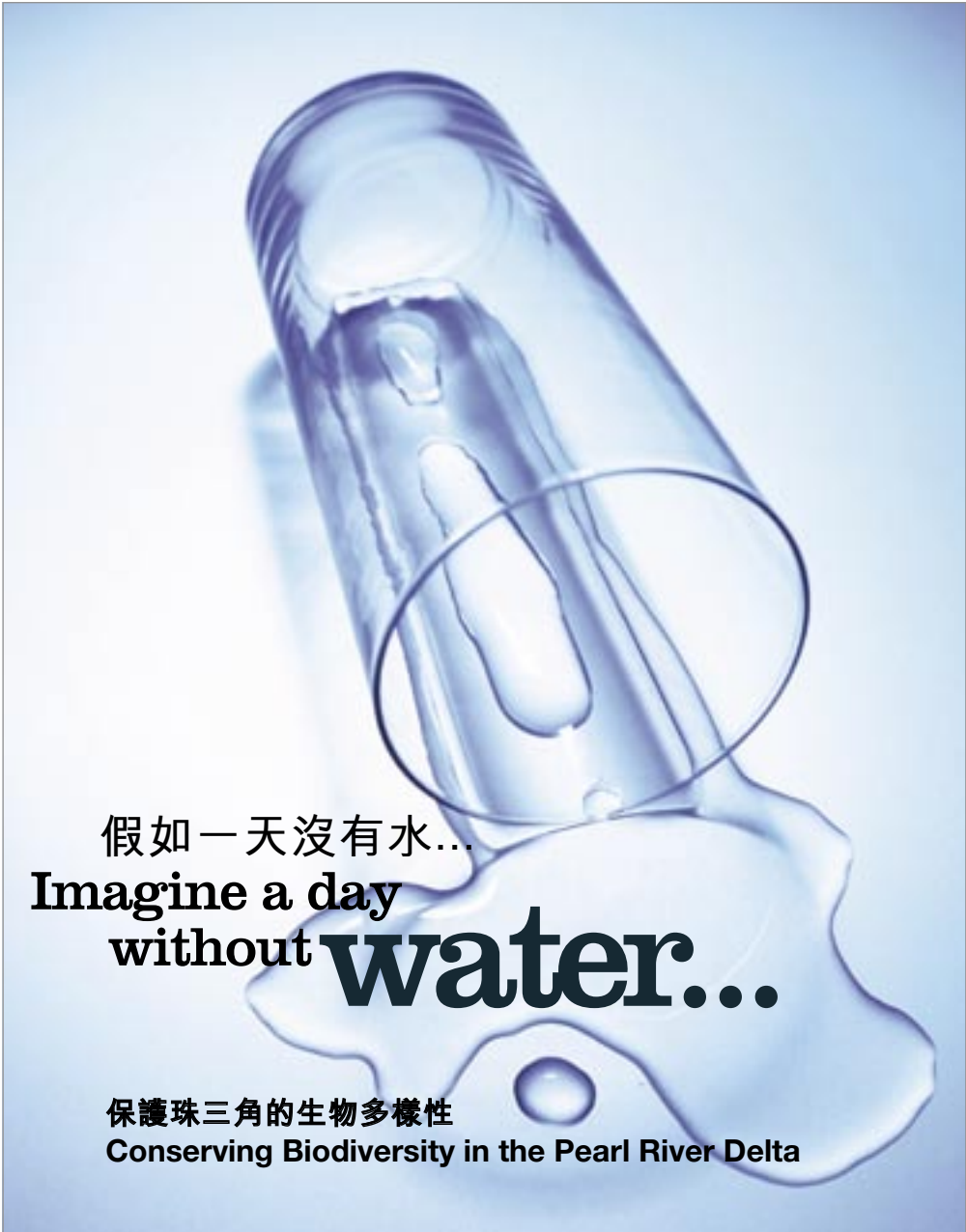




*for a living planet*

**EPSON**  
EXCEED YOUR VISION



假如一天沒有水...  
**Imagine a day  
without water...**

保護珠三角的生物多樣性  
Conserving Biodiversity in the Pearl River Delta

# 你知道淡水有多重要嗎？

## Do you know how important freshwater is?



如果一整天什麼也不能喝：沒有水、茶、咖啡、果汁或汽水，你會怎麼樣？相信一天下來，你最渴求的只有一樣，就是清潔的食水。

淡水生態系統對維持淡水供應至為重要。在汪洋、大海、湖泊、河流、冰川和地底蘊含的水源中，只有百分之三為淡水，其餘均為鹹水。

在這百分之三的淡水當中，只有極少量可供使用，讓我們每次扭開水龍頭，就可得到清潔的水，用作沐浴或煮食。

我們需要來自淡水生態系統的水分，才能維持這些生態系統健康，但不幸的是，珠江三角洲的淡水生態系統現正面臨嚴峻危機。

### 淡水生態系統有何作用？

淡水生態系統包括所有濕地、沼澤、溪流、河川和湖泊，還有在這些地方棲息的所有動植物。

珠江三角洲包括廣州、佛山、東莞、肇慶、中山、珠海、惠州、江門、深圳、澳門及香港。珠三角及其上游地區稱為珠江流域，包含所有流向珠江的河川和溪流，覆蓋範圍廣闊，遠至越南。三條主要河流匯聚，形成了珠江。珠江三角洲為廣闊的低窪泛洪平原，由幾百萬年來隨珠江流向南中國海的沙土積聚而成。

隨著沙土慢慢積聚，這個地區不但孕育出各種不同的動植物，更形成了該地獨有的生態系統。

### 淡水生態系統的生物多樣性卻面臨威脅

1985年至2004年間，廣東省的人口已增長約50%，上升至約3,300萬人，淡水生態系統的生物多樣性亦因此逐漸受到威脅，生態系統的健康及淡水的供應亦因此面臨危機。

以上問題由多個原因導致，而且往往互有關連。人口急劇上升，加上工業化及城市化的急促步伐，為珠江三角洲整個生態系統增添沉重壓力，尤以淡水生態系統為甚。

### 為何要關注這問題？

這個龐大的淡水生態系統，對珠江三角洲以千萬計居民的健康和生活十分重要。珠江流域的淡水系統功能甚多，除了提供潔淨水源及具天然防洪作用外，人們還可在此種植稻米和捕魚以提供食物，這兒更是消閒及孕育文化的地方。

我們有必要作出行動，保護珠江三角洲，但究竟問題的成因是什麼？本會最近進行的愛普生珠三角保育概況研究（如閱覽報告全文，請登入第11頁所載網址）結果顯示問題相當

複雜，並可能對淡水供應構成威脅。請細閱本小冊子，認識各種問題，並了解淡水生物多樣性以至淡水供應備受威脅的原因。這裡的情況有望得到改善，但我們必須立即行動，防止問題進一步惡化。

**H**ow would you feel if you couldn't drink anything for an entire day: no water, tea, coffee, juice or soda? By day's end there would be only one thing you would want: clean water.

Freshwater ecosystems are important in maintaining a fresh supply of water for everyone to use. Of all the water in the world – in the oceans, seas, lakes, rivers, glaciers and underground – only three percent is freshwater. The rest is seawater.

