnitude of carbon storage and sequestration in the terrestrial vegetated ecosystems on Lantau Island. The findings will provide useful insights on the potential benefits of forest conservation and management to achieve carbon neutrality by 2050 and mitigate future climate change.

研究項目
Research Projects

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大嶼山陸地植被
Ecosystems on
Lantau Island

