

探訪水生植物 Discovering Aquatic Plants

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水生植物的類別 Types of Aquatic Plants

水生植物泛指生長在水中的植物。水生植物一般根據生長形態分為四類：Aquatic plants are plants that adapt to the aquatic environment. They can be broadly divided into four groups according to their morphology:



- 沉水植物 Submerged plants**
 全株植物沉浸在在水中，大部分品種扎根於泥土，但部分缺乏根部的品種則會在水中隨處漂流。
 The whole plant submerges in water. Most of them root in substrates but some rootless species are free-floating in water.
- 漂浮植物 Floating plants**
 植株在水面並隨水漂流，體型通常較小，根部不固定在泥土或沒有根部。
 The plants are free-floating on water surface and usually small in size. Their roots are either absent or not attached to substrates.
- 浮葉植物 Floating-leaved plants**
 植物根部固定在水底土壤中，闊大的浮水葉片通常呈圓形，並由長長的葉柄支撐著。
 Their roots anchor in substrates. Their flat leaves are usually circular in shape and supported by a long petiole.
- 挺水植物 Emergent plants**
 通常生長在淺水區域，基部沉浸在水中，而莖部的其餘部分及繁殖器官則挺出於水面。
 They inhabit in shallow water. Basal portions of the plants submerge but the upper parts of stems and the reproductive organs rise above the water surface.

水生植物對環境的適應 How Aquatic Plants Adapt to the Environment

缺乏空氣 Lack of oxygen

生長在水中環境的植物難以吸收足夠的氧氣及二氧化碳。
 It is difficult for aquatic plants to absorb sufficient oxygen and carbon dioxide in water.

蓮藕擁有通氣管道，可把空氣帶到水底下的組織。
 The rhizome of Indian Lotus possesses air transportation channels for delivering air to underwater organs.

缺乏陽光 Lack of sunlight

植物需要陽光進行光合作用，以製造食物。渾濁的水體，因此水生植物難以吸收足夠的陽光。
 Plants need sunlight for photosynthesis to produce food. Turbid water hinders the penetration of sunlight into the water. Thus, it is harder for aquatic plants to obtain sufficient sunlight.

大王蓮有寬大的葉面，可增加接觸陽光的面積。
 Victoria sp. has large leaves to enlarge the surface area for sunlight absorption.

水流沖擊 Strong water current

不斷的水流沖擊會使水生植物難以扎根於泥土，甚至容易被沖走。
 It is difficult for aquatic plants to root in substrates under strong water current. They may even be washed away.

荇草具有柔軟的莖部及呈絲狀的葉片，可減低水流阻力，使自身不易折斷或被連根拔起。
 Eel Grass has soft and flexible stems with thread-like thin leaves. These features can reduce water resistance and prevent them from snapping or being rooted out.

繁殖困難 Reproductive difficulties

在水中環境，花粉及種子傳播的成功率和幼苗存活率都較陸生植物為低。
 In the aquatic environment, the success rate of pollen and seed dispersal as well as the seedling survival rate are lower than that in the terrestrial environment.

蓮生機葉菌能進行無性繁殖，以快速擴展族群及增加存活率。
 Giant Salvinia can reproduce asexually for rapid colony expansion and higher survival rate in aquatic environment.

水生植物與我們的日常生活 Aquatic Plants and Our Daily Lives

食物 Food

你知道有些水生植物是我們日常的食物嗎？
 Do you know we utilise some aquatic plants as food sources?

