香港泳灘水質

Beach Water Quality In Hong Kong

2001

環境保護署
廢物及水質科
Waste and Water Division
Environmental Protection Department

使命

「使泳灘達致既定的水質指標，從而保障市民的健康和福祉，以及達致各種自然保育目標。」

Mission

" To achieve the water quality objective for bathing beaches that will safeguard the health and welfare of the community and meet various conservation goals."

2001

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In Hong Kong

香港特別行政區政府
環境保護署
廢物及水質科
Waste and Water Division
Environmental Protection Department
The Hong Kong SAR Government

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二零零一年泳灘水質摘要

Summary of Beach Water Quality in 2001

二零零一年，在41個憲報公布的泳灘中，水質達到指標的泳灘共有34個。二零零一年可說是潮濕多雨的一年，夏季月份出現連場豪雨，六月的降雨量不但打破了該月份歷來的記錄，更超逾泳季正常降雨量達40%之多。大雨把泳灘腹地的污染物沖至泳灘，導致水質短暫惡化。受滂沱大雨的影響，合符水質指標的泳灘所佔的百分率，亦由二零零零年的85%稍微下降至二零零一年的83%(圖I)。在41個憲報公布的泳灘中，21個的全年水質級別屬於「良好」、13個屬於「一般」、5個屬於「欠佳」，2個則屬於「極差」(圖II)。

The water quality of 34 out of 41 gazetted beaches had met the water quality objectives for bathing water in 2001. The year 2001 had been a wet year with exceptional heavy rain during the summer months, breaking the monthly rainfall record for June and exceeded the normal range for the bathing season by 40%. Heavy rain would flush pollutants in the beach hinterland into beaches causing temporary deterioration of water quality. As a result of the heavy downpour, the percentage of beaches meeting the Water Quality Objective (WQO) has slightly dropped from 85% in 2000 to 83% in 2001 (Figure I). Among the 41 gazetted beaches, 21 are ranked 'Good', 13 'Fair', five 'Poor' and two 'Very Poor' (Figure II).

The distribution of annual ranks for gazetted beaches in the past ten years is shown in Figure III. The improving water quality trend observed in the late 1990's had stalled in 2001.

The gazetted beaches on the south of Hong Kong Island and the outlying islands such as Lamma Island and Cheung Chau had consistently good water quality. Their weekly grading, which were determined using results

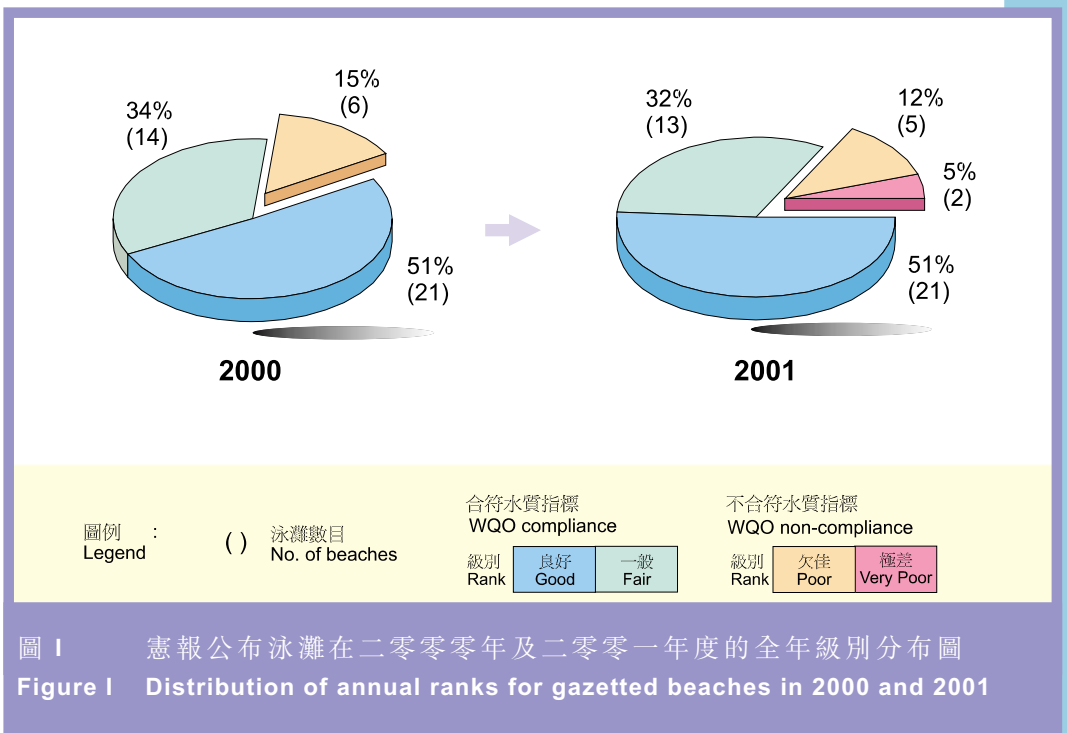


圖 I 憲報公布泳灘在二零零零年及二零零一年度的全年級別分布圖

Figure I Distribution of annual ranks for gazetted beaches in 2000 and 2001

圖III顯示各憲報公布的泳灘於過去十年每年水質級別的分布情況。九十年代後期，泳灘水質日見改善，但到了二零零一年，這個趨勢卻未見持續。

位於港島南面和離島，例如南丫島和長洲的憲報公布泳灘，水質一直保持良好。根據這些泳灘所獲的每周評級（以過去5次的抽樣結果評定），亦顯示泳灘的水質在整個泳季一直保持良好。大雨對泳灘的水質並無明顯的影響。

在水質及每周評級方面，荃灣區的泳灘時有變化。由於這些泳灘的腹地仍未設有排污設施，因此雨水對泳灘的水質造成直接的影響。除了雨水的因素外，泳灘的水質亦受到污染

of the last five sampling occasions, also indicated their consistently good water quality throughout the bathing season. The effect of heavy rain on the water quality of these beaches was not significant.

Beaches with more fluctuations of their water quality and weekly grading were found in the Tsuen Wan District. As the hinterland of these beaches was still unsewered, their water quality was highly susceptible to the effect of rain. Apart from the rainfall effect, the water quality of these beaches was also affected by the polluted Sham Tseng Nullah, and to a small extent by the polluted marine water around the Rambler Channel. Therefore, the water quality of the gazetted beaches along the Tsuen Wan coastal strip was "Poor" or "Very Poor" in 2001.

For the non-gazetted beaches, seven of the nine beaches monitored met the WQO for bathing

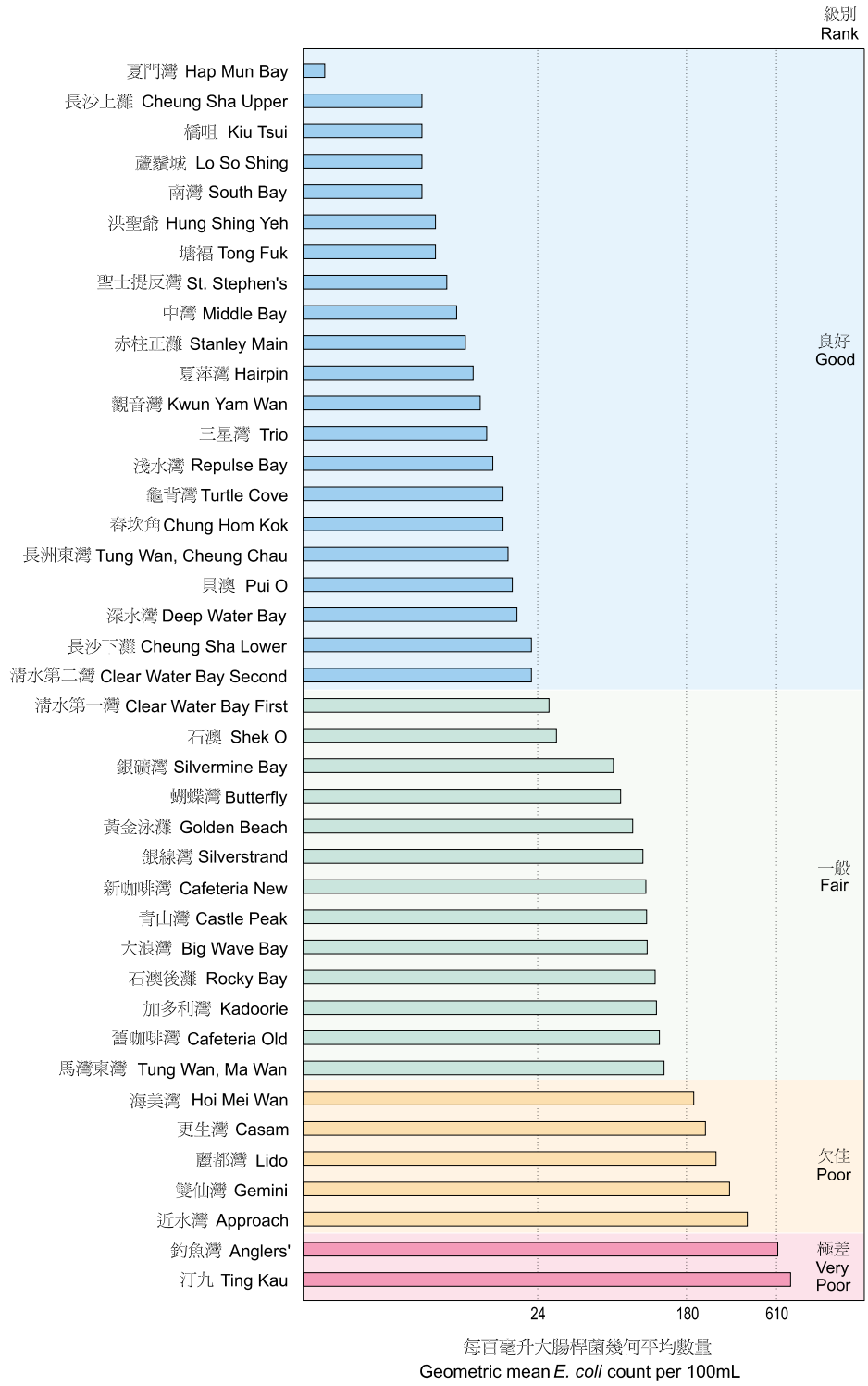


圖 II　憲報公布泳灘在二零零一年度的全年水質評級
Figure II　Annual ranking of gazetted beaches in 2001

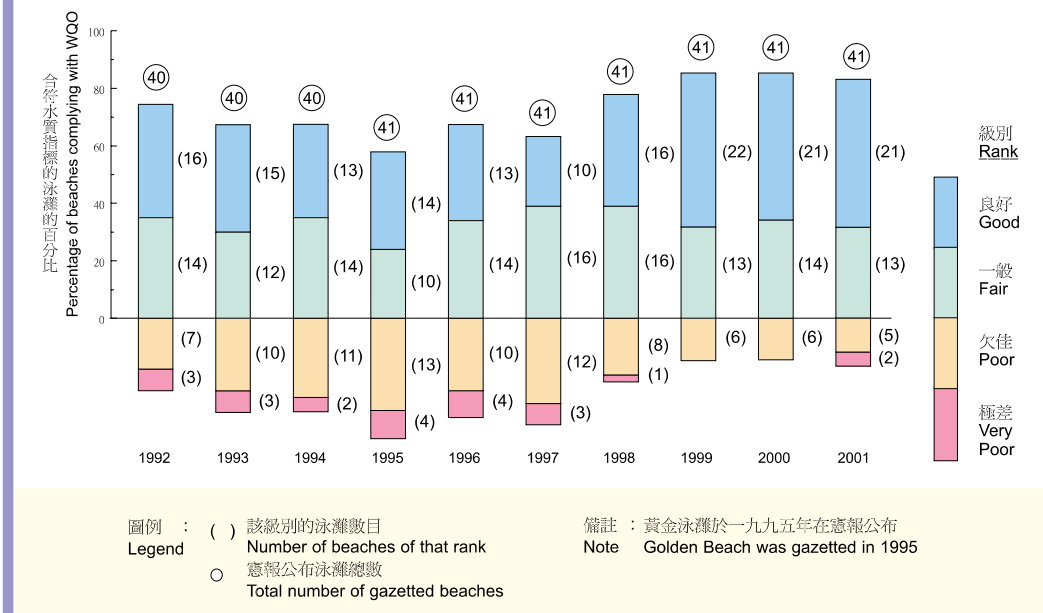


圖 III 憲報公布泳灘於過去十年的每年級別分布圖
Figure III Distribution of annual ranks for gazetted beaches for the past 10 years

的深井明渠，及在較少程度上，受藍巴勒海峽一帶的污染海水所影響。因此，在二零零一年，荃灣沿岸一帶的憲報公布泳灘的水質屬於「欠佳」或「極差」。

至於非刊憲泳灘，在 9 個受監測的泳灘中，7 個的水質達到指標。圖 IV 載有受環保署監測的非刊憲泳灘的全年水質評級。

隨著荃灣沿岸一帶及深井區的排污改善工程在未來數年陸續完成，預期荃灣區泳灘的水質將有所改善。

water. The annual ranks of all the non-gazetted beaches monitored by EPD were shown in Figure IV.

With the progressive completion of the sewerage improvement works along the Tsuen Wan coastal strip and for the Sham Tseng area in the next few years, it is envisaged that the water quality of the Tsuen Wan beaches will improve.

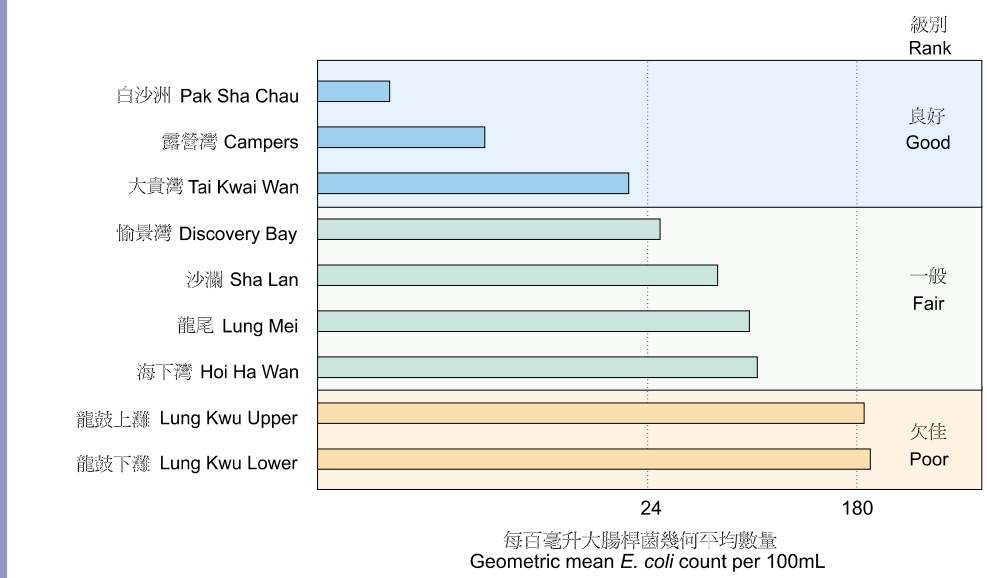


圖 IV　非刊憲泳灘在二零零一年度的全年水質評級
Figure IV　Annual ranking of non-gazetted beaches in 2001

引言
Introduction

1.1　炎炎夏日，前往海灘暢泳是本港市民主要的戶外活動之一。二零零一年，在泳季期間前往泳灘的人數超過 900 萬(見附錄 1)。美麗的泳灘對促進本港旅遊業發揮很大作用。部分熱門的泳灘，例如淺水灣，每年均吸引成千上萬的遊客前往。因此，保持泳灘的水質良好十分重要，可讓市民和遊客享受和欣賞本港泳灘的自然美景。八十年代後期，泳灘水質持續下降。過去十年，環境保護署(簡稱環保署)一直不遺餘力地扭轉這種趨勢。結果，自一九九七年起，本港泳灘的水質已大為改善。

1.1　Bathing at beaches is one of the major outdoor recreational activities for the people of Hong Kong during the hot summer months. In 2001, over 9 million people had visited the beaches during the bathing season (Appendix 1). Our beautiful beaches also play a role in promoting the tourism of Hong Kong. Some popular beaches, such as Repulse Bay, attract thousands of tourists each year. It is therefore important to maintain the good water quality of our beaches so that both the public and tourists could enjoy and appreciate the natural beauty of Hong Kong. The Environmental Protection Department (EPD) has made enormous effort over the last decade to reverse the declining beach water quality trend observed in the late 1980's. As a result, the water quality of Hong Kong beaches has improved significantly since 1997.

