

紅樹林知多少 Know More About Mangroves



關於紅樹林 About Mangroves

獨特的環境 Unique Environment
紅樹林位於鹹淡水交界的海海區域，是潮間帶的濕地生態系統。
Mangroves are located along brackish water shores, which form an intertidal wetland ecosystem.

種類數量 Number of Species
全球有超過60種紅樹，而香港紀錄了其中8種，如桐花樹、水椰及秋茄等。
There are over 60 species of mangroves worldwide and 8 of them can be found in Hong Kong, such as *Avicennia*, *Conocarpus*, *Bruguiera gymnorhiza* and *Kandelia cavenata*.

分布 Distribution
紅樹林主要分布於熱帶及亞熱帶地區的沿岸地區，而香港的紅樹林廣泛分布於新界西北、西貢、吐露港和大嶼山的海岸。
Mangroves are mainly distributed at the coastal areas of tropical and subtropical regions. In Hong Kong, mangroves are widely distributed along the coast of the north-western New Territories, Sai Kung, Tolo Harbour and Lantau Island.

紅樹生存的5大挑戰 Five Challenges for Mangroves' Survival

- 1. 高鹽度鹽份 Salinity stress**
泥土由於長期被海水淹浸，故含有高濃度的鹽份，影響植物的生長。
The salinity of soil is high due to prolonged inundation by sea water, affecting plant growth.
- 2. 乾旱 Desiccation**
潮退時，泥土暴露於空氣及陽光，因此變得非常乾燥，使環境缺水。
During low tide, the soil becomes very dry when exposed to the air and sunlight, depleting water in the environment.
- 3. 缺乏氧氣 Anaerobic condition**
潮漲時，植物的根被海水淹浸而無法進行氣體交換。
During high tide, the roots are submerged and thus hinder gaseous exchange.
- 4. 不穩固的基質 Unstable substratum**
泥土由於長期受到海水沖刷，變得鬆軟及不穩固，植物難以固定。
Due to the continual tidal erosion, the substratum becomes soft and unstable for plants to anchor.
- 5. 繁殖困難 Reproductive difficulties**
鬆軟不穩的泥土會降低種子的萌芽率及幼苗的存活機會。
Soft and unstable substratum hinders seed germination and seedling survival.

紅樹對嚴峻環境的適應 Adaptation to Tough Environmental Conditions

紅樹發展出不同的結構和生理機制，以適應惡劣環境及生存。以木樨為例，它如何克服紅樹生存的5大挑戰呢？
In order to adapt to the tough environmental conditions, mangroves have developed different structures and physiological mechanisms for survival. How does *Mangrove* (*Bruguiera gymnorhiza*) overcome the 5 challenges for mangroves' survival?

- 1. 高鹽度鹽份 Salinity stress**
植物會儲存一些較老的葉子，積聚鹽分。
Excess salt is accumulated and stored in old leaves so it can be shed with the leaves.
- 2. 乾旱 Desiccation**
高鹽度使葉面蒸騰作用減少，以減少水分蒸散。
Thick waxy cuticle on the leaf surface can reduce water loss by evaporation.
- 3. 缺乏氧氣 Anaerobic condition**
植物會利用根呼吸作用，吸收空氣中的氧氣。
Plants use root respiration to absorb oxygen from the air.
- 4. 不穩固的基質 Unstable substratum**
木樨的根和氣生根向外分支成網狀，幫助它更穩固地生長。
The roots and aerial roots of mangroves branch out to form a network, providing extra support and stabilizing the plants.
- 5. 繁殖困難 Reproductive difficulties**
種子由果實中發育，並由果實上發育成繁殖體（浮囊），待成熟後才發芽。發芽後，種子會沉入泥土中。
Seeds develop within the fruit and then develop into propagules (propagules) attached to the parent plant. When the propagules mature, they detach from the parent plant and anchor in the soil.