Of that three percent, only a tiny fraction is easily available to use every time you turn on the tap, take a shower or eat something grown.

We need the water that's in freshwater ecosystems, and we need those systems to stay healthy.

Unfortunately for the people of the Pearl River Delta our freshwater ecosystems are in grave danger.

### What do freshwater ecosystems do?

A freshwater ecosystem consists of all the wetlands,

marshes, streams, rivers and lakes with all the living creatures and plants they contain.

The Pearl River Delta (PRD) contains within it Guangzhou, Foshan, Dongguan, Zhaoqing, Zhongshan, Zhuhai, Huizhou, Jiangmen, Shenzhen, Macau and Hong Kong. Upstream, the Pearl River Basin which contains all the rivers and streams that flow into the Pearl River, is much larger, including territory as far away as Vietnam. Three major rivers converge to create the Pearl River. The PRD is a large, low-lying floodplain created by millions of years of sediments deposited as the Pearl River reaches the South China Sea.

As this process took place, distinct animals and plants developed, forming a distinct ecosystem that is unique to the geographic region.

### **But the biodiversity of freshwater ecosystems is being threatened**

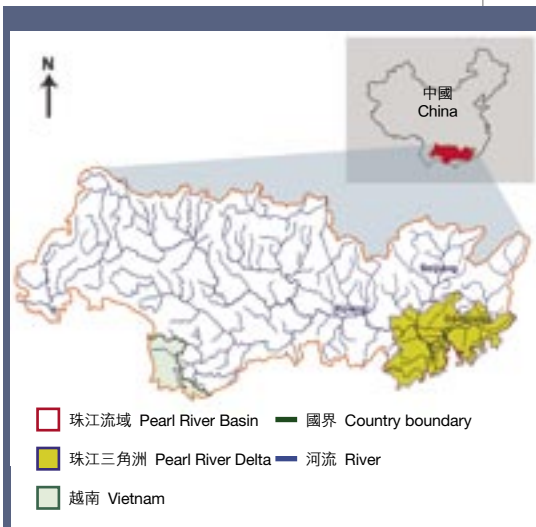
The population of Guangdong province has grown by about 50 percent since 1985 to roughly 83 million as of 2004. The result is a steady erosion of biodiversity in freshwater ecosystems – vital to the ongoing health of those systems and the provision of freshwater.