1

1.2 This annual report provides an outline of the beach monitoring programme run by the EPD and presents the information on water quality for all the beaches monitored during the bathing season in 2001. The monitoring results and discussions are based on the *E. coli* data collected from March to end of October. The changes in beach water quality, the potential pollution sources and the relevant improvement works will be covered in the following chapters.

1.2 本年報概述環保署推行的泳灘水質監測計劃，並載列二零零一年泳季期間所有受監測泳灘的水質資料。環保署是根據三月至十月底蒐集的大腸桿菌資料得出監測結果及論據。年報以下章節會介紹有關泳灘水質的變化、潛在污染源及相關的改善工程。

從深水灣腹地流至泳灘的小溪
The stream running from the hinterland of Deep Water Bay

渠務署的渠務改善工程
Sewerage improvement works of the Drainage Services Department

泳灘水質監測
Beach Water Quality Monitoring

2.1 自一九八六年起，環保署推行多項措施，致力保障泳客的健康，其中包括推行全面的泳灘水質監測計劃。目前，位於六個不同地區的41個憲報公布泳灘和9個非刊憲泳灘均由環保署監測(見圖2.1)。

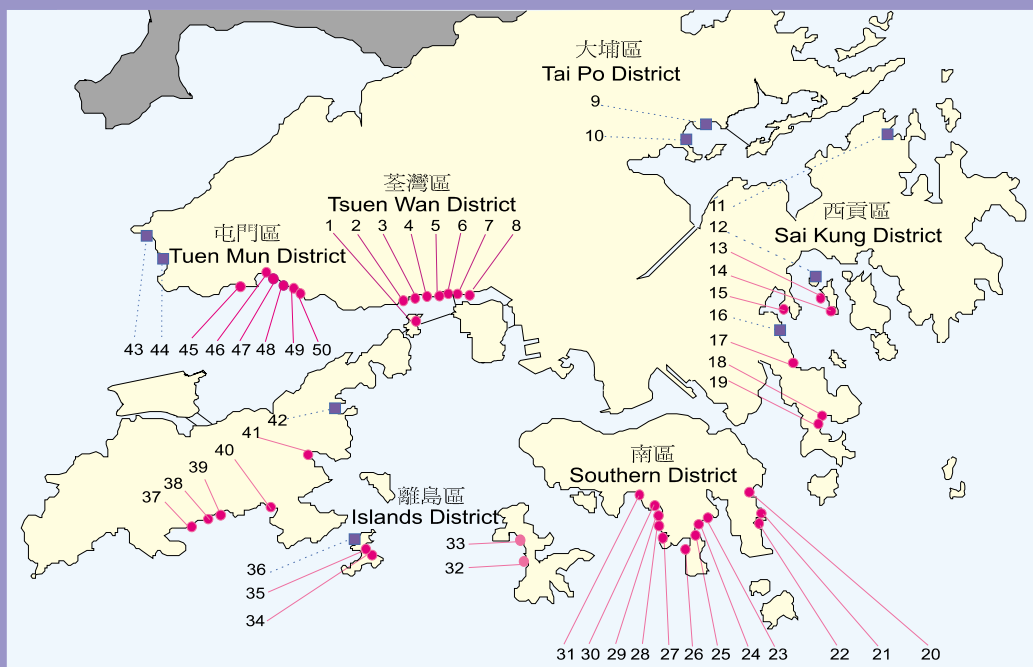
2.2 現時，各憲報公布泳灘由康樂及文化事務署(簡稱康文署)管理。該部門亦負責收集上述泳灘範圍內的漂浮垃圾(見附錄2)。環保署亦監測9個非刊憲泳灘，因這些泳灘比較熱門(例如愉景灣泳灘)或日後有機會成為憲報公布泳灘。

非刊憲泳灘—愉景灣
A non-gazetted beach - Discovery Bay Beach

2.1 Since 1986, EPD has implemented a series of measures to safeguard the health of bathers including a comprehensive programme to monitor the water quality of bathing beaches. Currently, 41 gazetted and 9 non-gazetted beaches located in six different districts are being monitored by EPD (Figure 2.1).

憲報公布泳灘—蝴蝶灣
A gazetted beach - Butterfly Beach

2.2 The gazetted beaches are managed by the Leisure and Cultural Services Department (LCSD) which is also responsible for the collection of floating refuse within the gazetted beach area (Appendix 2). Nine non-gazetted beaches are also monitored by EPD because of their popularity (e.g. Discovery Bay Beach) or their potential to be gazetted in the longer term.



荃灣區
Tsuen Wan District

1. 馬灣東灣 Tung Wan, Ma Wan
2. 釣魚灣 Anglers'
3. 雙仙灣 Gemini
4. 海美灣 Hoi Mei Wan
5. 更生灣 Casam
6. 麗都灣 Lido
7. 汀九 Ting Kau
8. 近水灣 Approach

大埔區
Tai Po District

9. [龍尾] [Lung Mei]
10. [沙瀾] [Sha Lan]
11. [海下] [Hoi Ha]

西貢區
Sai Kung District

12. [白沙洲] [Pak Sha Chau]
13. 橋咀 Kiu Tsui
14. 夏門灣 Hap Mun Bay
15. 三星灣 Trio
16. [露營灣] [Campers]
17. 銀線灣 Silverstrand
18. 清水第一灣 Clear Water Bay First
19. 清水第二灣 Clear Water Bay Second

南區
Southern District

20. 大浪灣 Big Wave Bay
21. 石澳後灘 Rocky Bay
22. 石澳 Shek O
23. 龜背灣 Turtle Cove
24. 夏萍灣 Hairpin
25. 赤柱正灘 Stanley Main
26. 聖士提反灣 St. Stephen's
27. 春坎角 Chung Hom Kok
28. 南灣 South Bay
29. 中灣 Middle Bay
30. 淺水灣 Repulse Bay
31. 深水灣 Deep Water Bay

離島區
Islands District

32. 蘆鬚城 Lo So Shing
33. 洪聖爺 Hung Shing Yeh
34. 觀音灣 Kwun Yam Wan
35. 長洲東灣 Tung Wan, Cheung Chau
36. [大貢灣] [Tai Kwai Wan]
37. 塘福 Tong Fuk
38. 長沙上灘 Cheung Sha Upper
39. 長沙下灘 Cheung Sha Lower
40. 貝澳 Pui O
41. 銀礦灣 Silvermine Bay
42. [愉景灣] [Discovery Bay]

屯門區
Tuen Mun District

43. [龍鼓上灘] [Lung Kwu Upper]
44. [龍鼓下灘] [Lung Kwu Lower]
45. 蝴蝶灣 Butterfly
46. 青山灣 Castle Peak
47. 加多利 Kadoorie
48. 舊咖啡灣 Cafeteria Old
49. 新咖啡灣 Cafeteria New
50. 黃金泳灘 Golden Beach

圖例：Legend
憲報公布泳灘 Gazetted Beach
[非刊憲泳灘] [Non-gazetted beach]
已裝有防鯊網 Shark-prevention net installed

圖 2.1 香港泳灘位置圖
Figure 2.1 Location of beaches in Hong Kong

2.3 上述50個泳灘的水質全年均受到定期監測，但在夏季的月份，監測次數會相應增加。環保署會透過每周的新聞稿、泳灘水質查詢熱線及互聯網等不同渠道，向公眾發布監測結果。

水質指標

2.4 自一九九二年起，環保署根據《水污染管制條例》制訂泳灘水質指標，以保障泳客健康。訂立的水質指標是以環保署與本地學術界於八十年代後期進行流行病學研究的結果為基礎。研究結果顯示，在所有糞便指示性細菌中，以大腸桿菌與游泳所引致的發病率關係最為密切，因此是最適宜作為指示性細菌以評估在本港泳灘游泳的健康風險。

2.5 根據水質指標，所有在三月至十月泳季期間採集的樣本，大腸桿菌每百毫升含量的幾何平均值不得超過180個，而每月須最少採集樣本三次，每次相隔大約三至十四天。這項水質指標適用於本港各水質管制區內的泳灘水質附屬區。

採集泳灘水質樣本的器材及工具
Equipment and accessories for beach water sampling

2.3 The water quality of these 50 beaches is monitored regularly throughout the year and at a higher frequency during the summer months. The monitoring results are disseminated to the public through various channels such as the weekly press release, beach water quality hotline and Internet webpage.

Water Quality Objective

2.4 A Water Quality Objective (WQO) for bathing water has been established under the Water Pollution Control Ordinance since 1992 to safeguard the health of bathers. The established WQO is based on the findings of the epidemiological studies conducted in the late 1980s by EPD and the local academics. Results of the study indicate that among all the faecal indicators, *E. coli* has the highest correlation with swimming-associated illness rates and hence is the best faecal indicator to estimate the health risks of swimming at the beaches of Hong Kong.

2.5 The WQO states that the level of *E. coli* should not exceed 180 per 100mL calculated as the geometric mean of all samples collected during the bathing season from March to October. Samples should be taken at least three times a month at intervals of between 3 and 14 days. This WQO applies to the bathing beach subzones of all Water Control Zones in Hong Kong.

泳灘水質監測計劃

2.6 泳灘水質監測計劃推行至今已十六年，並會定期加以檢討，以求更全面保障泳客的健康。計劃是為達到下列目的而設：

- 評估合符水質指標的程度：根據監測資料，當局可決定泳灘的水質是否合符標準。

- 監測泳灘的水質變化：泳灘如受到污染，監測可起示警作用，俾能及早處理可能出現的水質污染情況，以便在問題惡化前，能夠較容易解決。

- 辨識水質有待改善的受污染泳灘：根據監測結果，當局可識別受污染的泳灘，以便按優先次序，採取補救措施，改善泳灘水質。

- 評估消減污染計劃：監測可提供所需的資料，以衡量泳灘水質改善措施的成效，例如提供排污設施或執行有關法例的成效。

量度泳灘水樣本的混濁度
Turbidity measurement of beach water sample

採集泳灘水質樣本
Beach water sampling

Monitoring Programme

2.6 The beach monitoring programme has been in place for 16 years and is constantly reviewed to safeguard the health of bathers. It is designed to serve the following functions:

- To assess compliance with the WQO: Based on the monitoring information, the Authority will be able to determine whether the standard for bathing water is being met.

- To detect any change in beach water quality: Monitoring can provide early warning of beach water pollution so that any potential pollution problem can be resolved more easily at an early stage.

- To identify polluted beaches that need remedial actions: Based on the monitoring results, the Authority can identify polluted beaches and set priorities to take remedial actions for improving the beach water quality.

- To evaluate pollution abatement programmes: Monitoring provides the information needed to determine the efficacy of beach-related improvement measures such as provision of sewerage or enforcement of relevant legislation.

- 決定是否開放泳灘：監測可提供憲報公布泳灘的水質趨勢資料，以便康文署決定是否開放泳灘。

- 讓市民了解泳灘的水質情況：監測有助解答市民查詢，例如「泳灘是否適宜游泳？」。

- To decide on the opening of beaches: Monitoring provides the information on water quality trends for gazetted beaches so that LCSD can decide on the opening of beaches.

- To advise the public on the beach water quality status: Monitoring helps to answer such question from the public as "Is the beach suitable for swimming?"

泳灘 Beach	監測次數 Monitoring frequency	
	泳季 Bathing season	非泳季 Non-bathing season
全年開放的憲報公布泳灘* Gazetted beaches opened all year round*	每周一次 Once per week	每周一次 Once per week
其他憲報公布泳灘 Other gazetted beaches	每周一次 Once per week	每月一至二次 1-2 times per month
非刊憲泳灘 Non-gazetted beaches	每月二至三次 2-3 times per month	每月一次 Once per month

表 2.1 泳灘監測次數
Table 2.1 Beach monitoring frequencies

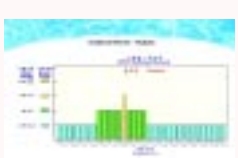
* *深水灣、黃金泳灘及清水第二灣*
Deep Water Bay, Golden and Clear Water Bay Second Beaches

2.7 泳季期間，環保署每星期在各憲報公布泳灘最少進行一次水質監測，而非刊憲泳灘，則每月監測二至三次。環保署亦會隨機選出不同周日，及周末和公眾假期，進行採樣工作，以確保收集的水質資料更為全面。在非泳季日子，全年開放的三個憲報公布泳灘，即深水灣、黃金泳灘及清水第二灣，仍會每星期監測一次，而其餘泳灘則每月最少監測一次。泳灘的採樣監測次數簡列於表 2.1 。

2.7 All the gazetted beaches are monitored at least once per week while the non-gazetted beaches are monitored at 2-3 times per month during the bathing season. Samples are collected on random days including weekends and public holidays to ensure that the water quality information collected is not biased. During the non-bathing season, the three gazetted beaches, viz. Deep Water Bay, Golden and Clear Water Bay Second Beaches which are opened all year round will also be monitored once per week, while all other beaches are monitored at least once a month. The sampling frequencies are summarized in Table 2.1.





