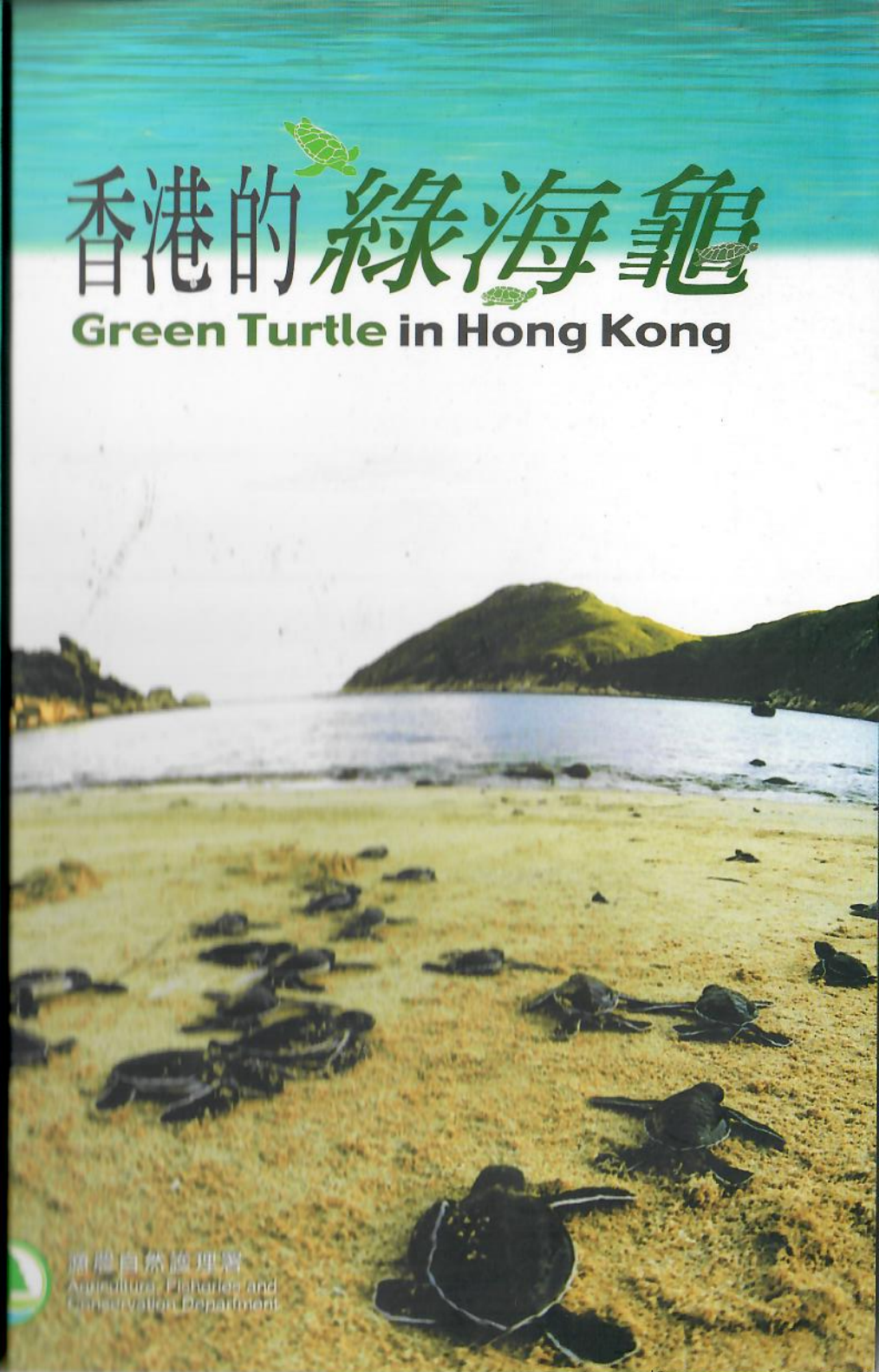


香港的綠海龜

Green Turtle in Hong Kong



漁農自然護理署
二〇〇〇年
Agriculture, Fisheries and Conservation Department
2000



漁農自然護理署
Agriculture, Fisheries and
Conservation Department

香港的綠海龜

Green Turtle in Hong Kong



漁農自然護理署

Agriculture, Fisheries and Conservation Department

內容簡介 INTRODUCTION

由於香港的環境不斷改變，近年已很少發現海龜的蹤跡。時至今日，南丫島的深灣是現存唯一已知的海龜繁殖地。為了保護綠海龜，深灣的沙灘已在一九九九年七月三十日根據〈野生動物保護條例〉被列為「限制地區」，禁止未持有許可證人士在海龜的產卵季節進入或在該區內逗留，以減低遊人對該地方的影響。