There are a number of reasons for this, all of which are interconnected. Rapidly rising population levels combined with rapid industrialisation and urbanisation have put tremendous strain on all the ecosystems in the Pearl River Delta, particularly the freshwater ecosystems.

### **Why should I care?**

This enormous freshwater system is vital to the health and wellbeing of the many millions of people living in the Pearl River Delta. Freshwater systems in the Pearl River Basin provide clean water, natural flood control, food via rice farming and fishing, recreational areas and places of cultural significance.

We need to act. But what is causing all the problems? Results from a recent WWF Hong Kong Epson Pearl River Delta Scoping Study (turn to page 11 for a web link to the study) show that the problems are complex and could potentially threaten our supply of freshwater. These threats are outlined in this booklet. Please read on and be aware of what threatens freshwater biodiversity, and by extension our freshwater supplies – there is still hope for the region but we must act now to prevent further problems.



### **可用水量**

廣東省每年的人均可用水量為4,735立方米，當中包括供飲用、沐浴、飼養牲畜、種植及作其他用途的淡水，數字相等於約兩個奧林匹克標準泳池的容水量（一個奧林匹克標準泳池的容水量約2,500立方米），是中國其他地區的平均可用水量的兩倍。然而，全球的平均可用水量約7,000立方米，或相等於約三個奧林匹克標準泳池的容水量，遠高於廣東省的數字。因此，要避免廣東省出現淡水供應短缺的情況，我們必須善用淡水。

### **Water availability**

The average water availability per person (for drinking, bathing, raising animals, growing crops and all other purposes) per year in Guangdong province is 4,735 cubic metres or roughly two Olympic-sized swimming pools, about twice the average throughout the rest of China. For reference, an Olympic-sized swimming pool is about 2,500 cubic metres. However, it is much lower than the global average of approximately 7,000 cubic metres, equivalent to almost three swimming pools. And that means water must be used efficiently to avoid shortages.

### **香港的食水從哪裡來？**

香港約80%的淡水來自東江，因此珠江流域生態系統的健康，絕對與香港市民息息相關。

### **Where does Hong Kong's water come from?**

About 80 percent of Hong Kong's freshwater comes from the Dongjiang River, which means the health of ecosystems in the Pearl River Basin is directly important to the people of Hong Kong.

# 珠江三角洲的生物多樣性

## Biodiversity in the Pearl River Delta

### 同心協力 拯救品種

#### *Working together to save these species*



©Alan Leung/WWF-Hong Kong

唐魚。

*The White cloud mountain minnow.*

水 生生態系統健康與否，就是棲息於其中的動植物必須繼續存活。每種生物在生態系統中都擔當不同角色，協助系統運作，可見生物多樣性是多麼重要。以下是部分棲息於珠江流域的生物，我們必須同心協

The survival of an aquatic ecosystem means that all the plants and animals that live in that habitat must continue to survive. Each one plays a role that helps the whole ecosystem to function. That's why biodiversity is so important. Below are some of the creatures that make their home in the Pearl River Basin, whose threatened existence we can work together to protect, while also protecting the ecosystem that supports them.

#### **The White cloud mountain minnow** *(*Tanichthys albonubes*)*

This beautiful little fish is found only in Guangdong, and makes its home in the mountain streams of the province. The fish was thought to have disappeared, as it hadn't been seen in the wild for about 20 years.

Scientists believe that the decline of the White cloud mountain minnow is to do with streams drying up due to soil erosion and stream diversion caused by



©Alan Leung/WWF-Hong Kong

種數量更有接近 1,000 種。廣東省亦記錄得超過 130 種兩棲動物及爬蟲類動物。為保護廣州當地特有的淡水魚及瀕危兩棲與爬蟲類動物，已建議增設多個保護區。

#### **How many species are in the Pearl River Basin?**

Though the exact magnitude of the number of species cannot be pinpointed, studies have shown that the multiple types of species number in the thousands. The number of fish types was once recorded as 161 in the Guangdong section of the Pearl River, and the total number of Phytoplankton, Zooplankton and Benthos (bottom-dwelling creatures) species is approximately 1,000. Over 130 species of amphibians and reptiles were recorded in the Guangdong province. New reserves have been proposed to protect endemic freshwater fishes and endangered amphibians and reptiles in Guangzhou.