抽取泳灘水樣本
(樣本保持在4°C)
Beach Water Sample Collection
(Samples kept at 4 °C)

現場監測
(含氧量、水溫、天氣及泳灘狀況)
***In-situ* Measurement**
(Dissolved oxygen, water temperature, weather and beach condition)

六小時內
Within 6 hours

細菌分析
Bacteriological Analysis

薄膜過濾
Membrane Filtration

置於培養基上
Culture on Growth Medium

細菌培養
(保持在 44.5°C 的有氧環境下)
Incubation
(At 44.5 °C in aerobic condition)

18-24 小時 hours

點算大腸桿菌菌落數目
(藍綠色的菌落)
Counting of *E. coli* Colonies
(Greenish blue colonies)

其他測試
Other Testings

1. 酸鹼值 pH
2. 鹽度 Salinity
3. 混濁度 Turbidity

計算大腸桿菌數量
Calculation of *E. coli* Count

數據資料庫
Databank

每周等級/全年級別
Weekly Grade/ Annual Rank

圖 2.2　泳灘監測工作程序
Figure 2.2　The operational procedures of the Beach Monitoring Programme

2.8　每次監測均會在浮波線泳區內水深及腰的位置採集水面下的樣本，以分析大腸桿菌含量及量度酸鹼值、混濁度及含鹽量。環保署人員亦會採用便攜式分析器即場量度水溫及含氧量，同時記錄即日的天氣和泳灘狀況，包括任何不尋常情況。泳灘監測的工作程序見於圖 2.2 。

泳灘評級制度

2.9　環保署訂立了兩套泳灘評級制度，即全年級別制及每周等級制，分別評估全年泳灘水質及在泳季期間向公眾提供及時和最新的泳灘水質資料。兩套評級制度亦分別反映長期和短期的細菌水質變化趨勢，並根據泳灘海水的細菌含量，把泳灘分為四個類別。

全年級別制度

2.10　全年級別制度反映泳灘於整個泳季的平均水質。泳灘每年所獲的全年級別是按三月至十月泳季期間採樣錄得的大

2.8　Subsurface seawater samples are collected from the bathing area within the boom at thigh to waist water depth for *E. coli* analysis and measurement of pH, turbidity and salinity. Water temperature and the dissolved oxygen content are measured on site using portable analyser. Weather and beach conditions including any abnormal observations are recorded. The operational procedures of the monitoring programme are depicted in Figure 2.2.

Beach Rating Systems

2.9　EPD has developed two rating systems, viz. the annual ranking and weekly grading systems, in order to assess the annual beach water quality and to provide timely information on the latest beach water quality to the public during the bathing season respectively. They reflect the respective long-term and short-term bacteriological water quality trends. Both rating systems classify beaches into four categories according to their bacteriological water quality.

Annual Ranking System

2.10　The Annual Ranking System reflects the average water quality of a beach for the whole

腸桿菌含量的幾何平均值評定。泳灘亦根據八十年代後期進行流行病學研究所得與游泳有關的發病率，分為四個級別。泳灘屬「良好」及「一般」級別，表示水質合符指標。全年級別制度簡列於表 2.2 。

每周等級制度

2.11 制訂每周等級制度的目的在於向市民提供最新的泳灘水質資料。泳灘等級是以最近五次採樣錄得的大腸桿菌含量幾何平均值評定。為進一步保障泳客的健康，如採樣錄得的大腸桿菌含量超逾每百毫升 1,600 個的高水平，則不論其幾何平均值如何，泳灘均會評

bathing season. The rank of a beach in each year is determined by calculating the geometric mean *E. coli* level of all samples collected at the beach during the bathing season from March to October. The four ranks correspond to the respective swimming-associated illness rates identified during the epidemiological studies conducted in late 1980s. Both "Good" and "Fair" ranks meet the WQO for bathing water. The annual ranking system is summarised in Table 2.2.

Weekly Grading System

2.11 The weekly grading system is developed to provide the latest information on the beach water quality to the public. The grade of a beach is calculated on the basis of the geometric mean *E. coli* level of the 5 most

級別 Rank	每百毫升大腸桿菌數量* *E. coli* count per 100mL*	輕微疾病率** 〈每千名泳客感染個案〉 Minor illness rate** (Cases per 1000 swimmers)	合符水質指標 WQO Compliance
良好 Good	<=24	UD	合符 Complied
一般 Fair	25-180	<=10	
欠佳 Poor	181-610	11-15	不合符 Not complied
極差 Very Poor	>610	>15	

表 2.2 全年級別制度
Table 2.2 Annual ranking system

* *以泳季期間收集到的所有數據算出的大腸桿菌幾何平均數。*
Geometric mean E. coli count calculated based on all data collected during the bathing season.
** *皮膚及腸胃病*
Skin and gastrointestinal illness
UD *不能驗出*
Undetectable

等級 Grade	泳灘水質 Beach Water Quality	每百毫升大腸桿菌數量* *E. coli* count per 100mL*	輕微疾病率** 〈每千名泳客感染個案〉 Minor illness rate** (Cases per 1000 swimmers)
1	良好 Good	<=24	UD
2	一般 Fair	25-180	<=10
3	欠佳 Poor	181-610	11-15
4	極差 Very Poor	>610 或最近一次讀數 >1,600 or last reading >1,600	>15

表 2.3 每周等級制度
Table 2.3 Weekly grading system

* *除另有闡釋外，大腸桿菌數量是最近五次採樣的大腸桿菌幾何平均數。*
Except as indicated, the E.coli level is the geometric mean of the 5 most recent sampling occasions.
** *皮膚及腸胃病*
Skin and gastrointestinal illness
UD *不能驗出*
Undetectable

定為第四級，屬最差的等級。因此，泳灘等級可反映泳灘在過去數周的短期水質變化趨勢或最近出現水質惡化的情況。每周等級制度簡列於表 2.3 。

泳灘資料的發布

2.12 為方便泳客決定前往哪個泳灘游泳，泳季期間，環保署每星期會在周末之前發布新聞稿，公布各泳灘的等級。由二零零一年的冬季開始，環保署在冬季的月份亦會每星期發放新聞稿，公布各開放憲報公布泳灘的等級。因此，在二零零二年，環保署全年每周均會發放各泳灘所獲等級的新聞稿。

recent sampling occasions. To further safeguard the health of bathers, the worst grade, i.e. Grade 4, is also given to a beach when its last *E. coli* count exceeds a high figure of 1,600 per 100 mL irrespective of the geometric mean. Therefore, a beach grade reflects the short-term water quality trend of the last few weeks or recent deterioration of water quality. The weekly grading system is summarised in Table 2.3.

Dissemination of beach information

2.12 In order to help the bathers to decide on which beach they should go for swimming, the beach grading is released weekly to the public through press release before the weekend during the bathing season. Starting from winter 2001, the grades of the opened gazetted beaches are also released weekly to the public during the winter

2.13 為確保公眾獲得及時的泳灘水質資料，環保署在部門網頁上設有提供最新泳灘水質資料的專題網頁(網址：http://www.info.gov.hk/epd/)。每當獲得最新的泳灘等級，網頁資料便會同時更新。網頁亦載有其他與泳灘有關的資料，如泳灘位置及可供使用的設施等。網頁內容見於圖 2.3 。

2.14 此外，環保署亦設立了泳灘等級查詢熱線(2511 6666)。此熱線與泳灘資料網頁會同步載入最新的泳灘等級資料。泳客可透過熱線，查詢最新的資料。

2.15 在每個開放的憲報公布泳灘，康文署會在告示板上公布最新的每周等級。游泳人士在下水前，可查看告示板上的資料。

months. Therefore, the weekly press release for the grading of beaches will be issued all year round in 2002.

2.13 To ensure the timely information on beach water quality is available to the public, the latest information on beach grades is also disseminated through a dedicated webpage for beach water quality at EPD's website (http://www.info.gov.hk/epd/). The webpage is updated as soon as the latest beach grading is available. Other information related to the beach such as the location of the beach and the availability of beach facilities is also included in this webpage. The information available in the webpage is illustrated in Figure 2.3.

2.14 In addition, a hotline (2511 6666) dedicated for the beach grading has been set up. This hotline will be updated at the same time when the webpage is updated to provide the latest grading information. Bathers may check the latest beach grading through this hotline.

2.15 The latest weekly grade will also be displayed on the beach notice board by LCSD at each of the opened gazetted beaches. Bathers may also check this notice board before swimming.

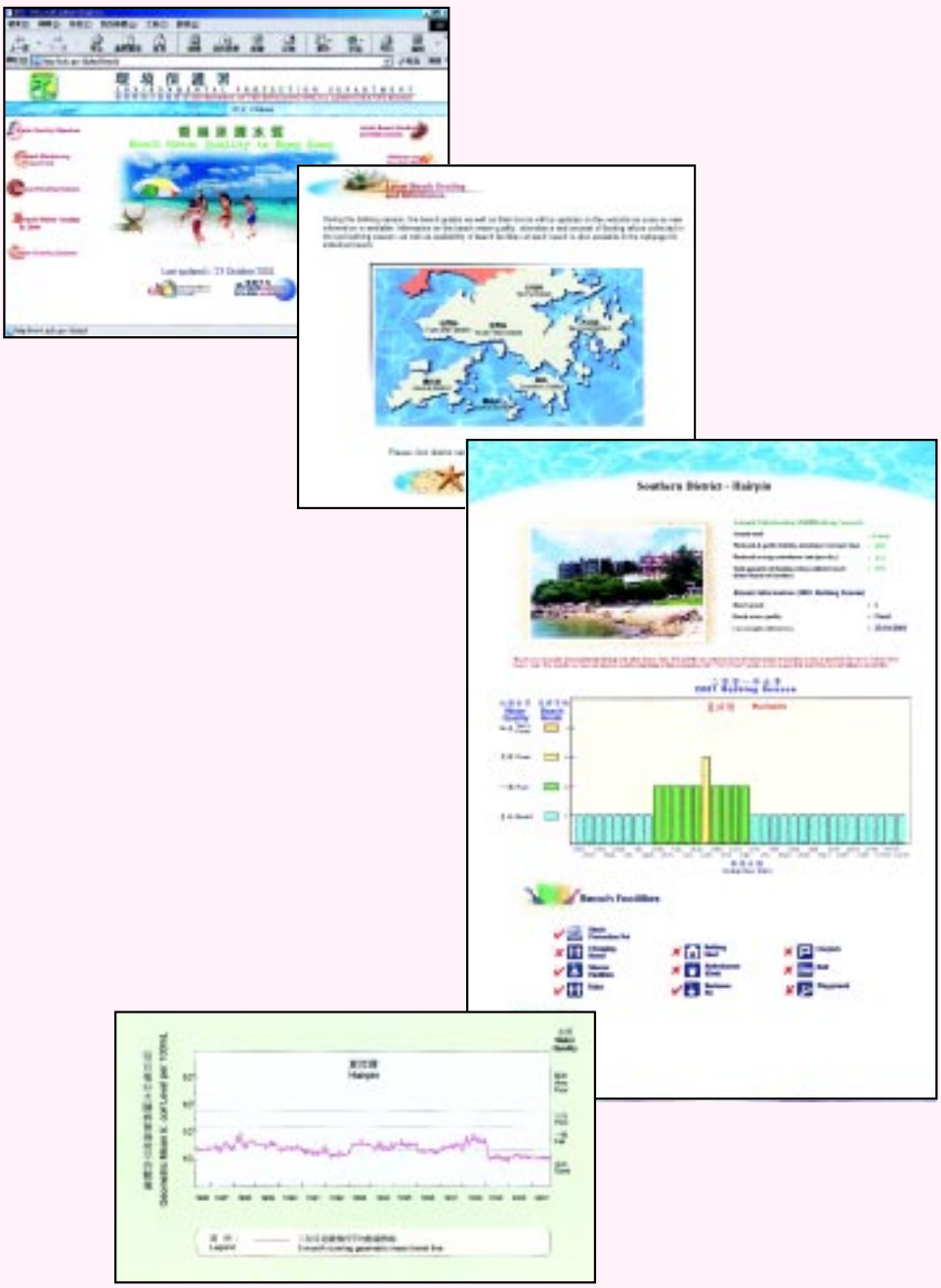


圖 2.3　泳灘水質網頁

Figure 2.3　Webpage on beach water quality

離島區的泳灘
Beaches on Outlying Islands

3.1　在大嶼山有五個憲報公布的泳灘，在南丫島和長洲則各有兩個。二零零一年，上述泳灘全都合符泳灘水質指標。在這九個泳灘中，除了銀礦灣泳灘的全年水質屬「一般」外，其餘泳灘的全年水質均屬「良好」（見圖 3.1）。

3.1　There are five gazetted beaches on Lantau Island, two on Lamma Island and two on Cheung Chau. All of them could comply with the WQO for bathing water in 2001. Among these nine beaches, all except Silvermine Bay Beach, which had "Fair" water quality, were ranked "Good" in 2001 (Figure 3.1).

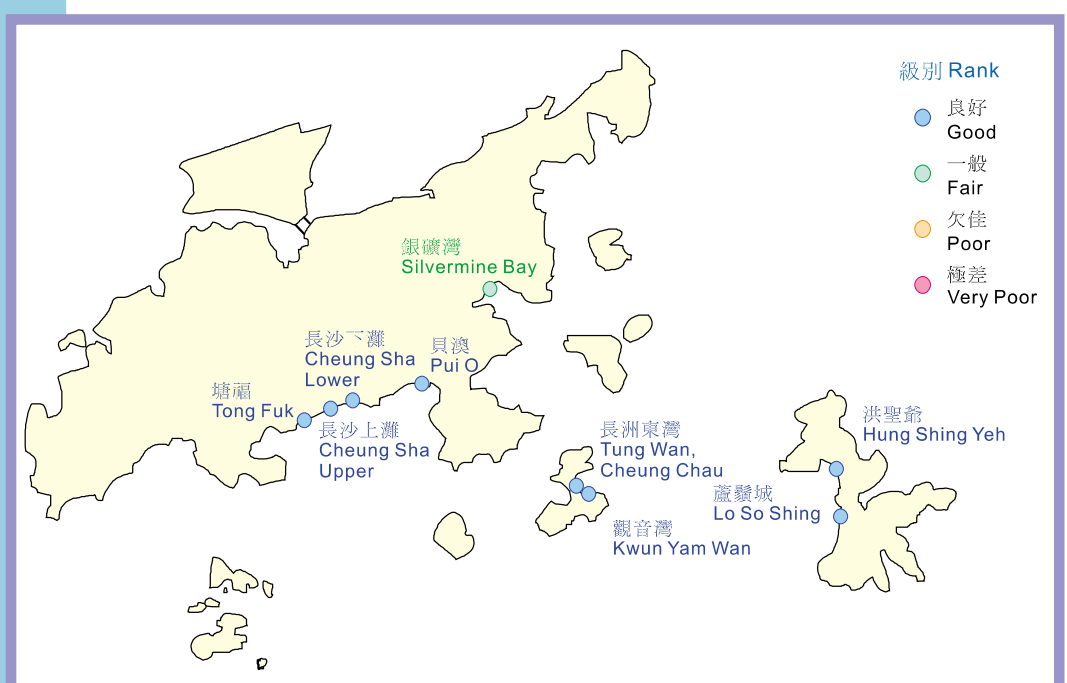


圖 3.1　離島區泳灘在二零零一年度的全年級別
Figure 3.1　Annual ranks of beaches on the Outlying Islands in 2001

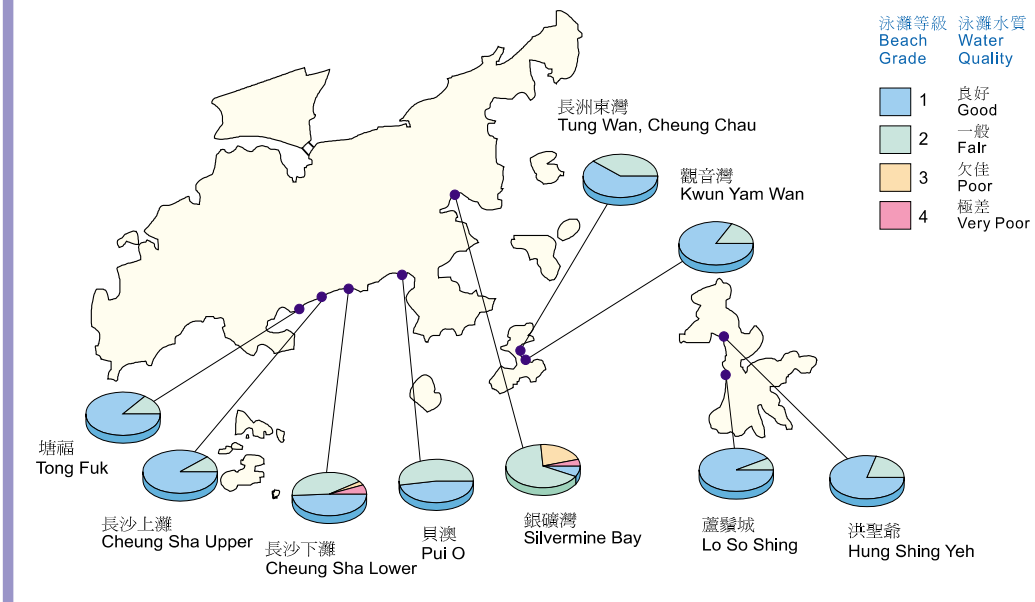


圖 3.2 離島區泳灘在泳季期間的每周等級分布圖

Figure 3.2 Distribution of the weekly grading at beaches on the Outlying Islands during the bathing season

3.2 二零零一年泳季期間，根據泳灘的每周評級，所有憲報公布泳灘的水質均出現若干變動。圖 3.2 顯示二零零一年位於離島的所有憲報公布泳灘的每周等級變化。泳灘的水質錄得變化，主要是大雨把泳灘腹地累積的污染物沖入泳灘所致。

3.3 在離島的九個憲報公布泳灘中，銀礦灣泳灘的水質較易受到雨量影響，因而出現較

銀礦灣泳灘
Silvermine Bay Beach

3.2 During the bathing season in 2001, all the gazetted beaches showed some fluctuations of water quality, which were reflected by their weekly grading. Figure 3.2 showed the variation of weekly grading recorded in 2001 for all the gazetted beaches on the outlying islands. Most water quality fluctuations recorded at these beaches were related to heavy rainfall, which flushed out the accumulated pollutants in the beach hinterland.