- 稻 Rice**
 稻的種子經加工後就是我們日常食用的白米。另外，不少雀鳥也喜歡在稻田覓食，當收成時的稻穀。
 After processing, its seed becomes polished rice that we consume daily. Birds also like to forage in paddy fields when the rice grains ripen.
- 芋 Taro**
 芋擁有心形的葉，我們食用的芋頭就是它的地下塊莖。
 Taro leaves are heart-shaped, its underground stem is a common crop.
- 蘆葦 Arrowhead**
 蘆葦箭頭形的葉子會挺出水面，其塊莖是我們日常的食物。
 Its arrowhead shaped-leaves rise above the water surface and its tubers are our common food.
- 西洋菜 Water Cress**
 原產於亞洲北部和歐洲，因此命名為西洋菜。葉片和莖部是本地冬季非常受歡迎的蔬菜。
 It is originated in northern Asia and Europe. Its leaves and stems are common local vegetables in winter and spring.
- 蓮藕 Lotus Rhizomes**
 蓮藕有圓形的挺水莖，莖面被有白色絨毛；花形美麗，觀賞價值甚高。全株皆能食用或入藥，如蓮藕莖部以煲湯行飲。
 It has emergent round leaves with white fine hair on the surface. The spectacular flowers make it a plant of significant ornamental value. Every part of the plant is edible or medicinal, such as lotus rhizomes and lotus seeds.
- 蓮子 Lotus Seeds**

請認出以上的食物是來自哪種水生植物吧！
 Try to match the food mentioned with the following aquatic plants!



水生植物與我們的日常生活 Aquatic Plants and Our Daily Lives

日用品及加工製品 Daily utensils and processed products

- 苧苳 Malacca Galangale**
 苧苳擁有堅韌而兩棱角的莖，人們會用曬乾的苧苳（俗稱鹹水草）作繩編織，亦會作為編織物品，如粽子。Malacca Galangale has a rigid and angular stem. Dried stems of the plant are used as weaving threads, and natural strings for tying rice dumplings.
- 燈心草 Common Rush**
 燈心草有修長的莖部，莖部綠色表層內是白色的海綿狀組織，往日被用作燈點油燈的燈芯。
 Its stems are slender. Inside the outer green sheath of the stem, there are white spongy tissues that were used as wicks for oil lamps in the old days.

生態價值 Ecological Values

提供氧氣 Source of oxygen

沉水植物在光合作用過程中釋放的氧氣，讓水生動物得以呼吸。
 Submerged plants release oxygen into water during photosynthesis, providing aquatic life with oxygen for respiration.

提供食物 Source of food

水生植物處於食物鏈的基層，是許多動物的食物來源。
 At the base of the food chain, aquatic plants are food source for many animals.

為動物提供棲居之處 Shelter for animals

水生植物在水中形成生存空間，既為水生動物提供棲息和繁殖地方，也是養育幼體成長之處。
 Aquatic plants form a living space in water. They provide aquatic life with habitats and spawning grounds, as well as shelters for nestlings.

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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

探訪 水生植物

Discovering Aquatic Plants

水生植物的類別

Types of Aquatic Plants

水生植物係生長在水中的植物，水生植物一般可根據生長形態分為四類：

Aquatic plants are plants that adapt to the aquatic environment. They can be broadly divided into four groups according to their morphology.

沉水植物

Submerged plants

全株沉沒於水中，大部分沉於水底，但部分特化的品種則會在水中飄浮。

The whole plant submerges in water. Most of them root in substrate but some rootless species are free-floating in water.

浮葉植物

Floating plants

植株在表面漂浮，體積較小，根部不固定或固定較鬆。

The plants are free-floating on water surface and usually small in size. Their roots are either absent or not attached to substrate.

浮葉植物

Free-floating plants

植株漂浮在水面，但大的浮葉片經常展開，並由葉柄固定支撐。

Their roots anchor in substrate. Their flat leaves are usually circular in shape and supported by a long petiole.

挺水植物

Emergent plants

植株生長在淺水區域，基部以固定於水中，而上部則具莖部伸出水面。

They establish in shallow water. Basal portions of the stems submerge but the upper parts of stems and the reproductive organs rise above the water surface.

水生植物對環境的適應

Aquatic Plants Adapt to the Environment

缺乏空間

Lack of space

生長於水中環境的植物難以吸收足夠的氧氣及二氧化碳。

It's difficult for aquatic plants to absorb sufficient oxygen and carbon dioxide in water.