本書簡述了綠海龜的生物學資料及綠海龜在本港的情況。此外，亦概述本港有關保護綠海龜的工作。希望籍此令大眾市民認識到保護野生動物及護理大自然的重要性。

Because of the changing environment of Hong Kong, sightings of sea turtles in local waters are becoming rare. At the present, Sham Wan of Lamma Island is the only known existing nesting site of Green Turtles. For the protection of Green Turtles, the sandy beach at Sham Wan has been designated as a Restricted Area on 30 July 1999 under the Wild Animals Protection Ordinance. Entry or staying within the area is not allowed without a permit during the nesting season to minimize the disturbance caused by visitors to the area.

This book briefly describes the biology and local status of Green Turtles as well as the conservation measures being carried out in Hong Kong. It aims at raising public awareness of the importance of wildlife protection and nature conservation.

序

縱然香港高度城市化，市民親近大自然的機會並不缺乏。受到良好保護的郊野公園及海岸公園，是市民在煩囂生活以外舒展身心的好地方。

為了使大家對自然環境有更多的了解，漁農自然護理署與郊野公園之友會合作，編纂了「放眼大自然」系列野外考察指南。本系列以大埔滘自然護理區，香港的海岸公園及海岸保護區為對象，由各方專家，從不同領域撰寫指南，協助讀者發掘自然之奧秘。我們衷心希望各位讀者放眼大自然，更加認識和欣賞大自然之趣。

本系列指南得以成功面世，有賴各方人士盡心盡力支持，謹在此向他們表示謝意。

漁農自然護理署署長
韋徐潔儀 太平紳士
郊野公園之友會主席
詹志勇 教授

FOREWORD

Although Hong Kong is highly urbanized, the citizens are afforded plenty of opportunities to visit the countryside. In fact, the well-protected country and marine parks are the important recreational venues for a myriad of salubrious outdoor pursuits.

To increase the public's understanding of our natural environment, the Agriculture, Fisheries and Conservation Department and the Friends of the Country Parks have jointly published a series of field study guides named "Eyes on Nature". This series hitherto covered different aspects of the Tai Po Kau Nature Reserve and the Marine Parks and Marine Reserves of Hong Kong. Experts were invited to write on the various realms of field study, hoping to assist readers to discover and discern the intricacies and joys of nature. We hope that everyone will broaden their perspective, and in the process can strengthen their understanding and appreciation of our well-endowed natural environment.

We would like to express our gratitude to all who have whole-heartedly contributed to the successful production of this series of field study guides.

Mrs. Lessie WEI

Director of Agriculture, Fisheries and Conservation

Professor C.Y. JIM

Chairman, Friends of the Country Parks

CONTENTS 目錄

Introduction 內容簡介	1
Foreword 序	2-3
Green Turtle 綠海龜	5
Distribution 分佈	6
Diet 食物	7
Habitat 生境	8
Reproduction 繁殖	9
Growth 成長	13
Sea Turtles in Hong Kong 在本港的情況	15
International and Regional Status 國際及地區上的情況	16
Threats 危害海龜的活動	17
Conservation Measures 自然護理工作	19
Legal Protection 有關保護海龜的法例	20
Site of Special Scientific Interest (SSSI) 具特殊科學價值地點	21
Restricted Area 限制地區	21
Wardening 巡邏	24
Management of the Nesting Site 產卵地的護理	24
Artificial Incubation 人工孵化	25
Education and Public Cooperation 教育及市民的合作	29
Report of Sightings 請提供資料，協助保護綠海龜	31
Enquiry 查詢	31
Latest News 最新消息	31



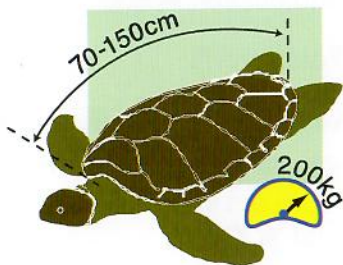
綠海龜 Green Turtle

綠海龜屬於爬蟲綱龜鱉目的海龜科。由於它體內的脂肪透著淺綠色，所以被稱為綠海龜。綠海龜別名海龜、綠蠟龜。學名為 *Chelonia mydas*，英文稱為 Green Turtle。

成年的綠海龜體長七十至一百五十厘米，體重約二百公斤，四肢扁平如槳。龜殼黃綠至黑啡色、闊橢圓形。

Chelonia mydas, commonly called Green Turtle because of its greenish body fat, is one of the species of sea turtles of the Family Cheloniidae, Order Chelonia and Class Reptilia.