3.3 Among the nine gazetted beaches on the outlying islands, the water quality of Silvermine Bay Beach was more susceptible to the rainfall effect and therefore was more fluctuating. The pollution sources of the Silvermine Bay beach are the septic tank and soakaway pit systems of the village

大的變動。銀礦灣泳灘的污染源來自該處村屋所用的化糞池和滲水井系統。假如該等系統缺乏妥善的維修保養，污水便會滿溢，繼而流入附近的河流，最後流向泳灘。上述情況在大雨時變得更為嚴重。這泳灘的其他污染源來自未有敷設排污渠的村屋直接排出的生活污水及從泳灘腹地的滲水井系統流出的滲液。

流入銀礦灣的橫塘河
Wang Tong River leading to Silvermine Bay

houses. If these systems are not properly maintained, sewage may overflow from them and find its way to the nearby rivers leading to the beach. This problem may become more serious during heavy rainfall. Other pollution sources for the beach are the direct discharge of sullage from the unsewered village houses and the seepage from the soakaway pit system in the beach hinterland.

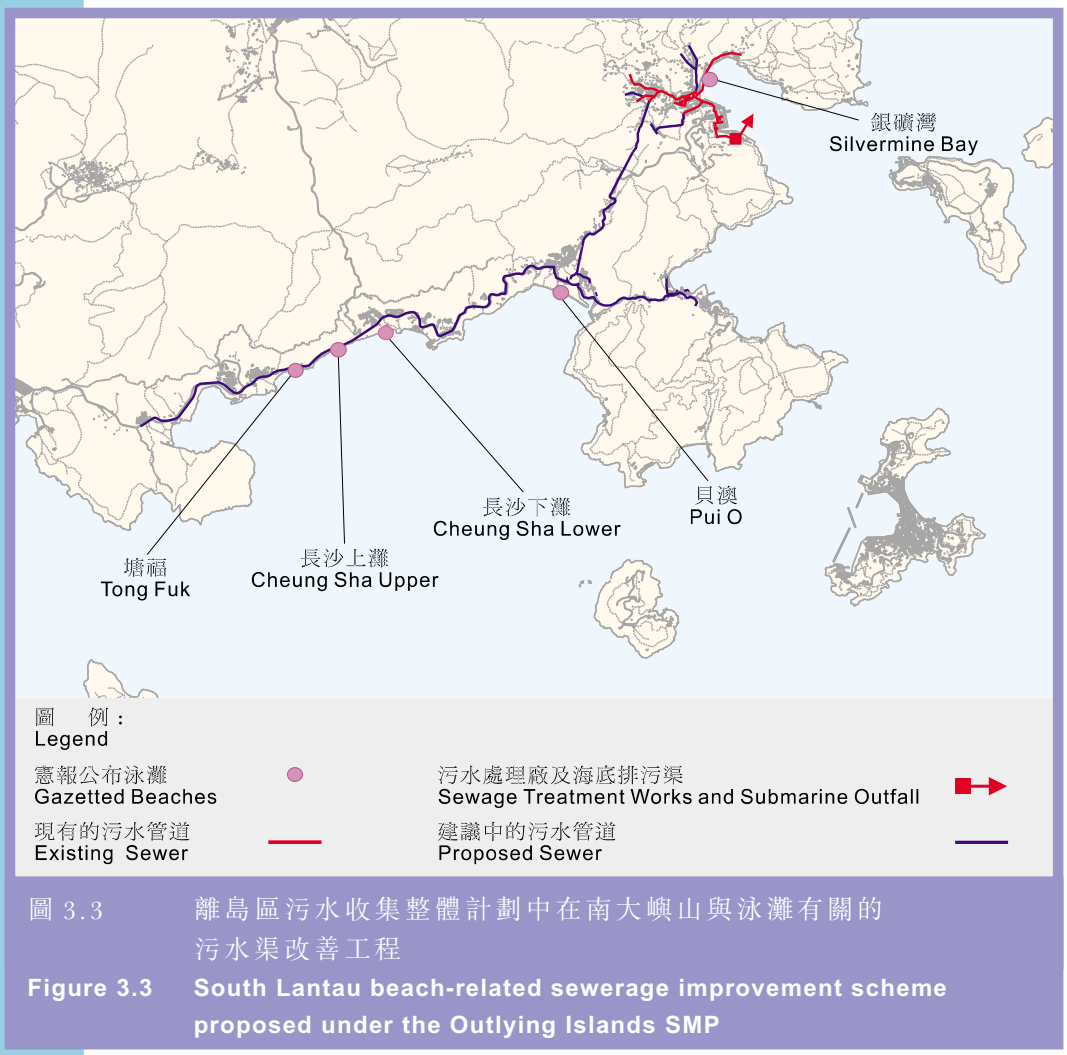


圖 3.3　離島區污水收集整體計劃中在南大嶼山與泳灘有關的污水渠改善工程

Figure 3.3　South Lantau beach-related sewerage improvement scheme proposed under the Outlying Islands SMP

3.4 要解決泳灘的污染問題，每間村屋可接駁至污水渠，以及把生活污水導向腹地的污水渠。當局現正於離島區污水收集整體計劃第二期的檢討中，策劃擴展及提升現時的梅窩排污系統。環保署亦經常派員巡察泳灘腹地，確保該處村屋的化糞池和滲水井系統已作出妥善的維修保養。銀礦灣泳灘的水質自一九九九年起已有改善。預期隨著其他村屋逐步接駁至排污系統，銀礦灣泳灘的水質將會進一步改善。

3.4 The pollution of the beach can be greatly mitigated by the provision of sewer connection to individual village houses and the direction of sullage flows to the foul sewers in the beach hinterland. A programme to expand and upgrade the existing Mui Wo sewerage system is being developed under the Outlying Islands Sewerage Master Plan Stage II Review. EPD had also conducted frequent inspections in the beach hinterland to ensure that the septic tank and soakaway pit systems of the village houses were properly maintained. As a result, the water quality of the Silvermine Bay Beach has improved since 1999. It is expected that the water quality of Silvermine Bay Beach will improve further when the other village houses are gradually connected to the sewerage network.

流入長沙下灘的小溪
Stream flowing into Cheung Sha Lower Beach

3.5 二零零一年四月至六月期間，天氣潮濕多雨，長沙下灘的水質亦錄得變化（見圖3.4）。由於位處泳灘腹地的村屋均使用化糞池和滲水井，每逢大雨，該等設施便可能出現溢流，使泳灘水質短暫惡化。根據離島區污水收集整體計劃第二期(見圖3.3)，大嶼山南面沿岸一帶將設置污水渠，把污水收集後輸送至梅窩污水處理廠處理及處置。當這些排污工程完成後，大嶼山南面的泳灘，包括長沙下灘的水質將會有所改善。

3.5 Fluctuations of water quality were also recorded at the Cheung Sha Lower Beach during the wet weather in April to June 2001 (Figure 3.4). Since the village houses in the beach hinterland are served by septic tank and soakaway pit systems, overflow of the systems may occur during heavy rainfall resulting in transient deterioration of beach water quality. Under the Outlying Islands SMP Stage II (Figure 3.3), sewers will be provided along the southern coast of Lantau Island for collecting and conveying sewage to the Mui Wo sewage treatment works

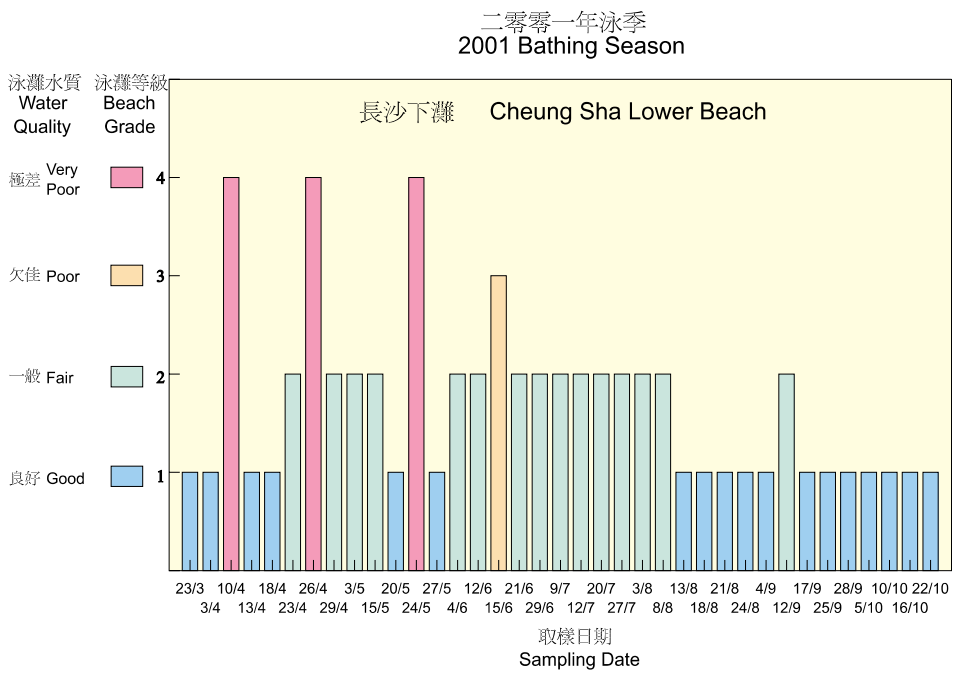


圖 3.4 長沙下灘在二零零一年度泳季期間的水質變化

Figure 3.4 Water quality changes of Cheung Sha Lower Beach in the 2001 bathing season

3.6 為提醒泳客雨量對泳灘水質的影響，康文署已在較易受雨量影響的泳灘，包括銀礦灣泳灘及長沙下灘，張貼勸諭告示(見附錄3)。在停雨後的三日內，市民最好避免到泳灘游泳。

雨天效應告示牌
Rainfall warning notice board

for treatment and disposal. When these sewerage works are completed, the water quality of beaches on the south of Lantau including the Cheung Sha Lower Beach will improve.

3.6 In order to alert the bathers about the rainfall effect on the beach water quality, LCSD has displayed advisory notices at those beaches susceptible to the rainfall effect including the Silvermine Bay and Cheung Sha Lower Beaches (Appendix 3). The public is advised not to swim in beach water for up to 3 days after rain stops.

南區的泳灘
Beaches in the Southern District

4.1 二零零一年，南區泳灘的一般水質均合符泳灘水質指標。區內約有七成半泳灘的全年級別屬於「良好」(見圖4.1)。這些泳灘全都位於港島南面。近年，該處的住宅樓宇已陸續接駁至公共污水渠(見圖 4.2)。

4.1 The general water quality of the beaches in the Southern District met the WQO for bathing water in 2001. About 75% of the beaches in the district were ranked "Good" in 2001 (Figure 4.1). They are all situated on the south of the Hong Kong Island, where new sewers have been provided to serve the domestic buildings in recent years (Figure 4.2).

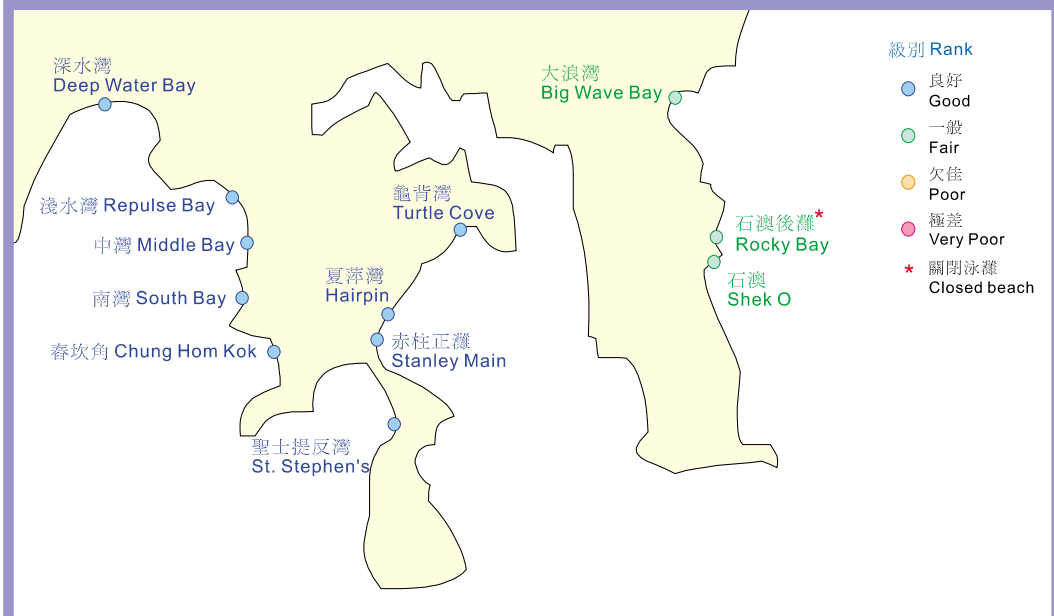


圖 4.1 南區泳灘在二零零一年度的全年級別

Figure 4.1 Annual ranks of beaches in the Southern District in 2001

4.2 這些全年級別屬於「良好」的泳灘，較少受到雨量的影響，從它們獲得良好或一般的每周評級，反映它們的水質較少出現變化(見圖4.3)。在這些泳灘當中，南灣的水質最佳，二零零一年，該泳灘錄得的大腸桿菌全年幾何平均數值為每百毫升5個。

4.3 雖然深水灣泳灘的水質良好，但在二零零一年，泳灘只位列「良好」級別中的末席。該泳灘較易受到雨量影

4.2 These “Good” beaches were also less susceptible to the effect of rainfall and had less fluctuating water quality as reflected by their good or fair weekly grading (Figure 4.3). Among them, South Bay had the best water quality with an annual geometric mean *E. coli* level of 5 per 100mL in 2001.

