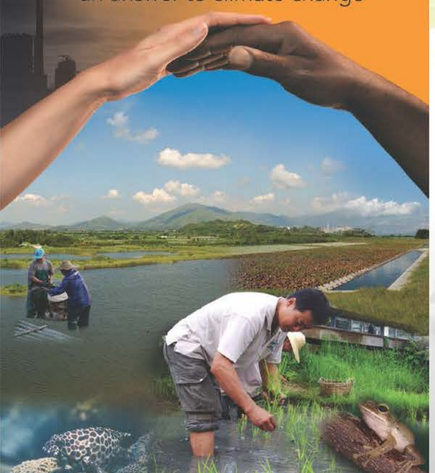
Panel 10 – 携手保護濕地，應對氣候變化 Caring for Wetlands – An Answer to Climate Change

世界濕地日
World Wetlands Day

攜手保護濕地
CARING FOR WETLANDS

應對氣候變化
an answer to climate change



濕地、生物多樣性

世界濕地日
World Wetlands Day

濕地、生物多樣性與氣候變化
Wetlands, Biodiversity and Climate Change

濕地公約秘書處以「濕地、生物多樣性與氣候變化」作為2010年「世界濕地日」的主題，藉此喚起大家關注生物多樣性的損失，以及人為引致的氣候變化。聯合國亦把2010年定為「國際生物多樣性年」，目標是在2010年，分別於全球、區域、以及國家水平上大幅度降低其生物多樣性的損失程度（即「2010年生物多樣性目標」）。

生物多樣性下降有許多不同的原因，包括生境消失、污染、氣候變化、過度耗用淡水資源、外來入侵種以及過度開發濕地。

科學家相信在今個世紀，「氣候變化」將會成為導致濕地消失的主要原因。氣候變化的出現，主要是由於人類活動大量排放二氧化碳及其他溫室氣體所致。氣候變化令氣溫上升和海水位上涨，影響多種濕地生態環境。

2010 International Year of Biodiversity
Logo of 2010 International Year of Biodiversity

The Ramsar Secretariat has chosen "Wetlands, Biodiversity and Climate Change" as the theme for the 2010 World Wetlands Day, in order to raise the awareness of biodiversity loss and human-induced climate change. The United Nations has also declared 2010 as the International Year of Biodiversity, which aims to reduce the current rate of biodiversity loss significantly at the global, regional and national levels by 2010, in short "2010 Biodiversity Target".

There are many different factors contributing to the loss of biodiversity. The causes include habitat loss, pollution, climate change, excessive withdrawal of freshwater, invasive species, overexploitation of wetlands etc.

Scientists believe that "climate change" will become a key driver to the loss of biodiversity in this century. The cause of climate change is mainly due to the emission of carbon dioxide and other greenhouse gases in large amount from human activities. Climate change increases the atmospheric temperature and causes sea-level rise, and affects many types of wetland ecosystems.

與氣候變化

世界濕地日
World Wetlands Day

濕地的重要性與功能
The importance and functions of wetlands

濕地是水與陸地的相匯之處，有不同的類型，由寒溫帶至溫帶的泥炭沼澤，到熱帶的泥洪森林，以至淺岸的紅樹林、山間深谷中的河流溪與，甚至是人類開闢的魚塘或灌耕農地。

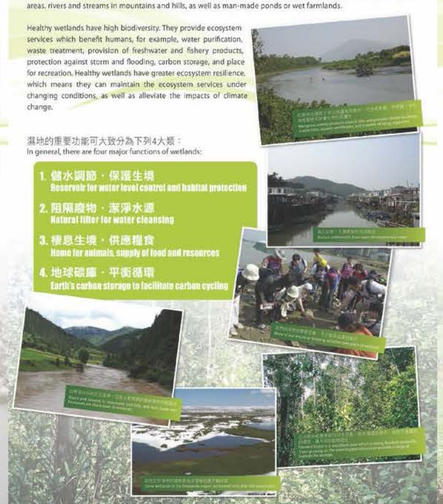
健康的濕地有很高的生物多樣性，以及提供生態系統功能，讓人類從中獲益——例如淨化水體、處理污水、提供淡水及漁獲、減低風暴和洪水所造成的破壞、保護沿岸生境、儲藏碳、以及作消閒用途。此外，健康的濕地會有較大的恢復能力，縱使周遭環境轉變，它們仍可維持正常的功能和概和氣候變化所帶來的壞影響。