Adult has a carapace 70 to 150 cm in length and weighs about 200 kg. Feet are modified into flippers. Carapace is broad and oval-shaped, olive to dark brown.



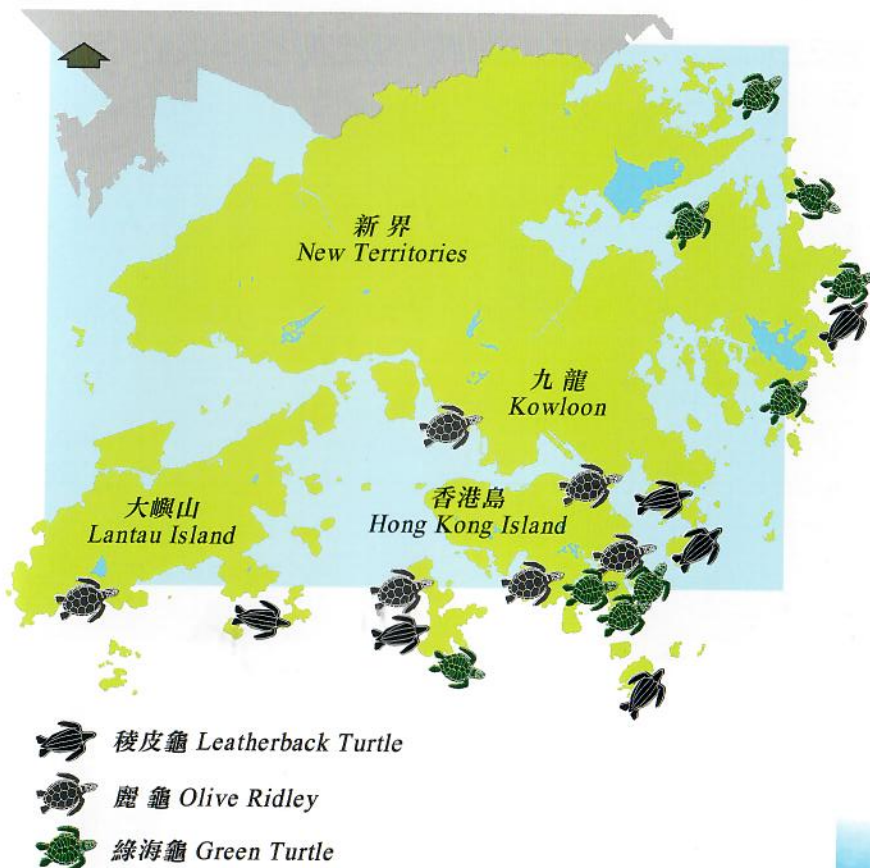
分佈 Distribution

分佈在全世界溫暖的海域，間中在本港東南面及西貢等水域發現。

Found in warm seas all over the world; occasionally seen in the waters of Sai Kung and southeastern region of Hong Kong.

香港水域曾經發現海龜的地點 (1951-1999)

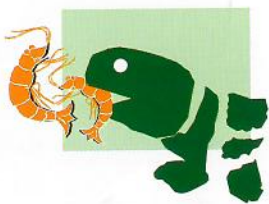
Location map of sightings of sea turtle in Hong Kong waters (1951-1999)





食物 Diet

綠海龜為雜食性動物。成龜的食物以海草及海藻為主，另外也包括一些海洋無脊椎動物如海棉、水母、墨魚及小蝦等。幼龜則比較喜歡捕食細小的海洋無脊椎動物。



Green Turtles are omnivorous. Adults feed mainly on seagrass and seaweed but they also consume marine invertebrates such as sponge, jellyfish, squid and shrimp. Juveniles prefer small marine invertebrates.



生境 Habitat

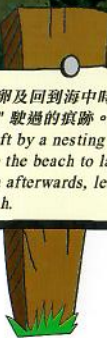
綠海龜棲息於水生植物茂盛的淺海區。在繁殖季節，成龜會離開其棲息地，在茫茫大海中作長途旅程，向繁殖地進發。除了雌龜因產卵而需要回到出生地的沙灘外，綠海龜從巢中孵化後終生都在海洋中生活，不再回到陸地上。

Green Turtles spend most of their time in shallow water feeding grounds with abundant aquatic plants. They will start their long journey in open sea to arrive in their natal beach during the breeding season. Except for nesting females, Green Turtles never return to land once they leave their natal beach after hatching.