4.3 Although Deep Water Bay Beach had good water quality, it was at the lower range of the “Good” rank in 2001. It was more susceptible to the effect of rainfall since the wastewater from the beach facilities was treated by septic tank and soakaway pit systems.

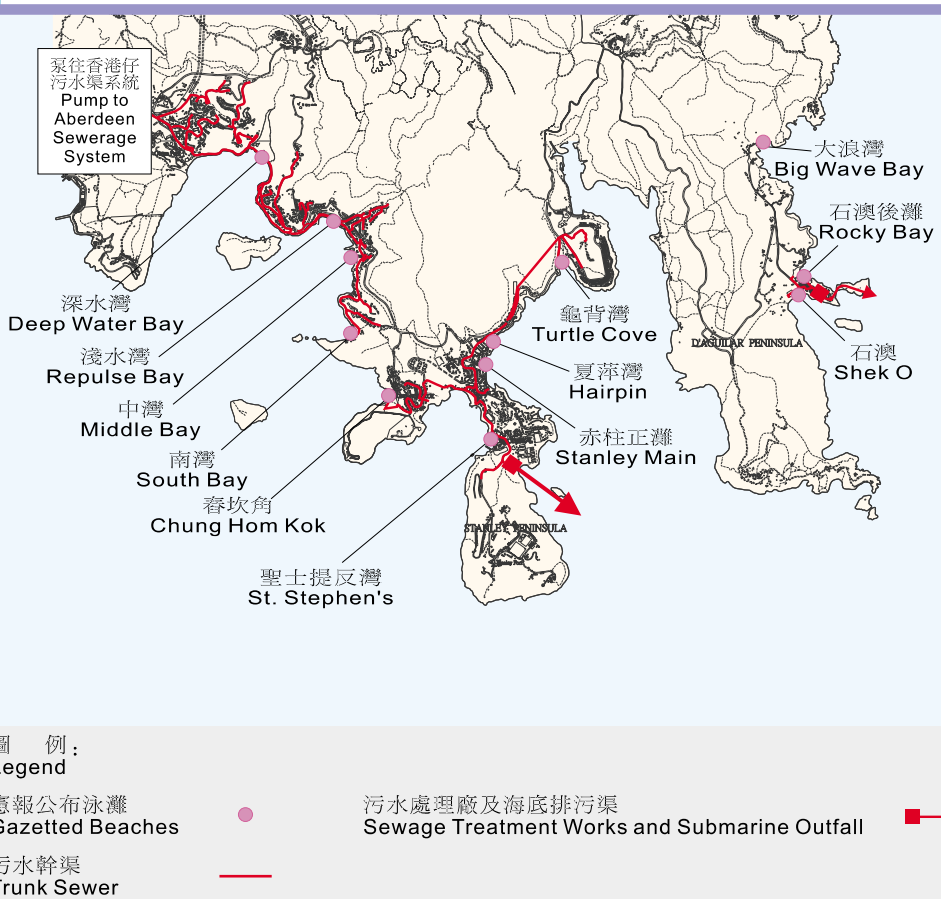


圖 4.2 港島南區污水收集整體計劃提供的污水渠網絡
Figure 4.2 Sewerage network provided under the Hong Kong Island South SMP

位於深水灣新建的污水泵設施
Newly built sewage pumping facility at Deep Water Bay

However, since August 2001, the wastewater from the beach facilities has been diverted to a public sewer, it is expected that the water quality of the Deep Water Bay Beach will further improve.

4.4 The water quality of the beaches on the east of the Hong Kong Island, viz. Shek O, Rocky Bay and Big Wave Bay was not as good as the other beaches on the south. They were ranked "Fair" in 2001. The hinterland of Big Wave Bay is unsewered while those of Rocky Bay and Shek O are served by a combined drainage system and are partially sewered. During heavy rain, pollutants are flushed out from the surface channels and the septic tank/soakaway systems. These three beaches are highly susceptible to the rainfall

響，是因為泳灘設施排放的廢水是經由化糞池和滲水井處理的。然而，從二零零一年八月起，來自泳灘設施的廢水，已轉流至公共污水渠，泳灘水質因而會進一步改善。

4.4 位於港島東面的泳灘，即石澳、石澳後灘和大浪灣的

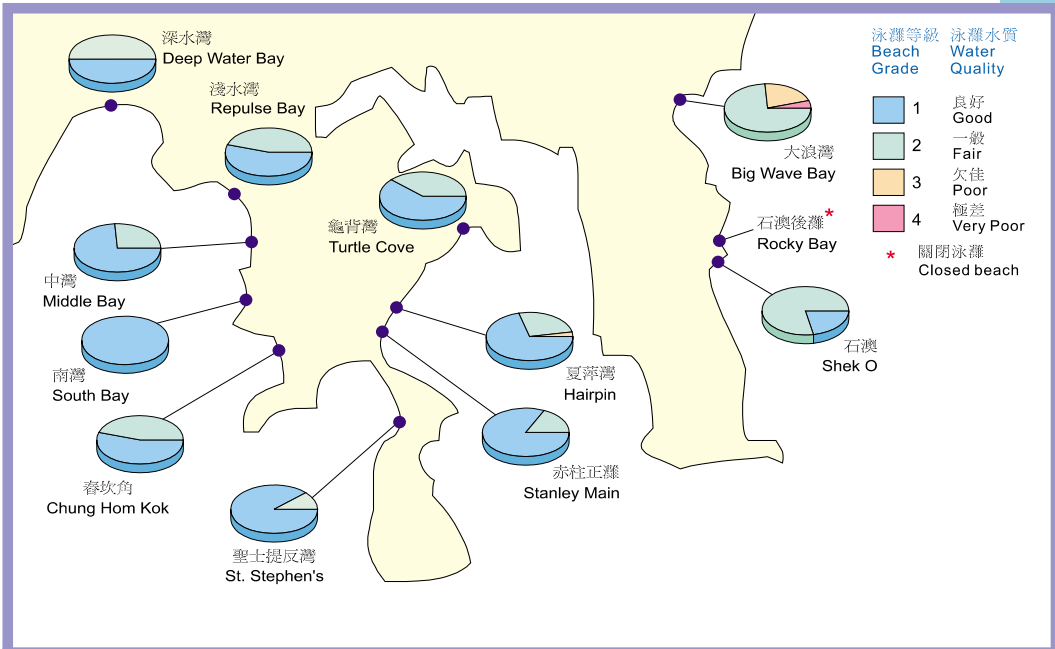


圖 4.3 港島區的泳灘在泳季期間的每周等級分布圖
Figure 4.3 Distribution of the weekly grading at the beaches on Hong Kong Island during the bathing season

水質不及港島南區的泳灘良好。二零零一年，上述泳灘的評級只屬「一般」。大浪灣的腹地仍未敷設排污渠，而石澳後灘及石澳的腹地則使用混合排水系統，只有部份地區接駁至污水渠。大雨期間，污染物由地面明渠及化糞池系統沖出。這三個泳灘極易受到雨量影響，故此泳灘水質在泳季期間時有變化(見圖 4.3)。

4.5 上述三個泳灘的水質亦受到來自藍塘海峽的污染海水影響。藍塘海峽分別受到維多利亞港的污染水流及來自柴灣和將軍澳初步污水處理廠的海底排污渠排出的污水所影響。環保署的海水監測結果顯示，北藍塘海峽的水質欠佳，海水中大腸桿菌的平均含量為每百毫升 1,000 至 10,000 個。不過這些污染源已於二零零一年十一/ 十二月期間淨化海港計劃第一期（見圖 7.4）實施後消除，預期這一帶的水質亦會隨之改善。

effect, resulting in fluctuating water quality during the bathing season (Figure 4.3).

4.5 The water quality of these beaches is also affected by the polluted marine water from the Tathong Channel, which is affected by the polluted flow from the Victoria Habour, and the discharges from the two submarine outfalls of the Chai Wan and the Tseung Kwan O Preliminary Treatment Works respectively. EPD's marine monitoring results indicate that the water quality of the northern Tathong Channel is poor with average *E. coli* levels ranging from 10^3 to 10^4 per 100mL. However, the commissioning of the first stage of the Harbour Area Treatment Scheme in November / December 2001 has removed these pollution sources and water quality in the area should improve as a result.

昂船洲的污水處理廠（淨化海港計劃第一期）
Sewage Treatment Works at Stonecutters Island (HATS Stage 1)

西貢區的泳灘
Sai Kung Beaches

5.1 二零零一年，西貢區的泳灘合符泳灘水質指標。在該區的六個泳灘中，四個的全年級別屬於「良好」(見圖5.1)，它們分別是夏門灣、橋咀、三星灣及清水第二灣。夏門灣和橋咀均位於橋咀洲，與主要陸地分隔，因此該兩處腹地的人口不多。從兩個泳灘均獲得良好的每周評級(見圖5.2)，反映它們的水質較少受到雨量影響。二零零一年，兩者的全年大腸桿菌幾何平均數值均為每百毫升少於5個。

5.1 The beaches in the Sai Kung District continued to meet the water quality objective for bathing water in 2001. Four of the six beaches in Sai Kung were ranked "Good" (Figure 5.1). They were Hap Mun Bay, Kiu Tsui, Trio and Clear Water Bay Second. Both Hap Mun Bay and Kiu Tsui Beaches are located on the Sharp Island separated from the mainland and do not have much residence in their hinterland. They were less susceptible to the rainfall effect as reflected by their good weekly grading (Figure 5.2), and both beaches had the annual geometric mean *E. coli* levels below 5 per 100mL in 2001.

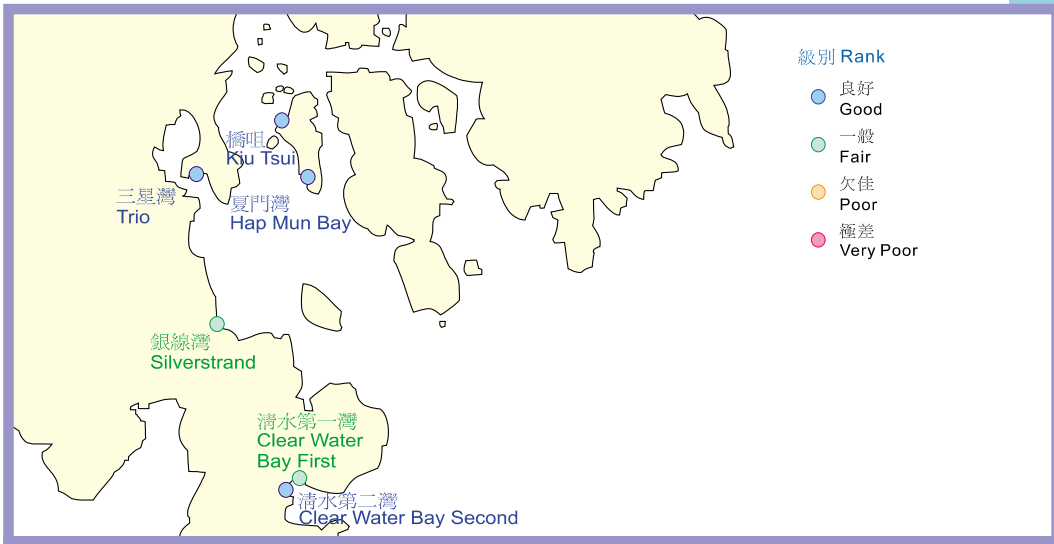


圖 5.1 西貢區泳灘在二零零一年度的全年級別
Figure 5.1 Annual ranks of Sai Kung beaches in 2001

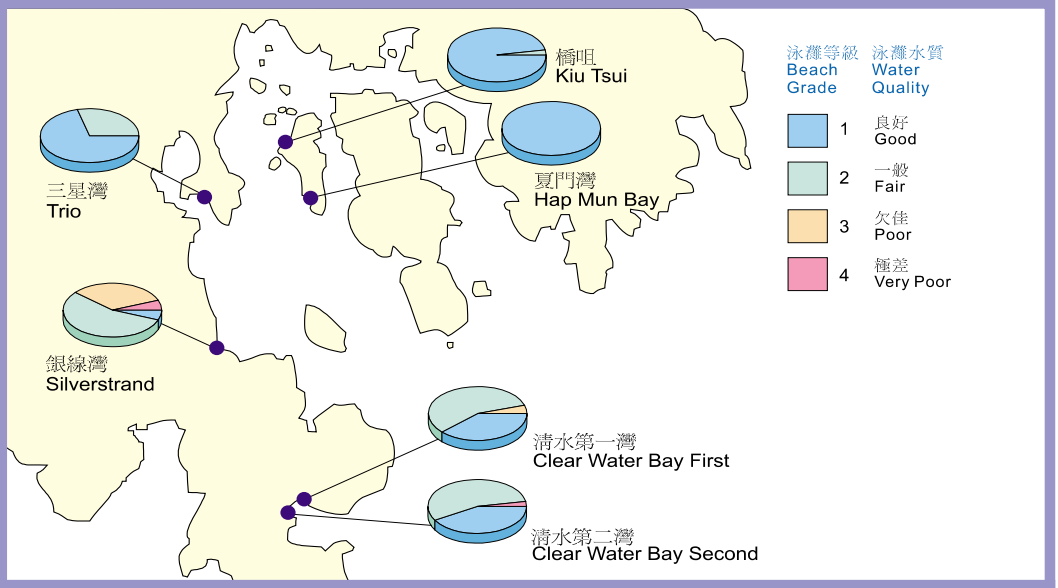


圖 5.2 西貢區泳灘在泳季期間的每周等級分布圖

Figure 5.2 Distribution of the weekly grading at the Sai Kung beaches during the bathing season

5.2 二零零一年，位處牛尾海的銀線灣、清水第一灣及第二灣的級別屬於「一般」或「良好」級別中的末席。從上述三個泳灘所獲的每周評級可見，它們的水質均出現若干變化(見圖 5.2)。當中以銀線灣的水質變化較大，因為該處腹地有較多住宅仍未敷設排污設施。

銀線灣泳灘的腹地
Hinterland of Silverstrand Beach

5.3 在這些泳灘腹地的污水處理設施主要包括私人污水處理廠(簡稱污水廠)或化糞池及滲水井系統。例如在銀線灣地區，這等污水處理設施共有超過 60 個。化糞池的滲液和經位於谷中的污水廠處理的污水都可能流至泳灘及其

5.2 The Silverstrand, Clear Water Bay First and Second Beaches located at Outer Port Shelter were ranked either "Fair" or at the bottom range of the "Good" rank in 2001. All three beaches showed some fluctuations of water quality, as reflected by their weekly grading (Figure 5.2). Among them, the water quality of Silverstrand Beach was more fluctuating because there were many residents in its unsewered hinterland.