Wetlands are places where water connects to land. There are different types of wetlands varying from peatlands around the cold temperate to temperate zone, to mangrove swamp in tropical areas, rivers and streams in mountains and hills, as well as man-made ponds or wet farmlands.

Healthy wetlands have high biodiversity. They provide ecosystem services which benefit humans, for example, water purification, waste treatment, provision of freshwater and fishery products, protection against storm and flooding, carbon storage, and place for recreation. Healthy wetlands have greater ecosystem resilience, which means they can maintain the ecosystem services under changing conditions, as well as alleviate the impacts of climate change.

濕地的重要功能可大致分為下列4大類：
In general, there are four major functions of wetlands:

1. 儲水調節，保護生境
Reservoir for water level control and habitat protection
2. 阻隔廢物，潔淨水源
Natural filter for water cleansing
3. 棲息生境，供應糧食
Home for animals, supply of food and resources
4. 地球碳庫，平衡循環
Earth's carbon storage to facilitate carbon cycling



and Climate Change

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1. 儲水調節，保護生境
Reservoir for water level control and habitat protection

濕地像一塊大海棉，儲存人自然中的水分。在乾旱的季節，濕地儲存的水分會慢慢被釋出。濕地裡部份的水亦會渗透至地底，補充地下水源，使利農耕。

有些濕地能夠儲存暴雨帶來的降雨，舒緩河溪泥里的壓力。此外，河溪的濕地植物亦會減緩河水的流速，而且它們的根部能抓緊泥土，防止土壤被流水沖刷而流失，保護河堤。

Wetlands serve as a huge sponge storing water on the Earth. During dry season, water stored in wetlands is discharged slowly, infiltrated into the soil and recharged the groundwater. This facilitates hydroponics.

Some wetlands can store large amount of water, relieving the pressure of flooding. Wetland plants grow within streams and rivers slow down water current. The roots of the plants can hold the soil tightly, preventing it from being washed away by water current, and thus protecting the riverside.

2. 阻隔廢物，潔淨水源
Natural filter for water cleansing

河水從上游流向下游時，會沖刷河岸兩旁的土壤，令河水充斥沙泥及懸浮物而變得混濁。但當河水流過水生植物叢生的濕地時，植物的枝幹會起物理性的阻隔作用，過濾沙土及其他污染物，令河水變得清澈。濕地的水生植物會吸取水中過多的養分或有機物，它們亦會吸收其他污染物，包括重金屬等有害物質。

When water rushes down from upstream to downstream, it removes soil from riverbank, increasing the soil and suspended particles in water. However, when water flows through the aquatic plants, stems and roots of the plants act as a physical filter to trap the suspended particles as well as other pollutants to clean up the water. Aquatic plants growing in wetlands uptake excessive nutrients and organic matters, and remove pollutants including heavy metals.

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3. 棲息生境・供應食糧
Home for animals, supply of food and resources

濕地是很多生物的搖籃，他們棲息於各種濕地之中，或於生命中某一個階段完全依賴濕地生存。例如紅樹的根提橫交錯，為動物提供庇護所，吸引牠們棲息繁衍，同時也吸引捕獵性的動物前來覓食。

此外，人類會製造濕耕農地或會圍地注水，形成魚塘來飼養水產，又或於潮間帶捕捉甲殼類和貝類動物作食用途。人類也會從濕地提取資源，作為日常生活或工業原料，另有很多藥物也是從濕地植物提煉得來。

Wetlands are the cradle of many lives. They live in different types of wetlands and rely on them either in their entire or part of the life history. For example, root systems of mangroves are ideal nurseries attracting many animals to live and breed, predators are also attracted to forage there.