母龜爬上沙灘產卵及回到海中時會在沙灘上留下一條像“坦克車”駛過的痕跡。

A "tank track" left by a nesting turtle. The female crawls up the beach to lay eggs and returns to the sea afterwards, leaving a long track on the beach.





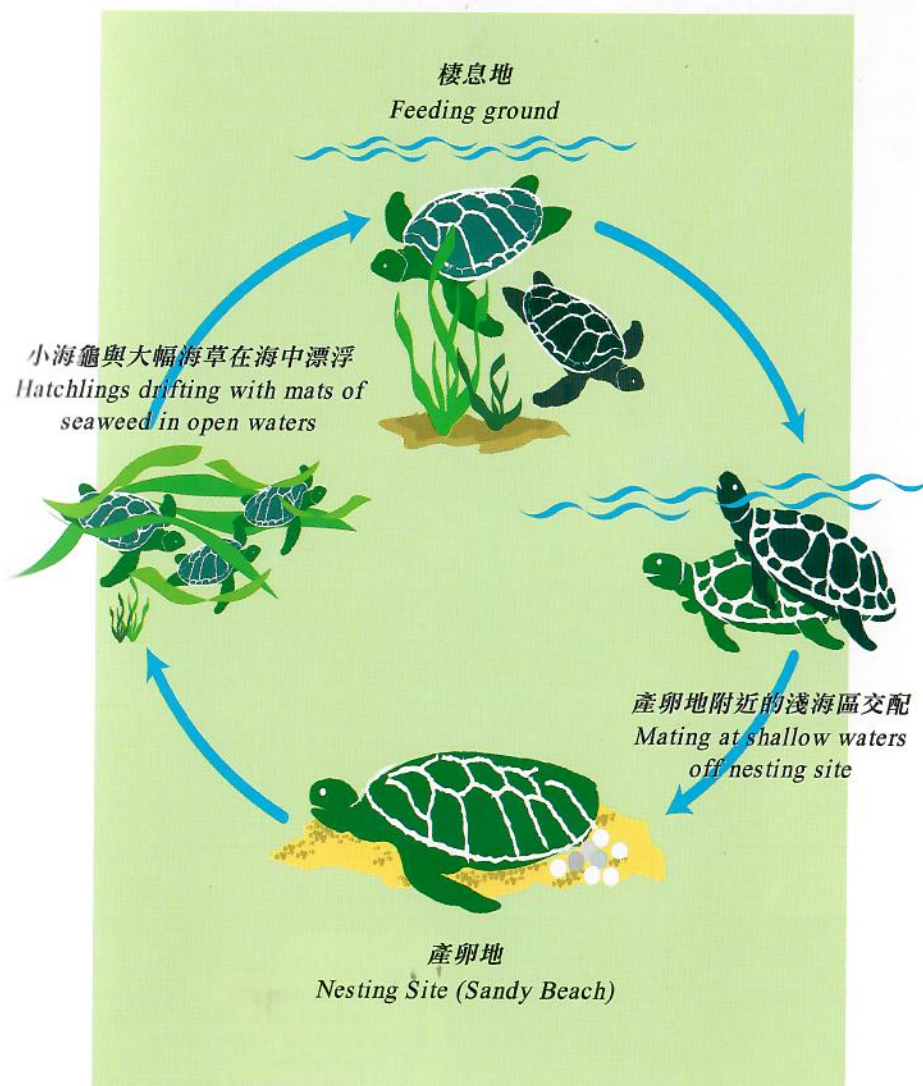
繁殖 Reproduction

在繁殖季節，綠海龜從數千公里以外的棲息地迴游到出生地附近的淺海區交配。母龜會在晚上爬上沙灘，撰擇合適的地點挖洞作巢，產下海龜蛋並以沙覆蓋著，然後回到大海中。

一窩海龜蛋大約有一百多隻，其大小和乒乓球差不多。身型較大的母龜通常會產下較多的蛋。母龜並不是每年都產卵，通常相隔二至三年才產卵一次。但一隻母龜可以在同一個產卵季節產卵數次之多，每次相隔約十二至十四日。在本港，每年的六月至十月為綠海龜的產卵季節。

During the breeding season, mature turtles travel thousands of kilometers from feeding grounds to the shallow waters off the natal beach. Mating takes place in the shallow waters. After mating, females will come ashore at night and look for a suitable site to lay eggs. Nests are simply holes dug on sandy beaches. The females lay eggs inside the holes, cover them with sand again and return to the sea afterwards.