5.3 The major sewage treatment facilities in the hinterland of those beaches at Outer Port Shelter are either private sewage treatment plants (STPs) or septic tank and soakaway pit systems. For example, in the Silverstrand area, there are over 60 sewage treatment facilities. Septic tank seepages and treated effluent from STPs in the valleys will find their way to the beach or its adjacent waters. Therefore, if the sewage treatment facilities are not properly maintained, they could cause pollution problems to the beach water. The water quality of these beaches is also

附近水域。因此，假如該等污水處理設施運作欠善，便會對泳灘構成污染問題。這些泳灘的水質也較易受到雨水影響。大雨會把污染物從引集範圍沖出，流入泳灘。在二零零一年，環保署持續把重點放在巡視及執行水污染管制條例上。環保署並推行計劃提高當地居民環保意識，旨在提倡妥善維修區內所有污水處理設施及確保排放合符環境標準。

5.4 為了保護沿牛尾海一帶的水質，當局已在牛尾海污水收集整體計劃中，建議進行工程，為西貢區提供排污設施(見圖 5.3)。第一期的部分工程，即在銀線灣地區興建排污系統的工程，剛已完成。該處的住宅接駁排污設施工程預計在二零零二年展開。當位處腹地的屋宇續漸接駁至公共污水渠後，銀線灣泳灘會變得較少受雨量影響，預期泳灘水質會有所改善。

銀線灣區的渠務工程
Construction of sewerage system for the Silverstrand area

5.5 計劃的第二及第三期工程，包括為沙角尾、蠔涌、大埔仔及井欄樹提供排污設施，將於二零零七年完成。當這些改善工程完成後，牛尾海以至西貢區泳灘的水質將得以保持良好。至於第四期工程的施工計劃則會於較後時間擬定。

more susceptible to the effect of rainfall. Heavy rain will flush out pollutants from the catchment into the beach. In 2001, EPD continued to place emphasis on inspections and enforcement of water pollution control legislations. EPD also implemented a programme to arouse the environmental awareness of local residents aiming at promoting proper maintenance and environmental compliance of all the sewage treatment facilities in the district.

5.4 In order to protect the coastal water quality of Port Shelter, works had been recommended in the Port Shelter SMP to provide sewerage for the Sai Kung District (Figure 5.3). The construction of sewerage system for the Silverstrand area, which was part of the Stage I work, had just been completed. House connections in the Silverstrand area are expected to take place in 2002. As houses in the hinterland are gradually connected to public sewers, the Silverstrand Beach would become less susceptible to the rainfall effect and its water quality is expected to improve.

5.5 The Stage II and Stage III works, including the provision of sewerage to Sha Kok Mei, Ho Chung, Tai Po Tsai and Tseng Lan Shue, will be completed by 2007. When these improvement works are completed, the good water quality of the Port Shelter and the beaches in Sai Kung will be safeguarded. The implementation programme for the Stage IV works will be developed at a later stage.

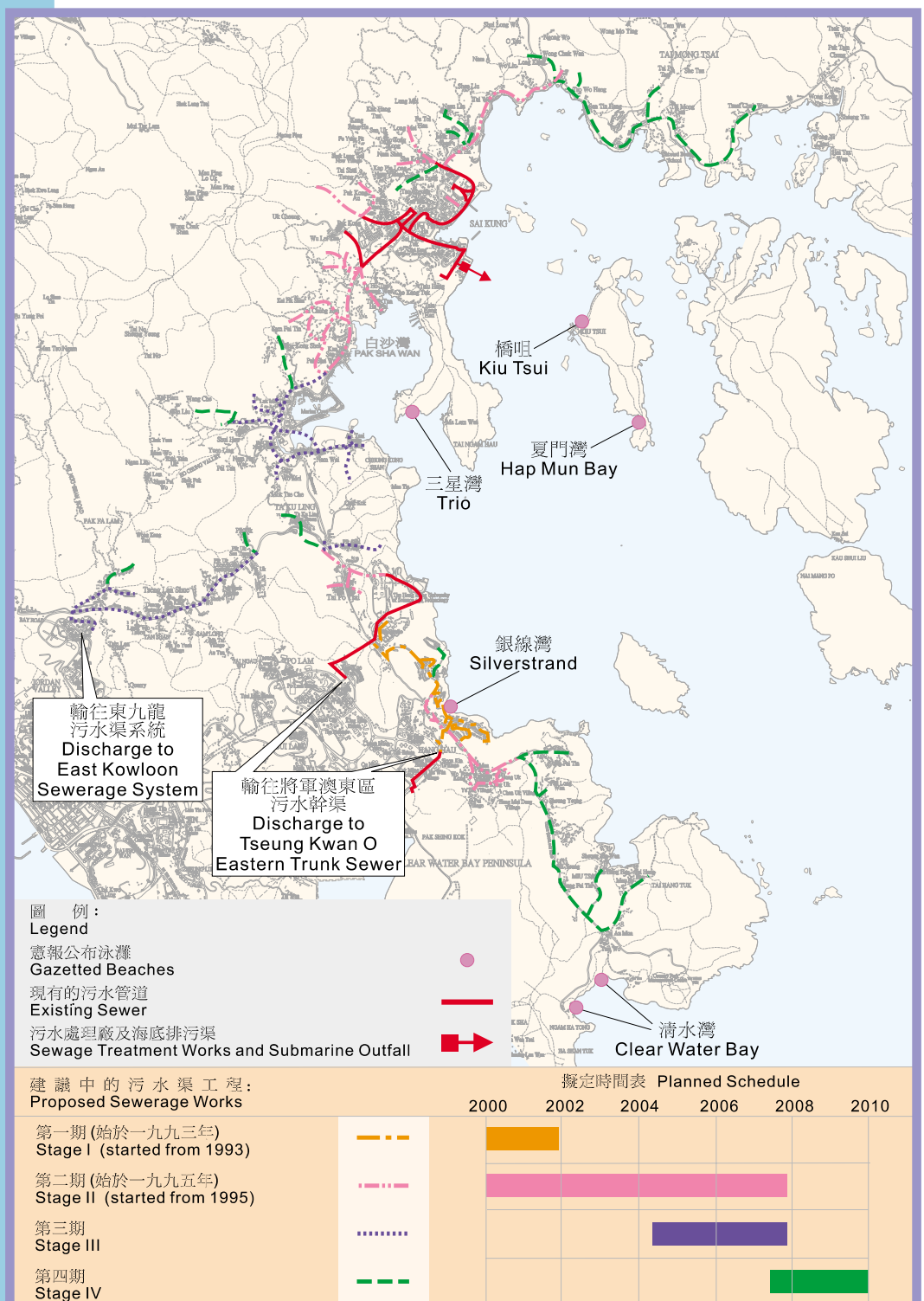


圖 5.3 建議中的西貢區污水渠工程

Figure 5.3 Proposed sewerage works for Sai Kung District

屯門區的泳灘
Tuen Mun Beaches

6.1 自從一九九九年初望后石的較長新海底排污渠啟用後，屯門區六個憲報公布泳灘的水質普遍都改善至「一般」級別，合符泳灘水質指標。二零零一年，屯門區的所有泳灘均維持同一評級，包括已關閉的青山灣泳灘(見圖 6.1)。

6.1 Since the longer replacement submarine outfall at Pillar Point was commissioned in early 1999, the general water quality of all the six gazetted beaches in the Tuen Mun District had improved to the "Fair" rank and met the WQO for bathing water. In 2001, the same rank was maintained at all the Tuen Mun beaches including the closed Castle Peak Beach (Figure 6.1).

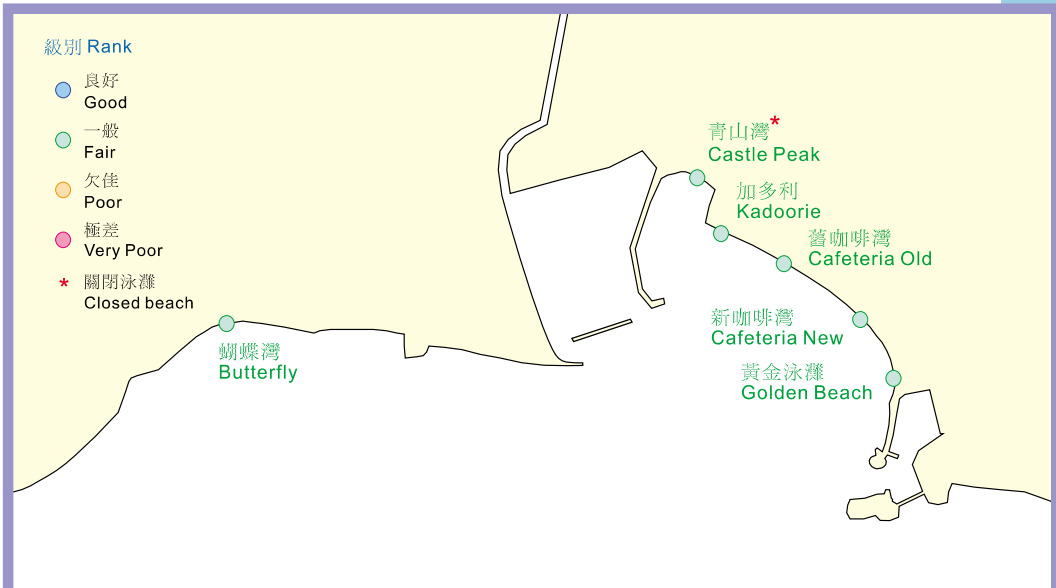


圖 6.1 屯門區泳灘在二零零一年度的全年級別
Figure 6.1 Annual ranks of Tuen Mun beaches in 2001

6.2　二零零一年，區內五個開放的泳灘的水質均出現若干變化。當中，蝴蝶灣泳灘及黃金泳灘的水質較好，較其他泳灘出現較少變化。雖然這兩個泳灘亦是較易受到雨量影響，但下雨後水質亦沒出現嚴重惡化。從它們所獲的每周評級可見此點(見圖 6.2)。

6.3　屯門區其餘 3 個開放的泳灘，即加多利灣、新舊咖啡灣的水質均出現較大變化，這三個泳灣的每周等級亦曾偶被評為「極差」(見圖 6.2)。由於這些泳灘的腹地的住宅及泳灘設施已接駁至公共污水渠，這些泳灘的水質出現變化主要是由於大雨時屯門河的污染物隨雨水沖下，以及從青山灣避風塘沖出所致，而在較少程度上，亦與屯門區的海洋背景水質有關。

屯門河
Tuen Mun River

蝴蝶灣泳灘
Butterfly Beach

6.2　The five opened beaches in the district showed some fluctuations of water quality in 2001. Among them, Butterfly and Golden Beaches had comparatively better and less fluctuating water quality than the others. Though they were also susceptible to the rainfall effect, the deterioration of water quality after rain was less severe. This was also reflected in their weekly grading (Figure 6.2).

6.3　The other three opened beaches in Tuen Mun viz. Kadoorie, Cafeteria New and Cafeteria Old, showed greater fluctuations of water quality, occasionally very poor weekly grading had been recorded (Figure 6.2). As most domestic premises and beach facilities in the hinterland of these beaches were already connected to public sewers, the fluctuations of water quality at these beaches were most likely related to pollutants flushed down from the Tuen Mun River and the Castle Peak Typhoon Shelter during heavy rain, and to a lesser extent, the marine background of the Tuen Mun area.

6.4　After the completion of related improvement works recommended under the Tuen Mun SMP (Figure 6.3) and through EPD's enforcement efforts, the

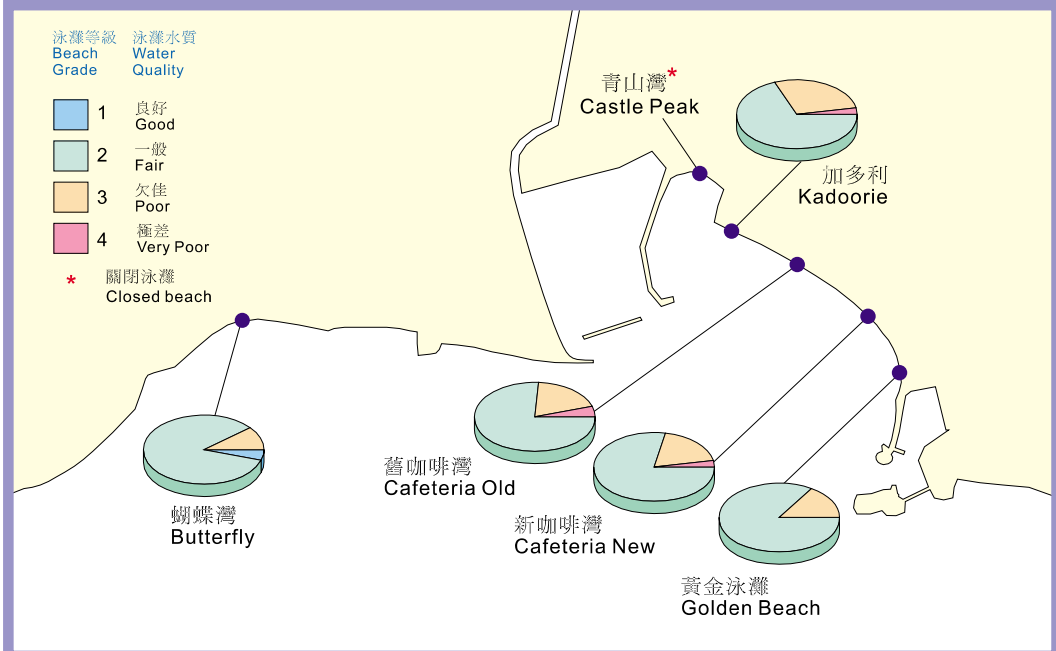


圖 6.2　屯門區泳灘在泳季期間的每周等級分布圖

Figure 6.2　Distribution of the weekly grading at the Tuen Mun beaches during the bathing season

6.4　當屯門污水收集改善工程完成後，配合環保署持續的執法行動，屯門河的水質已大為改善。不過，屯門河下游區河水的大腸桿菌含量仍然高企，由每百毫升 1,000 個至 100,000 個不等。這些從河流沖下，加上積聚在位於河口的避風塘內的污染物，均有可能造成泳灘水質在大雨後出現的變化。

6.5　屯門河的其中一個污染源來自上游地區未敷設污水設施的鄉村所排放的污水。這些鄉村以化糞池及滲水井系統處理污水。長遠來說，屯門排污系統將擴展至這些仍未敷設污水設施的地區，而村屋的污水

water quality of the Tuen Mun River had significantly improved. However, the *E. coli* level of the river water was still high ranging from 10^3 to 10^5 per 100mL at the lower reach. Pollutants from the river together with those accumulated in the Castle Peak Typhoon Shelter at the mouth of the river, could contribute to the fluctuating water quality observed at the beaches during heavy rain.

6.5　One of the major pollution sources of the Tuen Mun River is the sewage from the unsewered villages at the upper reach. These unsewered villages use septic tank and soakaway systems for sewage

渠務工程
Sewer construction

位於屯門河上游的村屋
Village houses at the upper reach of Tuen Mun River

treatment. In the years ahead, the Tuen Mun sewerage system will eventually be extended to these unsewered areas so that sewage from the village houses would be collected for treatment and disposal at suitable sewage treatment facilities. When the project is implemented, the water quality of the Tuen Mun River and hence, of the beaches in the vicinity is expected to improve further.