蓮蓬有通氣通道，可把空氣帶到水下的組織。

The rhizome of Indian Lotus possesses air transportation channels for delivering air to underwater organs.

缺乏陽光

Lack of sunlight

植物需要很大量的光合作用，以製造食物，陽光射穿淺水的水層，因此水生植物需要吸收更多的光。

Plants need sunlight for photosynthesis to produce food. Turbid water hinders the penetration of sunlight into the water. Thus, it is harder for aquatic plants to obtain sufficient sunlight.

大蓮蓬有寬大的葉面，可增加吸收陽光的光表面積。

Lotus has large leaves to enlarge the surface area for sunlight absorption.

水流沖擊

Strong water current

不穩的水流沖擊會使水生植物難以扎穩的立足，甚至會被沖走。

It is difficult for aquatic plants to root in substrate under strong water current. They may even be washed away.

蓮葉有寬大的葉脈及呈輪狀的葉片，可減低水流阻力，使葉片不易被沖走或捲曲。

Lotus leaves are wide and feature stems with thread-like thick veins. These features can reduce water resistance and prevent them from snapping or being rolled out.

繁殖困難

Reproductive difficulties

在水中環境，可讓母種子體快速生長和發育的繁殖率較低。

In the aquatic environment, the success rate of pollen and seed dispersal as well as the seedling survival rate are lower than that in the terrestrial environment.

蓮蓬能繁殖進行無性繁殖，以快速擴展母種的生存空間。

Lotus can reproduce asexually for rapid colony expansion and higher survival rate in aquatic environment.

水生植物與我們的日常生活

Aquatic Plants and Our Daily Lives

食物

Food

你知道有些水生植物是我們日常的食物嗎？

Do you know we utilize some aquatic plants as food sources?

鮮嫩的蓮子及蓮蓬是許多亞洲的蔬菜，例如，許多東南亞菜式會加入蓮子，像「紅燒蓮子」。

After processing, the seed becomes considered a vegetable that we consume daily. Lotus seed has to be brought to market from where the rice grows again.

穿蓮心炒肉片，是許多亞洲家庭烹調的家常菜。

Stir-frying lotus hearts with meat is a common recipe.

蓮蓬可以製成蓮子鮮肉水餃，是廣東傳統的日常食物。

The rhizome of Indian Lotus is used to make dumplings that are popular in Guangdong.

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Lotus seeds and pods are common local vegetables in water and land.

蓮蓬可以製成蓮子鮮肉水餃，是廣東傳統的日常食物。

Lotus seeds and pods are common local vegetables in water and land.

辨認以上的食物與非食物水生植物!

To match the food/non-food with the following aquatic plants!

水生植物與我們的日常生活

Aquatic Plants and Our Daily Lives

日用品及加工製品

Daily utensils and processed products

苧苧

Miscanthus Galingga

苧苧擁有堅韌而特殊的葉，人們會用牠們的莖製成「繩索、繩索、繩索」作繩索，亦會作為織物材料，如「襪子」。

Miscanthus Galingga has a rigid and durable stem. Great stems of the plant are used in making threads, and natural dyes for tying into kamayong.

燈心草

Common Reed

燈心草具有特殊的莖，莖的綠色莖體內有白色的纖維，平日被用作製造燈芯。

The stems are hollow, from the outer green sheath of the stem there are white energy because they were used as wicks for lamps in the old days.

生態價值

Ecological Values

提供氧氣

Source of oxygen

水生植物在光合作用過程中釋放氧氣，讓水生動物得以呼吸。

Submerged plants release oxygen into water during photosynthesis, providing aquatic life with oxygen for respiration.

提供食物

Source of food

水生植物是許多動物的食糧，許多動物都依賴水生植物生存。

All the kind of the food chain, aquatic plants are food source for many animals.

為動物提供棲息之處

Shelter for animals

水生植物在淺水區域生長，為水生動物提供棲息和繁殖的場所。

Aquatic plants form a living shelter in water. They provide suitable site for habitat and spawning grounds, as well as the options for feeding.

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