#### **珠江流域的品種數量有多少？**

儘管未能確定生物品種的實際數目，但有研究顯示，該地擁有過千種生物品種。在廣東省珠江沿岸地區曾記錄得 161 種魚類品種，而浮游植物、浮游動物和水底生物的品

力，才能保護這些面臨生存威脅的品種，以及牠們所依靠的生態系統。

## 唐魚

這種小巧美麗的魚類是廣東省獨有的品種，棲息於省內的山溪。由於這種小魚曾在野外消失約 20 年，專家一度以為野生唐魚經已絕種。

科學家相信，過度砍伐林木引致土壤侵蝕及河流改道，令溪流乾涸，以及食蚊魚等侵佔生境，均為唐魚數量驟降的原因。

於 2003 年，在野外重新發現唐魚的蹤影，令這品種再現生機。政府已考慮設立自然保護區，以保護這珍貴魚種，但我們亦要尋求更多方法，以確保唐魚受到妥善保護。只要我們積極努力，專心致志，相信未來將有可能重新發現更多瀕危物種的生境地。



©Alan LaungWWF Hong Kong

鯡魚。  
*The Reeves shad.*

## 鯡魚

於 70 年代末期，鯡魚甚具商業價值。這種魚類於南中國海及東海等多個水域出現，而珠江亦可見到其蹤影。到了 90 年代，鯡魚在珠江地區已瀕臨絕種。過往每年可捕獲最多 175,000 公斤的鯡魚，於 1999 年則只有 200 公斤。

鯡魚屬遷徙魚類，平日在大海生活，但每逢繁殖期便會返回河流產卵。儘管仍未能肯定鯡魚瀕臨絕種的確實原因，但這與其返回上游繁殖的習性有重大關係。

過度捕魚、遷徙河流水質污染、堤壩及建設工程干擾其遷徙路線，以及棲息環境因挖掘河道而受到破壞，均為鯡魚瀕臨絕種的主要原因。鯡魚已被列為受保護品種，並將設立更多保護區以助鯡魚的數量回升，但仍須更積極恢復其遷徙路線。

deforestation. It is also facing competition from the Mosquito fish, which is an invasive species.

Hope has returned with the rediscovery of a wild population in 2003. The government has considered setting up a nature reserve to protect the species, but more initiatives can and should be explored to ensure the protection of the White cloud mountain minnow. With hard work and attention, it could be possible to rediscover more important sites for many threatened species.

## The Reeves shad (*Tenualosa reevesii*)

As late as the 1970s, the Reeves shad was a commercially important fish that ranged in waters like the South China Sea and the East China Sea including the Pearl River. By the 1990s, the Reeves shad was nearly extinct from the Pearl River area. Yearly catches of up to 175,000 kilogrammes could be expected, but the catch in 1999 was just 200 kilogrammes.

The Reeves shad is a migratory fish that lives at sea but returns to rivers to reproduce. Although the exact reasons for the near total collapse of the Reeves shad population are not known, the species' need to migrate upriver provides a strong clue.

Over-fishing is certainly a cause, and water pollution in migratory rivers, interruption of migratory routes thanks to damming and construction, and the destruction of habitats due to river channelling probably also played a part. The Reeves shad has been listed as a protected species, and it is possible that more nature reserves will be designated for it, giving hope to the wild populations. Nevertheless, more effort is needed in reconnecting their migratory pathways.

## The Chinese sturgeon (*Acipenser sinensis*)

Sometimes referred to as a living fossil, the Chinese sturgeon is thought to have existed since the age of the dinosaurs, over 140 million years ago. It has official protection from the Chinese government, but its numbers in the wild are dwindling fast.

The Chinese sturgeon can reach up to five metres in length and weigh as much as 500 kilogrammes, and is one of the largest freshwater fish species. But these sturgeons take a long time to mature

## 中華鱈

中華鱈在超過一億四千萬年前的恐龍時代已經存在，所以有「活化石」的稱號。雖然中華鱈被中國政府正式列為受保護動物，但其野生數目仍在急速下降。

中華鱈是最大型淡水魚類之一，可生長至五米長，更可重達 500 公斤，達至成熟期需時約 10 年。中華鱈棲息於中國東面沿岸一帶，在繁殖期會游返長江和珠江等河流產卵。

野生中華鱈在珠江瀕臨絕種，相信主要是由於進行大規模堤壩及建設工程，阻塞了中華鱈的遷徙路線所致。西江有關當局積極進行鱈魚的保育工作，並推行魚苗放養計劃，務求令中華鱈能夠繼續存活。然而，部分科學家對人工繁殖及野生中華鱈的基因混合問題表示關注。



中華鱈有「活化石」之稱。  
A "living fossil", the Chinese sturgeon.

## 中華白海豚

中華白海豚是自然界最友善的動物之一，由香港至澳洲都可發現其蹤跡，亦有分佈於珠江河口及中國沿岸大型河口一帶水域。中華白海豚喜歡三五成群生活，壽命可達 40 歲。雄性的中華白海豚在 13 歲達成熟期，而雌性則為 10 歲。年幼的海豚會與父母一起生活，直至可獨自覓食為止。

有研究發現中華白海豚等高等捕獵者體內含有高水平的污染物，原因是牠們捕食的小魚和底棲生物，受到重金屬及化學品等污染物的污染，而中華白海豚活躍的水平亦受到填海、挖泥及船隻航行的嚴重干擾。我們必須採取進一步保護措施，以讓其繼續存活，現時首要任務是進一步研究中華白海豚在珠江河口的狀況。



中華白海豚。  
The Chinese white dolphin.