6.6 The marine background of the Tuen Mun area was affected by discharges from the Northwest New Territories (NWNT) and the Pillar Point submarine outfalls, which discharged into Urmston Road and the sea area facing Pillar Point respectively. EPD's marine monitoring results indicated that the *E. coli* levels of the water at Urmston Road and Pillar point were around 400 to 500 and 300 to 400 per 100mL respectively. To further improve the marine water quality in Tuen Mun, a study has been completed to upgrade the treatment level of the Pillar Point and San Wai Sewage Treatment Works from preliminary screening level to chemically enhanced primary treatment with disinfection. The overall water quality of the Tuen Mun beaches is expected to improve after the completion of these upgrading works.

經收集後會輸送至適當的污水處理設施處理及處置。相信這項工程完成後，屯門河及其附近泳灘的水質將進一步改善。

6.6 屯門區的海洋背景水質受到新界西北區及望后石海底排污渠排放的污水分別流入龍鼓水道及面對望后石的海域所影響。環保署海水監測結果顯示，龍鼓水道及望后石海水的大腸桿菌含量分別為每百毫升400至500個及每百毫升300至400個。為改善海水水質，有構思把望后石及新圍污水處理廠的污水處理水平由初步處理提升為化學輔助一級污水處理，及加入消毒程序。此研究已經完成。在這些改善工程完成後，預期屯門區泳灘的水質將有所改善。

望后石初步污水處理廠的螺旋式泵
Screw pumps at Pillar Point Preliminary Treatment Works

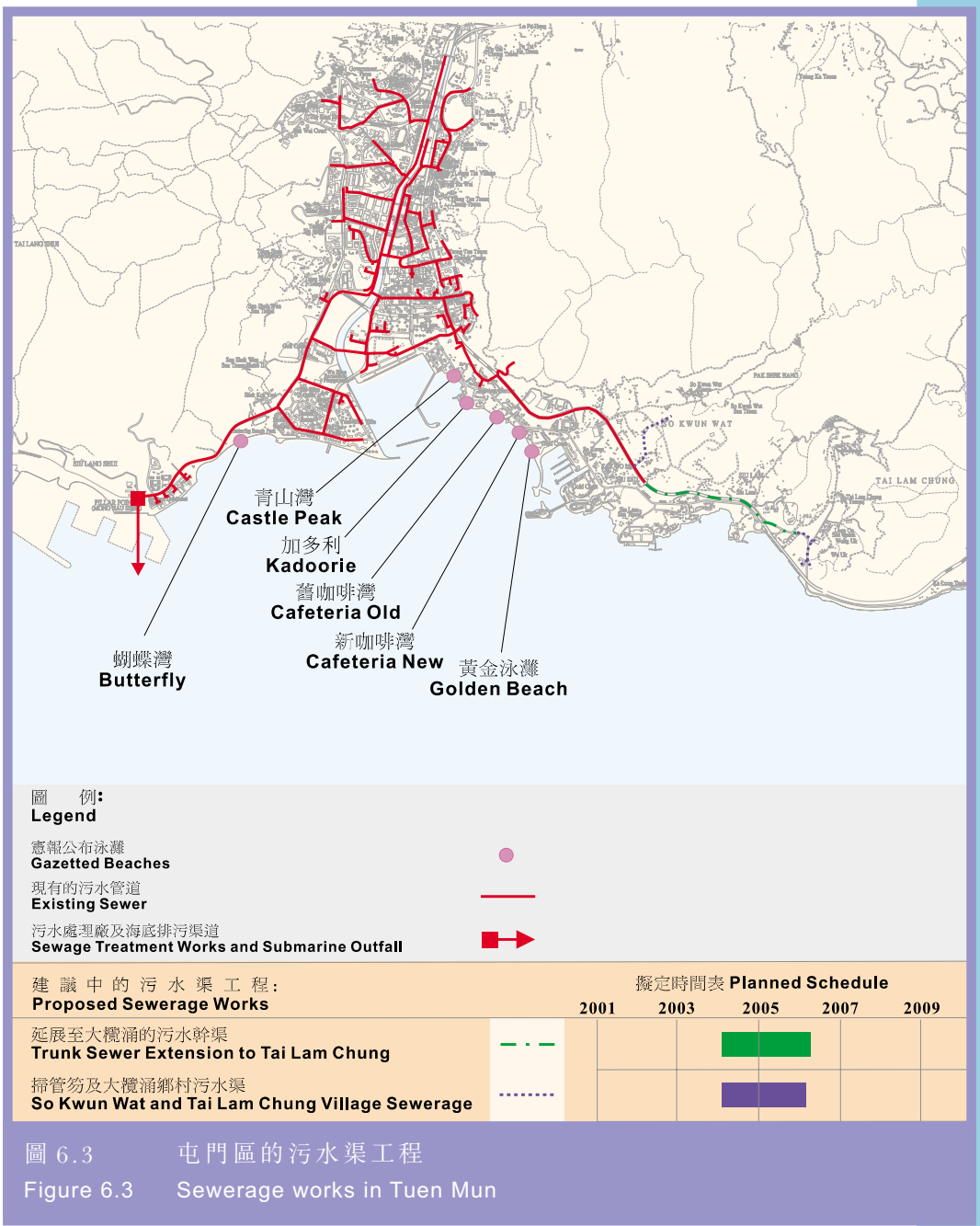


圖 6.3 屯門區的污水渠工程

Figure 6.3 Sewerage works in Tuen Mun

荃灣區的泳灘
Beaches in the Tsuen Wan District

7.1 荃灣區所有開放的憲報公布泳灘獲得的全年級別大致與二零零零年相同。二零零一年，除位於馬灣的東灣的水質屬於「一般」外，其餘四個開放泳灘的水質均屬「欠佳」(見圖 7.1)。至於在三個關閉的泳灘中，近水灣的全年級別屬於

7.1 All the opened gazetted beaches in Tsuen Wan had similar annual ranks as in 2000. Tung Wan on Ma Wan had "Fair" water quality and the other four opened beaches were ranked "Poor" in 2001 (Figure 7.1). For the three closed beaches, Approach was ranked "Poor" while Ting Kau and Anglers' were ranked "Very Poor" in 2001.

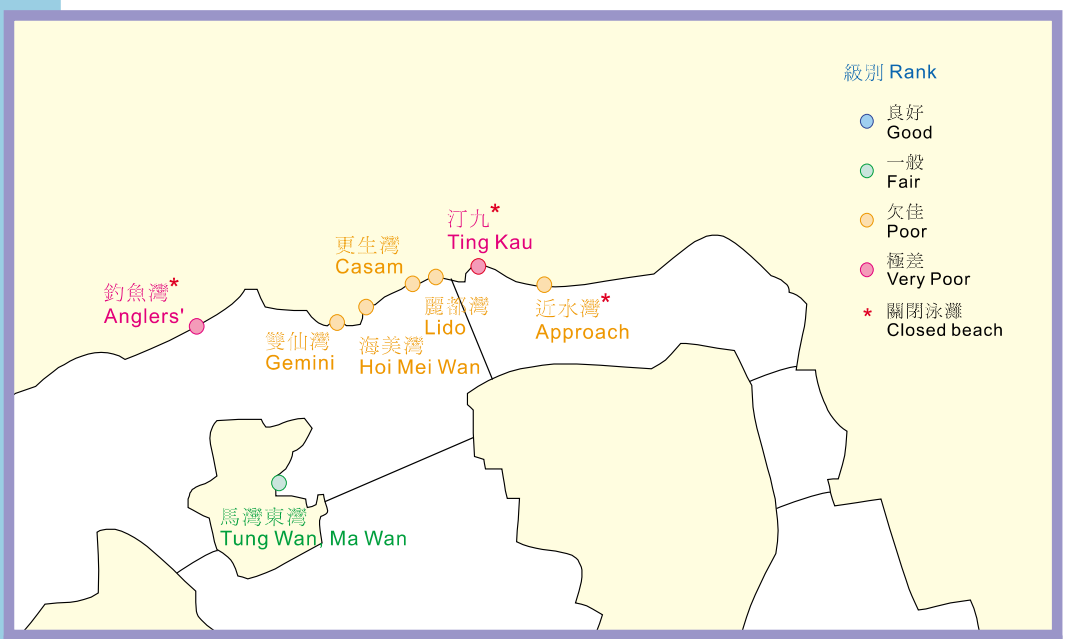


圖 7.1 荃灣區泳灘在二零零一年度的全年級別

Figure 7.1 Annual ranks of Tsuen Wan beaches in 2001

「欠佳」，汀九及釣魚灣的級別則屬「極差」。

7.2 鑑於二零零一年潮濕多雨，泳季的降雨量超逾正常降雨量達 40% 之多，荃灣區所有泳灘又極易受雨量影響，因此，根據區內泳灘所獲的每周等級，反映年內大部分時間它們的水質均屬欠佳（見圖 7.2）。

7.3 在本港五個設有憲報公布泳灘的地區中，只有荃灣區的泳灘未能合符泳灘水質指標。荃灣區泳灘的水質欠佳主要是泳灘腹地未敷設排污設施，以及受到污染的深井明渠及藍巴勒海峽一帶的污染海水影響所致。

藍巴勒海峽
The Rambler Channel

7.2 Since the year 2001 had been a very wet year with about 40% more rainfall than the norm in the bathing season and all the Tsuen Wan beaches were highly susceptible to the rainfall effect, the water quality of these beaches was poor at most of the time in 2001. This was reflected in their weekly grading (Figure 7.2).

7.3 Among the five districts in Hong Kong where gazetted beaches are located, only Tsuen Wan has beaches that could not meet the WQO for bathing water. The poor water quality of

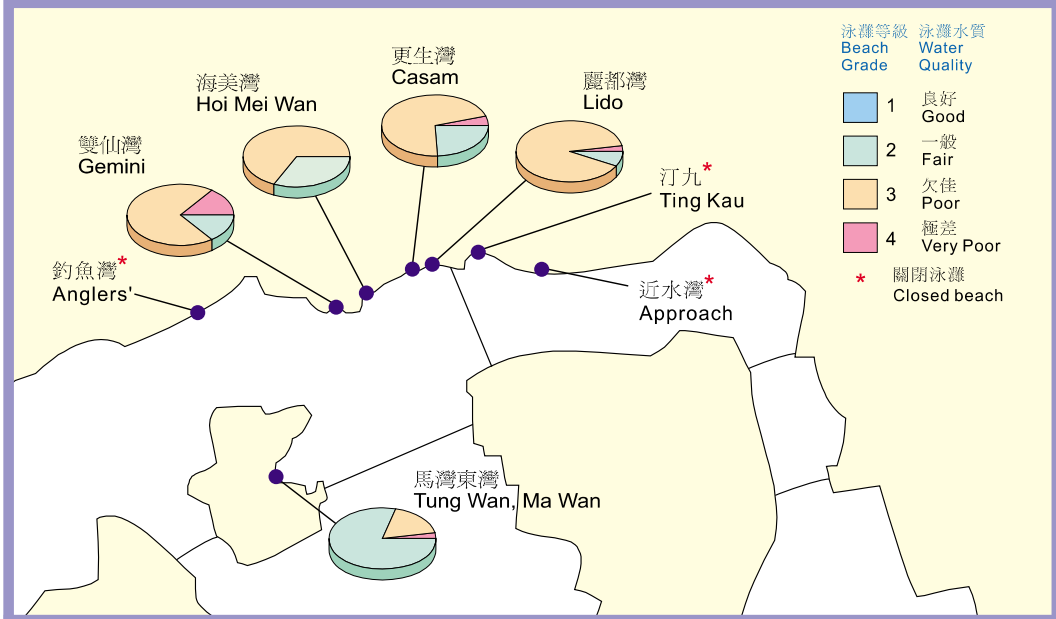


圖 7.2 荃灣區泳灘在泳季期間的每周等級分布圖

Figure 7.2 Distribution of the weekly grading at the beaches of Tsuen Wan during the bathing season

7.4 由汀九至青龍頭一段的青山公路目前仍未敷設排污設施。除了新建的樓宇設有私人污水處理廠外，青山公路一帶的大部分村屋均採用化糞池及滲水井系統。此外，村屋居民會把生活污水排入地面水渠。每逢大雨，化糞池及滲水井便會滿溢，來自泳灘腹地地面水渠的污染徑流亦會造成污染，影響泳灘水質。

7.5 汀九及釣魚灣的污染問題特別嚴重，是因為兩處的腹地均建有較多的村屋和寮屋。汀九村約有千名居民，而釣魚灣是最接近深井明渠的泳灘，受到深井區的村落以及排棉角村排放的污水所影響。

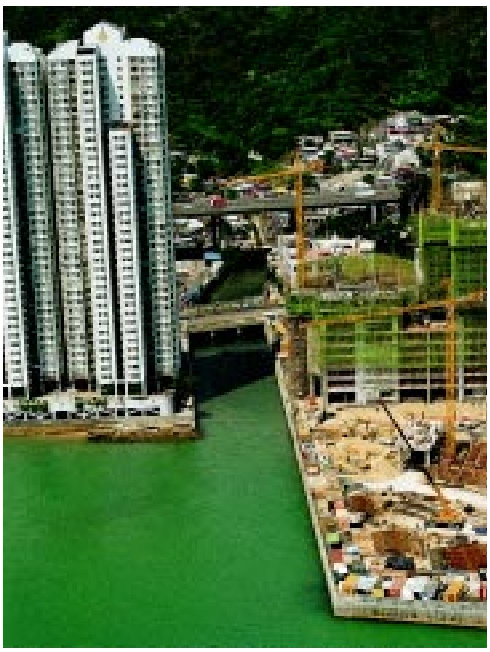
7.6 二零零一年，由於泳季期間出現連場大雨，上述兩個

the Tsuen Wan beaches is attributed to polluted discharges from their unsewered hinterland, the polluted Sham Tseng Nullah and the relatively high background pollution of the waters around the Rambler Channel.

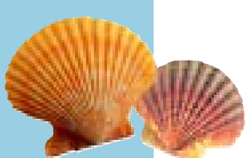
7.4 The area along Castle Peak Road from Ting Kau to Tsing Lung Tau is still unsewered. Except new housing developments, which have their own private sewage treatment plants, most village houses along the Castle Peak Road are served by septic tank and soakaway pit systems. Also, the sullage from village houses is discharged into surface drains. During heavy rain, overflow from septic tank and soakaway pit systems as well as the polluted runoff from the surface drains in the beach hinterland would adversely affect the beach water quality.

7.5 Local pollution problem is particularly noticeable at Ting Kau and Anglers' Beaches where more village and squatter houses are found in their hinterlands. The Ting Kau Village has a population of about 1,000; and the Anglers', being the closest beach to the Sham Tseng Nullah, is affected by the discharges from the villages in the Sham Tseng area as well as from the Pai Min Kok Village.

7.6 As a result of the heavy rainfall during the bathing season, the water quality of both beaches had deteriorated to the "Very Poor" rank in 2001. In order to control the pollution problems associated with septic tanks and open drains,



深井明渠
Sham Tseng Nullah



擬建深井污水處理廠的填海址
Reclaimed site for Sham Tseng Sewage Treatment Plant

泳灘的水質均轉趨惡化，所獲的全年級別轉為「極差」。為控制化糞池及明渠產生的污染問題，環保署在泳季期間進行了超過450次巡查，視察荃灣區泳灘腹地的化糞池，並促請村民妥善維修保養化糞池。

7.7　為永久消除荃灣區泳灘的污染源，當局會為汀九至青龍頭一段的青山公路提供完善的排污設施(見圖7.3)。從區內所有泳灘腹地的村屋排放的污水，經收集後會輸往深井填海區新建的污水處理廠處理。在新建的深井污水處理廠，污水會經化學輔助一級沉澱和消毒處理，然後經深海排污渠排入大海。深井排污幹渠的建築工程已於一九九九年中展開，而污水處理廠及深海排污渠將於二零零二年興建。整項改善工程預定於二零零五年完成。

7.8　受污染的深井明渠影響荃灣區泳灘的水質，尤其是

EPD had conducted over 450 inspections of septic tanks in the hinterland of Tsuen Wan beaches during the bathing season in 2001, and urged the local villagers to properly maintain their septic tanks.