Eggs are about the size of Ping-Pong balls. The clutch size is about 100 eggs. Larger females tend to lay more eggs. Females usually nest every two to three years but a single female can lay three to five times in a nesting season and each time at 12 to 14 day intervals. In Hong Kong, the nesting season lasts from June to October.





正在產卵的雌海龜。
一窩海龜蛋大約有一百多隻，每隻的大小跟
乒乓球差不多，只略為大些少。
A nesting female.
A clutch of some 100 eggs, each of the
size a bit larger than a Ping-Pong ball.



一隻產卵後的雌龜向著大海爬行。海龜
的整個產卵過程通常要花上數小時。
A female is heading back to the
sea after laying eggs. It may
take a nesting female several
hours to complete the egg-laying
process and return to the sea.



成長 Growth

海龜蛋在巢中會自然地孵化，孵化期視乎周圍環境的溫度而定，通常兩個月左右便會孵出幼龜。溫度對海龜的性別有決定性的影響，溫度較高會孵出較多雌性，反之則會孵出較多雄性。初生的幼龜只有五厘米長，它們會在陰涼的晚上傾巢而出，一起努力地奔向大海，然後依附在大幅漂浮的海草上隨水漂流。



小海龜大約一年後便會游到棲息地生活。綠海龜的生長速度緩慢，可能需時二、三十年才達到成熟階段。

Eggs are incubated in the nests naturally. Depending on the ambient temperature, eggs will hatch in about two months. Sex of the hatchlings is dependent on the incubation temperature. Higher temperature produces more females but males predominate when the temperature is lower. Hatchlings are about 5 cm in length. Hatchlings of the whole nest usually emerge at a cool night and head immediately towards the sea. Once there, they drift with large mats of floating seaweed in open waters.

Young turtles move to the feeding ground about a year later. Green Turtles grow slowly and it may take them 20 to 30 years to reach sexual maturity.



幼龜從巢中出來後會立刻奔向大海。
Hatchling, once emerged from
the nest, will head towards
the sea at once.



在本港的情況 Sea Turtles in Hong Kong

在本港海域曾記錄到綠海龜、稜皮龜 (*Dermochelys coriacea*) 及麗龜 (*Lepidochelys olivacea*) 等三種海龜。其中以綠海龜記錄到的次數較多，亦只有綠海龜在本港繁殖。

根據歷史的記載及村民的口述，本港不少僻遠的沙灘，如南丫島的東澳及下尾灣、大嶼山的塘福廟灣及大浪灣，以及港島的大潭灣等，在數十年前都有海龜上岸產卵。由於市區及郊區迅速發展，我們已沒有在這些沙灘發現海龜產卵了。時至今日，南丫島的深灣是唯一已知現存的海龜繁殖地。在一九九八年的產卵季節，我們一共錄得海龜上岸產卵十二次。

Three species of sea turtles have been recorded in Hong Kong waters. They are the Green Turtle, Leatherback Turtle (*Dermochelys coriacea*) and Olive Ridley (*Lepidochelys olivacea*). Most local records are on the Green Turtle which is also the only species bred in Hong Kong.

According to historical records and memory of villagers, sea turtles used to nest in many remote beaches like Tung O and Ha Mei Wan of Lamma Island, Tong Fok Miu Wan and Tai Long Wan of Lantau Island and Tai Tam Bay of Hong Kong Island some decades ago. As a result of rapid urban and rural development and human activities on or near these areas, sea turtles no longer nest in these beaches. Sham Wan of Lamma Island is the only known existing nesting site. There were 12 nesting records at the site during the nesting season of 1998.



從山上俯瞰本港現存的海龜產卵地 - 南丫島深灣。
深灣是一個向南及為群山圍繞的內海灣。
An overlooking view of the existing Green Turtle nesting site - Sham Wan, Lamma Island. Sham Wan is a south-facing sea inlet surrounded by hills.