©Lindsay Pater

— around ten years. And while the Chinese sturgeon lives throughout the coastal areas of China's eastern seaboard, it returns to rivers – principally the Yangtze River and the Pearl River – to reproduce.

Extensive damming and construction works blocking the migratory path of the wild Chinese sturgeon are believed to be the principal reason for the collapse of the sturgeon in the Pearl River. Efforts have been made on behalf of the sturgeon by authorities in Xijiang, where fish restocking programmes have been carried out to bolster the survival of the Chinese sturgeon, but some scientists have expressed their concerns on the mixing of genes between the captive and the wild populations.

## The Chinese white dolphin (*Sousa chinensis*)

One of the natural world's most sociable animals, the Chinese white dolphin is found from Hong Kong to Australia, but there is one population that resides in the Pearl River Estuary, with a few other populations along the Chinese coast, also in big estuaries. Living in small groups of three to four members, the Chinese white dolphin can live up to 40 years, with males reaching maturity at age 13 and females at age ten. Young dolphins live with their parents until they can find food on their own.

A high level of pollutants has been detected in top predators such as the Chinese white dolphin, a result of their consumption of smaller fish and bottom-feeding organisms that have also been exposed to pollutants such as heavy metals and chemicals. Their favourite areas have also been heavily disturbed by reclamation, dredging and boat traffic. Further protection efforts are necessary to ensure its continued survival, beginning with further research into the status of the Chinese white dolphin in the Pearl River Estuary.



©Alan Leung/MWF-Hong Kong

## 破壞是怎樣造成的？ What's causing the damage?

**隨**著珠江三角洲經濟急速發展，人類改變了珠江流域的面貌，損害生態系統及其生物多樣性，長遠而言對淡水供應造成威脅。以下是在過去 30 年因經濟發展而產生的問題：

### 抽取用水

由於人口不斷增長及工業化發展，自淡水生態系統抽取用水進行建設工程普遍，而且更有增加趨勢，因而令水流下降，部分水生生態系統因乾涸而未能運作。

### 砍伐林木

在 1949 年以前，廣東省的天然樹林幾乎遭砍伐殆盡，這不但使土壤侵蝕的情況惡化，更削弱了土地吸收雨水的功能。由於侵蝕情況加劇，雨水更快流入河流，增加了河水泛濫的危機，同時令侵蝕更加嚴重。

### 都市化

由於珠江三角洲各城市快速發展，都市範圍擴大，令脆弱的淡水生態系統面臨危機。不少流域遭移平，以興建房屋、工廠、商場和道路。

**A**s the economy of the Pearl River Delta has expanded so quickly, people have been making changes to the Pearl River Basin that damage ecosystems and biodiversity – threatening the long-term well-being of our freshwater supplies. Among the problems that have arisen with the economic development over the past 30 years are:

### Water extraction

Building the means to extract water from freshwater ecosystems is widespread, due to a growing population and industrialisation. This means water flow is reduced and some aquatic ecosystems fail to function due to drying up.

### Deforestation

By 1949, nearly all of Guangdong's native forests had been cut down. This increased soil erosion and reduced the land's ability to retain rainwater. As the erosion continued, rainfall runoff would enter rivers more quickly, increasing the chances for flooding and further erosion.

## 挖掘河道

為控制洪水及保護家居和樓宇，河道會進行加固、挖深及修直工程。此舉或可防止洪水湧進家園（砍伐林木亦可能導致洪水泛濫），但同時亦阻礙河水滋潤在河岸及濕地生長的淡水動植物。

## 堤壩

珠江流域約有 14,000 個儲水庫，而各個儲水庫的堤壩數量可能不止一個。在 1985 年以前，當地共有 13,657 個水力發電站，其後數目不斷增多，而且有不少正在計劃興建，這些建設減低淡水魚返回上游產卵繁殖的能力。

## 抽取沙石及挖泥

建造城市需要大量的砂泥，而這種混凝土的主要成份大量自河溪底部抽取。河道亦會進行挖掘工程，以便船隻行駛通過。這樣不但令水流改變，更會挖起河床淤泥導致污染。

## Urbanisation

As cities in the PRD have grown rapidly, the spread of urban areas has put sensitive freshwater ecosystems in danger, in many cases eliminating them altogether as new land is used for housing, factories, shopping centres and roads.