香港常見的紅樹林動物 Common Mangrove Animals in Hong Kong

紅樹林擁有很高的生物多樣性，其中招潮蟹和彈塗魚是紅樹林最常見的動物。
Mangrove possesses high biodiversity. Fiddler crabs and mudskippers are common mangrove animals.

招潮蟹 Fiddler crab / **彈塗魚 Mudskipper**

彈塗魚和招潮蟹都屬於穴居動物。潮退時牠們會在泥灘上活動，當遇到危險時便立即退回洞裡。
Mudskippers and fiddler crabs are replet diggers. They move around on the mudflat during low tide and retreat to the burrows when threatened.

1. 只有雄性才有大螯，用於求偶、搏鬥及保護巢穴。
Only male has a large claw, which is used for courting, fighting and defence.

2. 離水後，彈塗魚仍可透過有溝的腮鰓及濕潤的皮膚呼吸。
After leaving the water, mudskipper can breathe through their root-like sea and water-foot gill chambers.

3. 招潮蟹用大螯及小螯夾取泥土中的有機物質。
Fiddler crabs use their small claws to feed on organic matter in the sediments.

4. 牠們會用觸鬚及腿的末端感知濕度，並輸入信號，保護巢穴。
They can use their tactile ends and make signal keep with the soil to sense invaders in order to protect their burrows.

5. 彈塗魚以細小植物碎動物及昆蟲為主要食物，而大彈塗魚則以藻類和有機碎屑為主。
The Common Mudskipper preys on small invertebrates and insects, while the Blue-spotted Mudskipper mainly feeds on algae and organic matter.

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7. 為什麼彈塗魚會跳及跳躍很高呢？
Why mudskippers can both hop and jump vertically?

8. 招潮蟹會挖洞嗎？
What do fiddler crabs eat?

9. 彈塗魚吃什麼？
What do mudskippers eat?

10. 其中一隻蟹是特別大的招潮蟹是蟹嗎？
The fiddler crab has a large claw. Is it fiddler or hermit?

11. 為什麼彈塗魚離水後仍能生存？
How can mudskippers survive when they are leaving water?

紅樹林的價值和功用 Values and Functions of Mangroves

野生動物的家 Home to Wildlife
紅樹林為野生動物提供食物及棲息地，亦是較細小動物的庇護及孕育場所。
Mangroves provide food and roosting ground for wildlife and they are shelters and nursery grounds for small animals at the same time.

經濟價值 Economic Values
紅樹林的落葉碎屑可用於養殖基圍蝦，而木樨及秋茄等品種的草蓆可製成蓆子。
Fallen leaves of mangroves can be used to rear shrimps at "gai wai". And *Tannin* extracted from mangrove plants like *Bruguiera gymnorhiza* and *Kandelia cavenata* can be used to make dye.

休閒 Leisure
紅樹林是供大量康樂和生態旅遊的理想地方。
Mangroves can be ideal places for recreation and eco-tourism.

天然屏障 Natural Barrier
紅樹林能抵禦由風暴引起的風浪衝擊，保護沿岸的城市和農田免受破壞。
Mangroves can protect the shorelines and coastal areas from damages by storms and waves.

保育紅樹林 Conservation of Mangroves

為使更多人有機會繼續欣賞和持續利用紅樹林資源，探訪紅樹林時應注意：
In order to allow future generations to continue to appreciate and use mangrove resources sustainably, we should follow these rules:

- 不要挖掘沙泥及避免踐踏紅樹的根部及其幼苗。
Do not dig-up the sand and mud. Also avoid trampling the roots and seedlings of mangrove plants.
- 不要干擾野生動物及破壞紅樹林。
Do not disturb the wildlife and damage mangrove plants.
- 切勿亂拋垃圾及污染海水。
Do not litter or pollute sea water.

你可以到香港濕地公園的紅樹林浮橋認識多種紅樹及動物，向朋友宣傳保育紅樹林的意義。
You can learn mangrove plants and animals at the Mangrove Boardwalk in Hong Kong Wetland Park, and spread the conservation message to your friends.