國際及地區上的情況 International and Regional Status

綠海龜是高度瀕危的動物，已被列入「瀕危野生動植物種國際貿易公約」及「保護遷徙野生動物公約」的附表I中。另外，綠海龜亦是中國「國家重點保護野生動物名錄」中的國家II級保護動物。

本港的深灣及廣東省惠東縣的港口海龜國家級自然保護區是少數現存於南中國海域內的產卵地。

Green Turtle is a highly endangered species listed under Appendix I of CITES¹ and the Bonn Convention². In Mainland China, it is listed as a "Class II Protected Animal" in the "List of State Key Protected Wildlife in China".

Sham Wan and Gangkou National Nature Reserve for Sea Turtle at Huidong, Guangdong Province are among the few remaining nesting sites in Southern China.



¹ CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora



² Bonn Convention: Convention on the Conservation of Migratory Species of Wild Animals



中國惠東縣港口海龜國家級自然保護區。
Gangkou National Nature Reserve for Sea Turtle at Huidong, China.



危害海龜的活動 Threats

由於綠海龜擁有洄游到其出生地產卵的天性，任何改變其產卵地自然環境或阻礙其洄游路線的發展及活動，都有可能令到本地的種群滅絕。海灘的發展、康樂活動或馬路的燈光及噪音均會影響母龜，令母龜放棄上岸產卵。此外，強光亦會令剛孵化的幼龜迷失方向，引致死亡。



堆積在沙灘上的垃圾妨礙母龜登陸沙灘築巢及幼龜前往大海。另外，在繁殖季節中於海灣內活動的船隻及捕魚活動，亦可能妨礙海龜的交配活動及或使海龜意外地被網纏著或為螺旋槳所傷。

在自然環境中，海龜的存活率十分之低。加上海龜通常每二至三年才繁殖一次，因此非法挖取海龜蛋對海龜種群會造成嚴重的傷害。

As Green Turtles invariably return to their natal beach to nest, any development and human activities that will change the natural environment of the nesting site and/or cause obstructions to their migratory route would wipe out the local population. Illumination and noise produced behind the nesting beach as a result of development, recreational activities or roads will deter the females from coming ashore to nest. Also, intensive illumination will disorient the hatchlings from going into the sea, causing deaths to the hatchlings.

Debris washed ashore hinders movement of nesting females and hatchlings. Boating and fishing activities in the sea area during the breeding season may also cause disturbance to their mating activity. They could also be accidentally caught in nets and hit by propellers.

Green Turtles normally have a very low survival rate due to predation and natural mortality and mature turtles only lay eggs every two to three years on the average. As such, poaching of eggs will cause severe population decline.



堆積在沙灘上的垃圾妨礙母龜登陸沙灘築巢。
Debris washed ashore hinders nesting of a female turtle.



自然護理工作 Conservation Measures

由於香港的環境不斷改變，近年已很少發現海龜的蹤跡，因此大家更應珍惜及愛護本港現存的海龜產卵地。若海龜受到干擾而不能在南丫島繼續繁殖，在這一代的成龜死亡後，這種稀有的動物將會在本港消失。

由於海龜的壽命極長，即使它們在過去多年也未能成功地產卵，我們亦很難察覺到海龜的數目有沒有減少。但是，一旦這種情況持續下去，待大部份成龜年老死亡後，本地種群滅絕的情況便會出現。

Because of the changing environment of Hong Kong, sightings of sea turtles in local waters are becoming rare. As such, we must treasure the fact that Green Turtles still nest in Sham Wan of Lamma Island. If nesting of the local population fails due to disturbance or other factors, the local population would eventually become extinct after the death of the adults.

As Green Turtles are long-lived animals, population level might not decline significantly even after many years of unsuccessful nestings. However, once the population trend is established and most adults become senile, population crash and local extinction would be very rapid and irreversible.

要有效地保護海龜，需要從立法及教育這兩方面著手。以下是一些本港現行保護綠海龜的措施：

The following measures show how legislation and education help in the conservation of the Green Turtles in Hong Kong:

有關保護海龜的法例 Legal Protection

香港法例第一七〇章 [野生動物保護條例]

Wild Animals Protection Ordinance Chapter 170

任何人士擁有、售賣或出口於香港取得的海龜或海龜蛋或故意干擾海龜、其巢穴或海龜蛋，均屬違法。一經定罪，最高可被判罰款十萬元及監禁一年。

It is an offence to take, possess, sell or export any sea turtle and its egg or wilfully disturb any sea turtle and its nest and egg. Offenders shall be liable on conviction to a maximum fine of \$100,000 and 1 year imprisonment.