## River channelling

To control flooding and protect homes and buildings, rivers are concreted, deepened and straightened. While this may stop floodwaters from reaching homes (floods that may have happened because of deforestation), it prevents water from nourishing freshwater flora and fauna on riverbanks and wetlands.



**污染：20% 河流的水不適宜使用，較 90 年代增加 7%**  
**Pollution: 20 percent of our rivers are unusable, up from seven percent in the 1990s**

## 廢料及污水

80 及 90 年代人口急速增長，令污水處理廠不勝負荷。系統負荷過重，加上執行法例時遇到困難，很多時污水未經處理便被排出，造成嚴重污染。

## 雨水徑流

雨水將城市表面的污染物，例如重金屬、燃油、柴油、固體廢料、清潔劑及其他化學品沖到河溪。此外，肥料及殺蟲劑等農業污染物亦流進淡水生態系統。

## 過度捕魚

珠江三角洲人口不斷增長，生活日益富庶，而珠江河

口是當地居民的其中主要食物來源。在部分河流，漁民使用魚雷或電擊等破壞生態系統的方法捕魚，而過度捕魚亦會損害生物多樣性。

## 外來入侵物種

最近進行的研究顯示，分別有超過 150 種及 40 種來自外地的植物及動物入侵廣東生境。引進外來物種的原因有很多，其中包括水族生物貿易及宗教信仰。外來入侵物種奪去本土品種的食物和棲息地，並干擾生態系統及生物多樣性。

### **Dams**

About 14,000 reservoirs – each of which may have one or more dams – have been built in the Pearl River Basin. By 1985, 13,657 hydropower stations had been built. More have been built since then and more are planned. These limit the ability of freshwater fish to spawn as they try to move upstream.

### **Sand extraction and dredging**

Building cities requires a lot of sand, a basic component of concrete. A lot of that sand is extracted from the bottom of rivers and streams. These same waterways might be dredged in order to make it easier for a boat to pass, but this changes the flow of the water and could stir up pollution that is sitting on the bottom.



### **Sewage and effluent**

Rapid population growth in the 1980s and 90s outstripped the ability of sewage treatment plants to cope. Overburdened systems and difficulties in enforcement mean that in many cases raw sewage is discharged without treatment, causing tremendous damage.

### **Runoff rainwater**

Rainwater washes all the pollutants that collect on surfaces in cities into rivers and streams. These pollutants include heavy metals, oil, diesel, solid waste detergents and other chemicals. Additionally, agricultural pollutants such as fertilisers and pesticides enter freshwater systems.

### **Over-fishing**

One of the prime sources of food for the growing and wealthier population of the Pearl River Delta comes from the Pearl River Estuary. In some rivers, fish are caught using explosives or electrical shocks in the water, a devastating method for ecosystems. Over-fishing is taking its toll on biodiversity.

### **Species invasion**

According to recent research, over 150 species of invasive plants and 40 species of invasive animals have become established in Guangdong. These new species are introduced for a variety of reasons, ranging from the aquarium trade to religious beliefs. Invasive species take away food sources and habitats of native species, disrupting ecosystems and biodiversity.

## 鹹潮

# Saline intrusion



### 海水

只要喝一杯海水，便會明白為何海水入侵淡水系統是如此危險的事情。我們自河流抽取淡水，令河水流量減少，當河流流入大海時，海水便會入侵河流，闖入淡水生態系統，破壞淡水動植物的生境，甚至令牠們死亡。

這亦會直接影響當地居民的淡水供應。珠江三角洲一些城市已發現海水流入取水點的情況，其中澳門已首當其衝，但問題只是剛剛開始。

隨著全球暖化問題持續影響氣候，海洋範圍將不斷擴大，導致海水進一步湧向珠江河口，令鹹潮問題加劇。更強風暴亦可能使海水入侵淡水系統的問題惡化。

### Salt water

Drink a glass of seawater and you'll know why salt water entering into freshwater systems – saline intrusion – is such a danger. When

freshwater is extracted from rivers, there is less freshwater pushing back seawater as the river flows in the sea. And that means the seawater can enter into freshwater systems, which causes freshwater plants and animals to suffer – even die.

It also directly affects freshwater sources for people. Already, seawater has entered into drinking water extraction points for some cities in the Pearl River Delta. Macau has suffered particularly from this, and this is only the beginning.

As global warming continues to affect the climate, the oceans will continue to expand, causing more saline intrusion as seawater pushes further into the Pearl River estuary. The potential for stronger storms could mean more instances of seawater finding its way into freshwater systems.