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款式 Style: 易拉架 Roll-up banner

展板數量 Number of panel: 4 塊 4pieces

尺寸 Dimension: 80cm (W) x 200cm (H) 每塊 each

總重量 Total Weight: 約 8 公斤 About 8 kg

展板預覽 Panel Preview

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KNOW MORE ABOUT MANGROVES

關於紅樹林 About Mangroves

獨特的環境 Unique Environment

紅樹林位於鹹淡水交界的沿海區域，是獨特的濕地生態系統。

Mangroves are located along brackish water shores, which form an intertidal wetland ecosystem.

品種數目 Species Diversity

全球有超過100種紅樹林，而香港則屬了其中一種，紅樹花樹，大木犀木屬。

There are more than 100 species of mangroves worldwide and its of them can be found in Hong Kong, such as *Avicennia germinata*, *Rhizophora apiculata* and *Xylocarpus moluccensis*.

分布 Distribution

紅樹林主要分佈於熱帶及亞熱帶地區。香港則位於熱帶及亞熱帶交界處。

Mangroves are mainly distributed at the coastal areas of tropical and subtropical regions. In Hong Kong, mangroves are widely distributed along the coast of the north-western New Territories, Sai Kung, Tseung Koon O and Lantau Island.

紅樹生存的五大挑戰 Five Challenges for Mangroves' Survival

- 1. 高鹽度環境 Salinity stress**
過高的鹽度會阻礙紅樹生長，甚至導致紅樹死亡。
The salinity of soil is high due to poor drainage by sea water, affecting plant growth.
- 2. 乾旱 Desiccation**
乾旱時，泥土會變得很乾，因此樹根得不到足夠的水分。
During the low tide, the soil becomes very dry when deprived of the air and sunlight, depriving water in the environment.
- 3. 缺乏繁殖 Reproductive difficulties**
紅樹的繁殖力很弱，因此繁殖率很低。
Mangroves are slow to reproduce and have a low germination rate.
- 4. 不穩定的基質 Unstable substratum**
由於紅樹的根在泥土中生長，因此基質會變得不穩定。
Due to the continual tide erosion, the substratum becomes soft and unstable for plants to stand.
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紅樹林對嚴劣環境的適應 Adaptation to Tough Environmental Conditions

紅樹林具有獨特的生理機制，以適應其生長環境。以下為紅樹生存的五大挑戰。

In order to adapt to the tough environmental conditions, mangroves have developed different structures and physiological mechanisms for survival. How does Mangrove (*Rhizophora germinata*) overcome the 5 challenges for mangroves' survival?

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香港常見的紅樹林動物 Common Mangrove Animals in Hong Kong

紅樹林具有豐富的生物多樣性，其中很多動物和植物都是紅樹林特有的動物。

Mangroves possess high biodiversity. Below crabs and mudskippers are common mangrove animals.

這些動物在紅樹林中生活，有些是紅樹林特有的動物。牠們在紅樹林中覓食、棲息和繁殖。

These animals live in mangroves, some of which are mangrove-specific animals. They forage, live and reproduce in mangroves.

紅樹林的價值和功用 Values and Functions of Mangroves

防止動物入侵 Prevent Animal Invasions

紅樹林的植物能防止動物入侵，防止動物入侵。

Mangrove plants prevent animal invasions and prevent animal invasions.

經濟價值 Economic Values

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保護環境 Environmental Protection

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Mangrove plants prevent animal invasions and prevent animal invasions.

保育紅樹林 Conservation of Mangroves

為了更多人能欣賞和保護紅樹林資源，我們應該採取以下措施：

In order to allow future generations to continue to appreciate and use mangrove resources sustainably, we should follow these rules:

- 不要挖沙及破壞紅樹林的根部和其幼苗。
- Do not dig up the sand and must also avoid trampling the roots and seedlings of mangrove plants.
- 不要干擾野生動物及破壞紅樹林。
- Do not disturb the wildlife and damage mangrove plants.
- 切勿亂丟垃圾及污染海水。
- Do not litter or pollute sea water.