香港法例第一八七章 [動植物（瀕危物種保護）條例]

Animals and Plants (Protection of Endangered Species) Ordinance Chapter 187

任何人士進口、出口或管有海龜或海龜蛋，均屬違法。一經定罪，最高可被判罰款五百萬元及監禁兩年。

Any person who imports, exports, or is in possession of a sea turtle or its egg, shall be liable on conviction to a maximum fine of \$5,000,000 and imprisonment for 2 years.

具特殊科學價值地點 Site of Special Scientific Interest (SSSI)

為了確認其在生態上的價值及重要性，深灣的沙灘及鄰近淺灘在一九九九年六月三日被列為「具特殊科學價值地點」。

The sandy beach and nearby shallow shore at Sham Wan has been listed as an SSSI on 3 June 1999 in recognition of its ecological values and importance.

限制地區 Restricted Area

在一九九九年七月三十日，南丫島深灣的沙灘根據[野生動物保護條例]被列為「限制地區」。每年由六月一日至十月三十一日，即海龜的產卵季節，禁止未持有許可證人士進入或在該區內逗留，違例者可能遭受檢控及罰款五萬元。限制地區的主要入口設有告示牌，清楚顯示限制地區的範圍。

The sandy beach at Sham Wan of Lamma Island has been designated as a Restricted Area under the Wild Animals Protection Ordinance. Any person who enters or stays within this area without a permit during the period from 1 June to 31 October shall be liable on conviction to a maximum fine of \$50,000. Notice boards indicating the boundary of the Restricted Area are erected at the main entry points of the Restricted Area.



為了保護綠海龜，深灣的沙灘在一九九九年被列為「限制地區」。每年由六月一日至十月三十一日，未持有許可證人士禁止進入或在該區內逗留。
The sandy beach at Sham Wan has been listed as a Restricted Area since 1999 for the protection of the Green Turtles. No entry or stay within the area is allowed without a permit during the period from 1 June to 31 October.



巡邏 Wardening

在產卵季節，本署的自然護理員經常在深灣進行日夜巡邏，以保護上岸產卵的綠海龜及海龜蛋。

During nesting season, our nature wardens regularly patrol the beach at Sham Wan day and night to protect nesting turtles and their eggs.



產卵地的護理 Management of the Nesting Site

每年，在產卵季節來臨前，我們都會進行一些護理產卵地的工作，其中包括清除沙灘上一些防礙海龜上岸產卵的雜草、定期監察沙灘的環境以及由有關部門派員清理沙灘上的垃圾等。

Before the onset of nesting season each year, we will carry out conservation management for the nesting site. It includes removal of weeds which hinder turtles coming ashore to nest, regular monitoring of the site's conditions and collection of refuse on the beach by relevant department etc.



自然護理員協助被雜草纏著的海龜回到大海中。
Nature warden helped to free a turtle entangled in weeds going back to the sea.

人工孵化 Artificial Incubation

在一九九八年，我們發現了一窩位於高潮位以下的海龜蛋。由於其位置將受到海水淹蓋，因此我們把海龜蛋移走進行人工孵化。大約兩個月後，成功地孵出八十多隻小海龜，後來全數在深灣放生。另外，我們在產卵季節完結後到深灣進行調查，結果証實了其它在沙灘的海龜蛋亦孵化出小海龜。

In 1998, we have found a nest of eggs located below the high-tide mark and subjected to submersion. The eggs were removed for artificial incubation. More than 80 hatchlings were successfully hatched in about 2 months. The hatchlings were then released back to Sham Wan. We have also carried out a survey after the nesting season and confirmed that eggs were hatched naturally at the nesting site.



1. 進行人工孵化的海龜蛋。
Eggs for artificial incubation.

2. 人工孵化的小海龜破殼而出。
Hatchling of artificial incubation emerges from its shell.



3. 剛孵化的小海龜在臨時的培養箱裏活潑地游泳。
Hatchlings swimming actively in a temporary container.



4. 身長約五厘米的
小海龜。
*A newly emerged
hatchling, about 5
cm in length.*



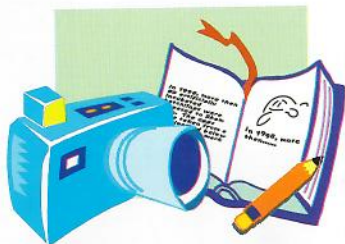
5. 小海龜奔向大海。
Hatchlings striving to crawl to the sea.