In addition, human creates wet farmlands or encircles places for culturing fishes, or collects crustaceans or shellfishes in inter-tidal areas for food. Human also collects wetland resources and make use of them as daily essentials or industrial raw materials. Many medicines are extracted from wetland plants.

4. 地球碳庫・平衡循環
Earth's carbon storage to facilitate carbon cycling

濕地是地球上主要的碳儲存庫，並在不同的資源循環過程中擔當重要的角色。根據濕地公約秘書處的資料，濕地的儲碳量，約佔全球陸地碳含量的三分之一。

濕地植物吸收大氣中的二氧化碳，透過光合作用將之轉化成碳水化合物。

某些溫帶的濕地（例如苔原、泥炭沼等）長期被水淹浸，營遇出缺氧的環境，加上溫度低令表層植物被分解為有機物的速度緩慢，碳有機物得以累積，延緩碳在碳循環的過程中散回大氣層的速度。

Wetlands act as the major carbon reservoirs on Earth. They play an important role in the circulation of different resources. According to the Ramsar Secretariat, one-third of the world's terrestrial carbon is trapped and stored in wetlands.

Plants in wetlands take up atmospheric carbon dioxide during photosynthesis and convert them into carbohydrates.

Some wetlands in temperate region (e.g. tundra, peat bog, etc.) are waterlogged to be anaerobic. The cold temperature slows down the decomposition rate of dead vegetation to organic matters. As these cause the accumulation of organic carbon and reduce the rate of carbon entering to the atmosphere in the carbon cycle.

www.wetlandpark.com

世界濕地日
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濕地、生物多樣性與氣候變化
Wetlands, Biodiversity and Climate Change

現代人的生活模式已被證實會造成巨大的生物多樣性損失，科學家相信在今個世紀，氣候變化將會成為濕地消失的主要原因。濕地的消失會影響生態系統，而最後受影響的還有我們人類。

濕地、生物多樣性與氣候變化，三者的關係密不可分。我們每一個人都手執緩和氣候變化與保護生物多樣性的重要鑰匙。從今天起，就讓我們透過改變自己的生活方式和態度，例如珍惜用水和減少用電，一起攜手保護濕地，應對氣候變化！

Modern living style has been proven to cause dramatic loss of biodiversity. Scientists believed that climate change will become a key driver to the loss of biodiversity. The loss of wetland harms the ecosystems, and in the end affects all human beings.

Wetlands, Biodiversity and Climate Change are closely related to one another. "Caring of Wetlands" is the key to climate change mitigation and protection of biodiversity, and we, all individuals are the ones holding this vital key. There are lifestyle decisions to be made, for instance, our current habits of water and energy consumption. Start caring for wetlands and respond to climate change today!

許多研究都發現濕地或依賴濕地而物種正在減少，當中包括水鳥、淡水魚、兩棲類動物、龜、蠑螈、爬蟲和依賴濕地生存的雨林哺乳類動物（資料來源：濕地公約秘書處）
Many findings reveal that the wetland or wetland-dependent species, including waterbirds, freshwater fishes, amphibians, turtles, crocodiles, corals, and wetland-dependent mammals are decreasing (Source: Ramsar Secretariat)

濕地和濕地物種 Threatened wetland species (2008)	百分比 Global (2008)	備註 Remarks
水鳥 Waterbirds	17	統計對3,618種國際候鳥所知的水鳥 Regarding 3,618 waterbird species listed by BirdLife International
淡水魚 Freshwater fishes	23	不適用 Not applicable
兩棲類動物 Amphibians	26	統計所有的為淡水生活的兩棲類動物 Regarding the world's freshwater amphibians
龜 Turtles	72	統計所有的為淡水龜類 Regarding 90 freshwater turtle species
蜻蜓 Dragonflies	60	不適用 Not applicable
珊瑚 Corals	27	不適用 Not applicable
依賴濕地的陸生動物 Wetland-dependent mammals	38	不適用 Not applicable

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