## 你知道嗎？ Did you know?

### 迫在眉睫的危機：氣候變化

氣候變化的潛在影響相當驚人。燃燒化石燃料時排放的氣體，令地球大氣溫度上升，導致全球氣候暖化，而都市化亦會使地區溫度增加。於2004年，香港天文台估計10年後的平均溫度或會上升攝氏3.5度。

當區內氣候出現變化，導致海水水位上升及淡水水位下降，海水便會流進內陸地區，因而破壞珠江流域的生態系統。全球暖化亦令水災和旱災出現的機會增加，為防止這些災難，可能須進行更多建設工程，例如建造海堤，因而令問題變得更複雜。

### The imminent threat: climate change

The potential effects of climate change are staggering. Global warming is the heating of the Earth's atmosphere due to the emissions produced by burning fossil fuels. The effects of urbanisation are likely to increase local temperatures even more. In 2004, the Hong Kong



Observatory estimated that the mean local temperature may rise by 3.5°C by the end of the decade.

The principal effect of climate change on the region occurs when sea levels rise and freshwater levels decrease, causing seawater to flow inland, damaging the ecosystem in the Pearl River Basin. With global warming also comes the likelihood of more floods and droughts – which could trigger further construction works such as sea walls, which will compound the problems.

# 現正採取了什麼措施？ What's being done?

我們需要一個綜合的方式去解決問題

**The need for an integrated approach**

內地省市政府已開始就淡水系統所面對的威脅採取行動，這絕對是好消息。於過去兩年，政府已對淡水使用及污染問題實施更嚴格規例監管。

於 2004 年，廣東省政府制定環境保護計劃，在城市與工業規劃加入可持續環境發展元素。部分市政府已投入資源，推行防污措施。於 2007 年，珠江流域內六個省份在 4 月及 5 月期間實施休魚期，並引進魚苗放養計劃。有關當局現正進行大規模調查研究，將為保育工作提供有用資料，本會亦會協助提供濕地管理培訓。

然而，淡水生物多樣性及淡水來源面臨的威脅存在複雜的關係。要應付人口急升及經濟迅速發展的需求，同時亦要維持生態系統的可持續發展，在這兩者間取得平衡絕非易事，並需要政府、不同行業及市民的通力合作。

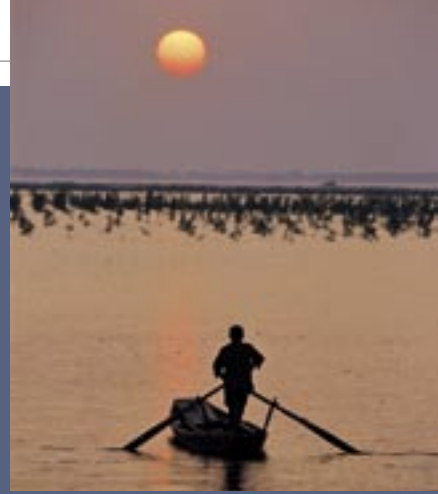
中國早已有多個成功的例子。於 2005 年，各省省長及專責食水、環境、林木及農業的官員在武漢簽署《長江宣言》，同意即時在長江發展計劃加入可持續發展元素，並採取一套綜合的管理方法。珠江流域就真正需要推行這樣的措施。

拯救行動，刻不容緩。供水短缺、農作物產量減少及漁業危機均為漠視淡水生物多樣性問題的必然惡果，只有同心協力，才能解決有關問題。水是人類的必需品，因此大家都應作出行動。

如想了解更多資料，請瀏覽 [http://panda.org/about\\_wwf/what\\_we\\_do/freshwater/our\\_solutions/rivers/irbm/index.cfm](http://panda.org/about_wwf/what_we_do/freshwater/our_solutions/rivers/irbm/index.cfm)。

**T**he good news is that provincial and municipal governments are beginning to respond to the threats that freshwater systems face. In the last two years, rules regarding usage and pollution of freshwater sources have been tightened.

In 2004, the Guangdong Provincial government set up the Environmental Protection Programme to incorporate environmental sustainability in urban and industrial planning. Some municipal governments have invested in anti-pollution measures. In 2007, the six provinces within the Pearl River Basin



©WWF-Canora Michael Gunther

implemented a fishing moratorium in April and May, and have introduced fish restocking programmes. Large-scale surveys are being done by the authorities, which will provide useful information to aid conservation efforts. WWF Hong Kong has assisted by providing wetland management training.

But the threats to freshwater biodiversity and freshwater sources are complex and interrelated. Balancing the needs of a booming population and a rapidly growing economy with ecological sustainability isn't easy. It requires a coordinated effort by governments, industry and the population.

Some examples of how this can work already exist in China. In 2005, provincial governors and officials responsible for water, the environment, forests and agriculture, signed the Yangtze Declaration in Wuhan. They agreed that urgent action was needed to add sustainability to the development plans in the Yangtze River with an integrated management approach. A similar effort is needed in the Pearl River Basin.