6. 從殘留巢中的蛋殼證實其它在深灣
的海龜蛋亦孵化出小海龜。
*The remains of egg-shell confirm that
eggs were hatched naturally at Sham
Wan.*

教育及市民的合作 Education and Public Cooperation

我們相信，要有效地保護海龜，必須得到市民的支持和合作才可獲得成功。因此，我們的自然護理員曾到訪南丫島的村落，派發單張、貼出告示及向村民與遊人解釋保護海龜的原因及重要性。另外，我們亦曾與「香港海洋環境保護協會」及「香港教育學院」合作，讓義工及學生們在海龜的產卵季節做觀察及記錄工作，讓他們親身參與保護海龜的工作。



We believe that it is essential to seek the support and cooperation from the public to effectively protect the sea turtles. In this connection, our nature wardens have visited the villages in Lamma Island, distributed leaflets and posted notices to explain to the villagers and visitors the importance and reasons for protecting the sea turtles. Besides, we had joint programmes with the Hong Kong Marine Conservation Society and the Hong Kong Institute of Education for volunteers and students to participate in the monitoring and study of sea turtles during the nesting season.





請提供資料，協助保護綠海龜 Report of Sightings

市民如欲提供有關海龜出沒的消息，請致電2150 6990與本署職員聯絡。

Please report sighting of sea turtles by calling us at 2150 6990.



查詢 Enquiry

市民若對以上資料有任何查詢，可以下列方法聯絡我們：

- 致函九龍長沙灣道三〇三號長沙灣政府合署七樓漁農自然護理署濕地及動物護理科；
- 以電子郵件聯絡，郵址為 afcdeng@afcd.gcn.gov.hk；
- 傳真至 2377 4427；或
- 致電 2150 6990 與我們聯絡。

If you have any queries on the information of this leaflet, please:

- Write to the Wetland and Fauna Conservation Division, Agriculture, Fisheries and Conservation Department, 7/F, Cheung Sha Wan Government Offices, 303 Cheung Sha Wan Road, Kowloon;
- E-mail to afcdeng@afcd.gcn.gov.hk;
- Fax to 2377 4427; or
- Phone us at 2150 6990.



最新消息 Latest News

有關綠海龜的最新消息，請留意本署的互聯網網頁。網址為：

For updated information on the Green Turtle, please visit our homepage at:

<http://www.info.gov.hk/afcd>

發現海龜時，請盡可能記錄下列的資料和寄回資料給漁農自然護理署：

A. 地點 _____

B. 時間及日期 _____

C. 數目 _____

D. 外貌特徵

1. 背甲：長度／闊度 長 = _____ 厘米 闊 = _____ 厘米
2. 角質背甲寬闊呈卵形、無突脊？ 是／否
3. 角質背甲闊呈心形、有三條突脊？ 是／否
4. 平滑皮質背甲呈長三角狀、有七條突脊？ 是／否

E. 狀態：

1. 活生／已死？
2. 在沙灘擱淺／在海中漂浮？
3. 若已死，屍體仍新鮮／已腐化？
4. 是／否 正在產卵？
5. 母龜產卵爬行時留下的痕跡：長 = _____ 厘米 闊 = _____ 厘米
6. 前肢有沒有金屬標誌牌？若有，其號碼為：_____
7. 其它資料（如發現地點的環境）：

Please note the following as far as possible when you find a sea turtle and forward the information to the Agriculture, Fisheries and Conservation Department:

A. Location: _____

B. Time and Date : _____

C. Number of Individuals : _____

D. External Features :

1. Carapace : width/length **W =** _____ **cm** **L =** _____ **cm**
2. Carapace broad and oval-shaped, without keels, covered with horny plates? **Yes / No**
3. Carapace wide and heart-shaped, with 3 keels, covered with horny plates? **Yes / No**
4. Carapace elongated and triangular, with 7 keels, covered with smooth skin? **Yes / No**

E. Condition:

1. **Alive / dead?**
2. **Stranded on beach / floating in the sea?**
3. If dead, the carcass is **fresh / decayed?**
4. **Nesting? Yes / No**
5. Tracks left by nesting turtle: **W=** _____ **cm** **L =** _____ **cm**
6. **Metal tag(s) on front flippers?**
If yes, the code is _____
7. **Others such as site description:**

鳴謝

本小冊子由下列機構慷慨贊助印製：

國際獅子總會港澳三零三區

Acknowledgements

The production of this booklets was generously sponsored by

Lions Clubs International, District 303
HK & Macau