The need for action is pressing. Water shortages, reduced crop production and devastated fisheries are the sure result of inaction on issues related to freshwater biodiversity, and only a coordinated effort can solve these interrelated problems. The need for water affects everyone, and so everyone should be taking action.

To learn more, please visit [http://panda.org/about\\_wwf/what\\_we\\_do/freshwater/our\\_solutions/rivers/irbm/index.cfm](http://panda.org/about_wwf/what_we_do/freshwater/our_solutions/rivers/irbm/index.cfm).

你也可為拯救珠江三角洲出一分力

# You can help **save** the Pearl River Delta



**確**保淡水充足的供應是全球性問題。然而，面對淡水需求持續增加，我們還未找到適當的解決方法。香港大部分淡水來自珠海流域，只有20至30%來自本地。過度耗用及經濟發展帶來的破壞，將影響香港的淡水供應。

拯救淡水系統及生物多樣性其中一個最有效的方法，就是節約用水。就從今天起，緊記以下四用原則，一同節省食水：

**減少使用：**不要過量用水。刷牙時，請先盛滿一杯水，不要一直扭開水龍頭，這樣做每年可節省多達4,000公升用水。盡量儲滿一機衣服才清洗。盡量淋浴，不要浸浴，塗抹肥皂時應關上水龍頭。盡量不要讓水流過不停，並時刻確保水龍頭關好。

**循環再用：**請充分利用食水，不要隨便倒掉。使用抽濕機中和清洗蔬菜後的水澆灌盆栽。

**翻新使用：**採用最新的節約水技術，將抽水馬桶的舊式大容量貯水缸，更換成有兩套沖水系統的貯水缸；安裝低流量水龍頭和花灑頭，省水又省錢。

**維修再用：**水喉滴水不但浪費食水亦浪費金錢。可在馬桶貯水缸內加進數滴食用色素，若盥盆出現顏色，代表貯水缸漏水。仔細查閱水錶，以檢查其他地方的漏水情況，漏水的水龍頭一天可以浪費400升食水。

淡水系統的生物多樣性對我們的生活及健康非常重要。作為負責任的市民，應立即行動，節約用水。事不宜遲，就由今天開始，為未來創造更美好的生活環境！

**F**inding enough freshwater is a worldwide problem. And yet the demand for freshwater continues. In fact it is increasing. The combined pressures of heavy freshwater usage and damage from economic development will impact Hong Kong – most of our freshwater comes from the Pearl River Basin. Just 20 to 30 percent come from local sources.

One of the best ways to help save freshwater systems and biodiversity is to conserve water. Start following the four Rs to save water today:

**Reduce:** Don't use more water than you need. When brushing your teeth, use a cup of water instead of rinsing under running water – you'll save up to 4,000 litres a year. Don't use washing machines unless full. Take showers instead of baths, and when soaping, turn the water off. Avoid fully opening a tap when possible. Be sure to always turn off the tap.

**Recycle:** Don't just pour water away if it can be reused. Use water from dehumidifiers or from washing vegetables for plants.

**Retrofit:** Get the latest in water-saving technology. Replace older, large volume toilet cisterns with a two flow-flushing cistern. Install low-flow taps and shower heads. You'll save water and money.

**Repair:** Leaks cost water and money. Check for leaks by putting a few drops of food colouring in the toilet cistern. If it appears in the toilet bowl you have a leak. Other leaks can be detected by careful monitoring of the water metre. A leaky tap can waste more than 400 litres of water a day.

Biodiversity in freshwater systems is vital for our survival and wellbeing. Conserving water is the action of a responsible citizen. Don't wait – start improving our future today.



請登入網址 [www.wwf.org.hk/chi/conservation/prd](http://www.wwf.org.hk/chi/conservation/prd)，下載世界自然基金會香港分會的愛普生珠三角保育概況研究報告。你亦可加入本會成為會員或作出捐款，支持世界自然基金會的淡水保育項目，請致電2523 2316或電郵至 [member@wwf.org.hk](mailto:member@wwf.org.hk)，聯絡本會會員部。請將此小冊子轉交朋友傳閱，把這個重要訊息傳遞開去。

To download the WWF Hong Kong Epson Pearl River Delta Scoping Study, visit [www.wwf.org.hk/eng/conservation/prd](http://www.wwf.org.hk/eng/conservation/prd). You can also support WWF freshwater work by becoming a member or making a donation. Please contact the WWF membership department at 2523 2316 or [member@wwf.org.hk](mailto:member@wwf.org.hk). Spread the word – pass this pamphlet on to your friends and share the importance of the issue today.

此印刷品以 FSC 認證紙張和含植物油油墨印刷，包含再造物料。產品組源自良好管理的森林，受控的來源及再循環木材或纖維。This magazine is printed on FSC certified paper, containing recycled materials and using vegetable oil-based inks.