7.7　To permanently remove the potential pollution sources of the Tsuen Wan beaches, proper sewerage will be provided along the Castle Peak Road from Ting Kau to Tsing Lung Tau (Figure 7.3). Sewage from the village houses in the hinterland of all beaches will be collected and conveyed to a new sewage treatment plant to be built on reclaimed land in Sham Tseng. At the new Sham Tseng Sewage Treatment Plant, sewage will be treated by chemically enhanced primary sedimentation and disinfection prior to discharge to the sea via a submarine outfall. The construction of trunk sewerage at Sham Tseng has commenced in mid 1999, while the building of the sewage treatment plant and submarine outfall will commence in 2002. The whole improvement work is scheduled for completion in 2005.

7.8　The polluted Sham Tseng Nullah affects the water quality of the Tsuen Wan beaches, in particular the Anglers' Beach. Sullage and raw

興建中的污水幹渠
Trunk sewer under construction

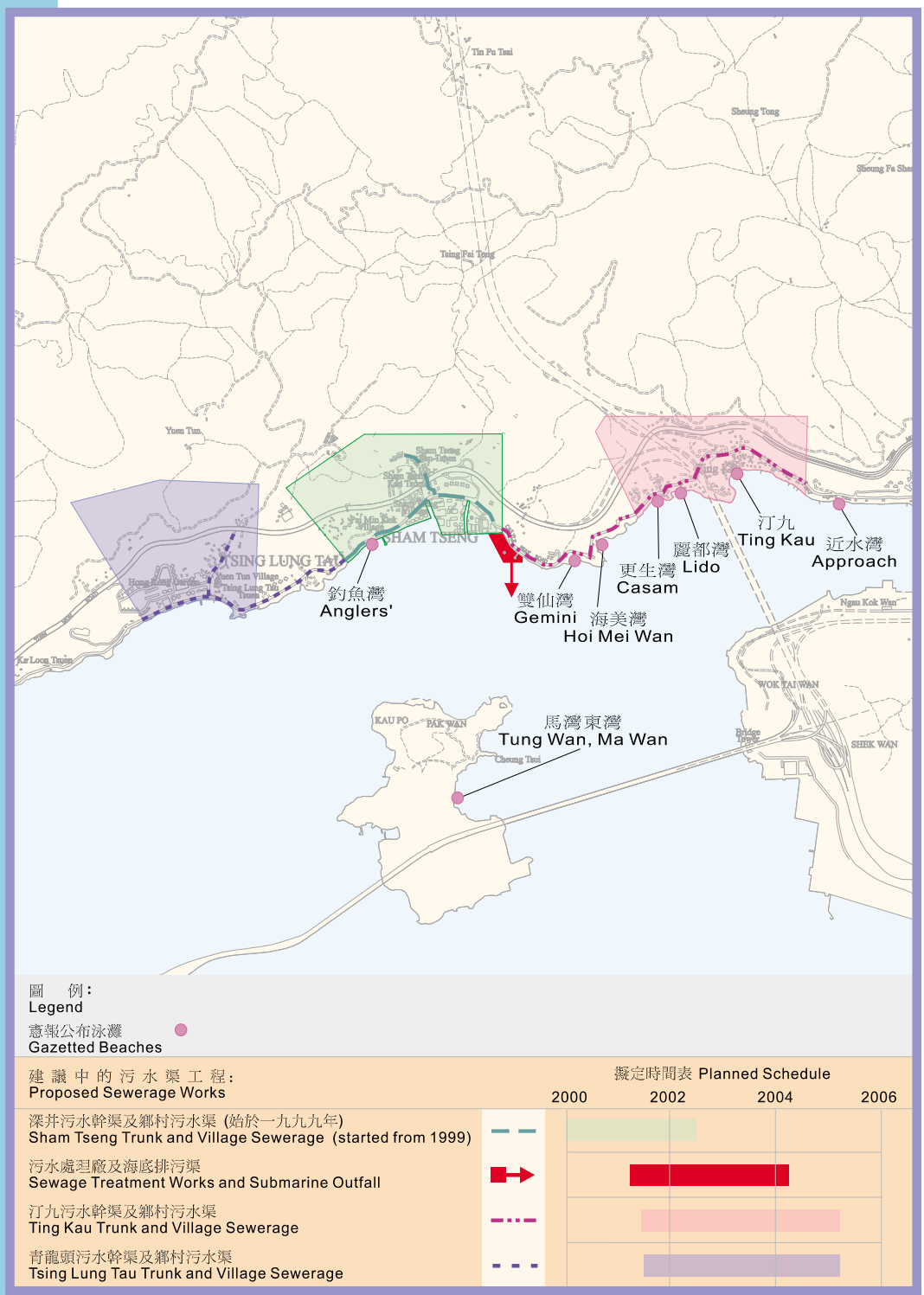


圖 7.3 建議中的青龍頭、深井和汀九污水渠工程

Figure 7.3 Proposed sewerage works for Tsing Lung Tau, Sham Tseng and Ting Kau

釣魚灣。生活污水及未經處理的污水由深井區的寮屋直接排入明渠。來自深井重建村的兩個公用化糞池及石濾井的部分經處理污水亦排入明渠。

sewage from the squatter houses in the Sham Tseng area are discharged directly into the Nullah. Partially treated sewage from the two communal septic tanks and stone filters serving the Sham Tseng Resite Village, is also discharged into this Nullah.

深井明渠上游
Upper stream of Sham Tseng Nullah

7.9 在深井區設有完善的排污設施之前，為了紓緩現時深井明渠的污染問題，當局於二零零零年興建了兩個大型儲水缸，儲存由垃圾收集站、公廁及臨時街市排放的廢水，以待由吸糞車運走處理。在二零零一年底，另一間附設消毒系統的二級污水處理廠亦已落成啟用，以改善來自深井重建村兩個公用化糞池排放的污水質素。透過上述的改善措施，預期深井附近的泳灘將較少受到明渠排放的污水影響。

7.9 To alleviate the pollution problem of the Sham Tseng Nullah before the provision of proper sewerage to the Sham Tseng area, two storage tanks had been built in 2000 for storing the wastewater from the Refuse Collection Point, public toilet and temporary market, and the wastewater is collected by tanker for proper disposal. An additional secondary sewage treatment plant with disinfection has also been built and commissioned at the end of 2001 to improve the quality of effluent from the two communal septic tanks for the Sham Tseng Resite Village. Through these improvement measures, it is expected that the beaches in the vicinity will be less affected by the discharges from the Nullah.

吸糞車
Sewage tanker

7.10　荃灣區的泳灘，特別是近水灣、汀九、麗都灣及更生灣泳灘的水質亦受到藍巴勒海峽的污染海水影響。藍巴勒海峽海水的大腸桿菌含量由每百毫升 1,000 至 10,000 個不等。海峽的水質在荃灣市區的排污設施工程完成後已有改善，因為所有經非法接駁管道直接排入海峽的污水已被截流及分流進行妥善處置。藍巴勒海峽的水質在過往亦受到來自葵涌及青衣初步污水處理廠經初步隔濾的污水所影響。不過當淨化海港計劃第一期（見圖 7.4）於二零零一年十一/ 十二月實施後，此污染源已經消除，而海峽的水質亦應有所改善。

麗都灣泳灘
Lido Beach

7.10　The water quality of the Tsuen Wan Beaches, particularly Approach, Ting Kau, Lido and Casam Beaches, is also affected by the polluted marine water from the Rambler Channel, which had *E. coli* levels ranging from 10^3 to 10^4 per 100mL. The marine water quality of the Channel had been improved after the completion of the sewerage work for the Tsuen Wan town area where all the expedient connections which previously discharged directly into the Channel were intercepted and diverted away for proper disposal. The water quality of the Channel has also been affected in the past by the screened sewage from the Kwai Chung and Tsing Yi Preliminary Treatment Works. However, with the commissioning of the first stage of the Harbour Area Treatment Scheme (HATS) in November / December 2001 (Figure 7.4), this pollution source has been removed and the Channel water quality should improve.

淨化海港計劃的深層隧道
Deep Tunnel of the Harbour Area Treatment Scheme

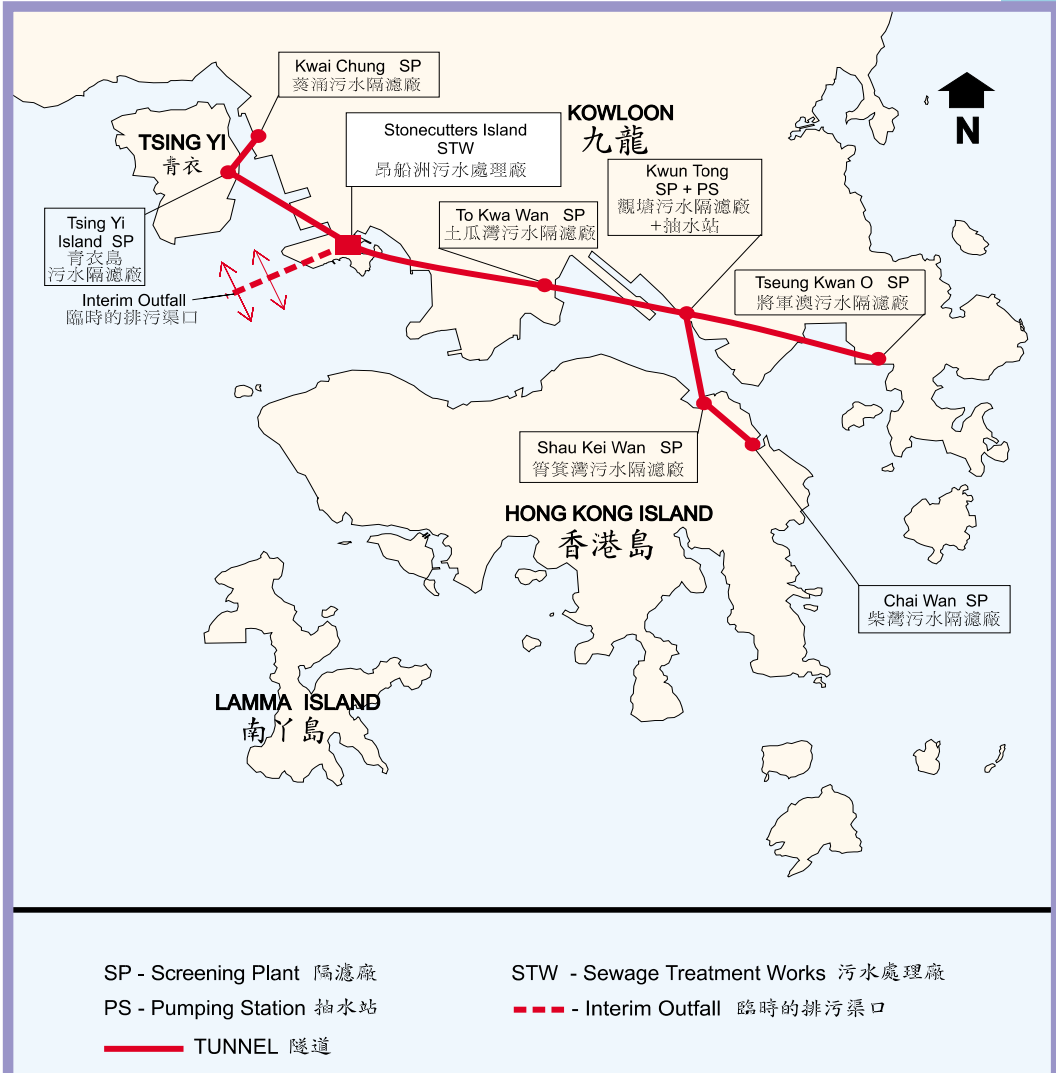


圖 7.4 淨化海港計劃第一期
Figure 7.4 Harbour Area Treatment Scheme Stage I

泳灘垃圾
Refuse at Beaches

8.1 每年，數以萬計的遊人會前往香港美麗的泳灘暢泳遊覽。雖然近年泳灘的細菌水質已大大改善，但泳灘的清潔與否往往與觀感有關。漂浮垃圾不僅令泳客感到討厭，對海上交通亦構成影響。因此，清理沙灘上的漂浮垃圾至為重要。

8.2 海上的漂浮垃圾，可源自撞船或其他海上意外。沙灘上裝設的防鯊網，會阻隔部分從海上漂來的垃圾。康文署負責收集被沖上泳灘或漂進泳區的垃圾。泳灘員工會經常使用救生艇或「海貍」，清除在浮波線泳區內的漂浮垃圾。至於已沖上沙灘的垃圾，每天均會由康文署的外判清潔工人收集。

8.1 The beautiful beaches of Hong Kong are visited by thousands of visitors each year. Though the bacteriological water quality of beaches has improved considerably in recent years, the cleanliness of a beach is more often related to the visual impact. Floating refuse not only causes nuisance to beach bathers but it also affects marine traffic. Hence cleaning up floating refuse at beaches is of vital importance.

8.2 Floating refuse at sea could originate from shipwrecks, or other marine accidents. The shark prevention nets installed at the beaches trapped some of the floating refuse drifted from the sea. When they are washed ashore or drifted into the bathing area, they are collected by the LCSD. Within the boomed bathing area, the floating refuse is removed by beach staff with the aid of a catamaran or "seacat" on a regular basis. For those landed on the beach area, daily collection is carried out by the contract cleansing staff of the LCSD.

8.3 As floating refuse could be brought in by tide and current, as well as affected by

8.3 由於海上垃圾可隨潮汐及水流漂至，亦會受風向影響，所以在泳灘收集得的垃圾量， 亦會有季節性的變化。大部分泳灘都是在七至八月收集得最大量的漂浮垃圾(見附錄2)，這可能與七、八月間的惡劣天氣和風向有關。

8.4 二零零一年，在各個憲報公布泳灘收集得的漂浮垃圾量，比二零零零年的增加10%。一般來說，在港島東面的泳灘所收集得的垃圾量，大致都比新界泳灘所收集得的為多(見圖 8.1)。

8.5 為了提高市民的環保意識以及促進社會各界參與環保，政府及私人機構都分別舉辦了不同的清潔沙灘活動。

wind, there is seasonal variation in the amount of floating refuse collected at the beaches. The greatest quantity of floating refuse was collected at most of the beaches in July to August (Appendix 2). This may be related to the adverse weather and prevailing wind direction in both months.

8.4 The total amount of floating refuse collected at the gazetted beaches has increased by 10% in 2001 compared with 2000. In general, the amount of refuse collected at beaches on the east of Hong Kong Island was greater than those collected at beaches in the New Territories (Figure 8.1).

8.5 In order to enhance public awareness and community participation in environmental protection, various activities had been organized by both the government and the private sectors to clean up our beaches.

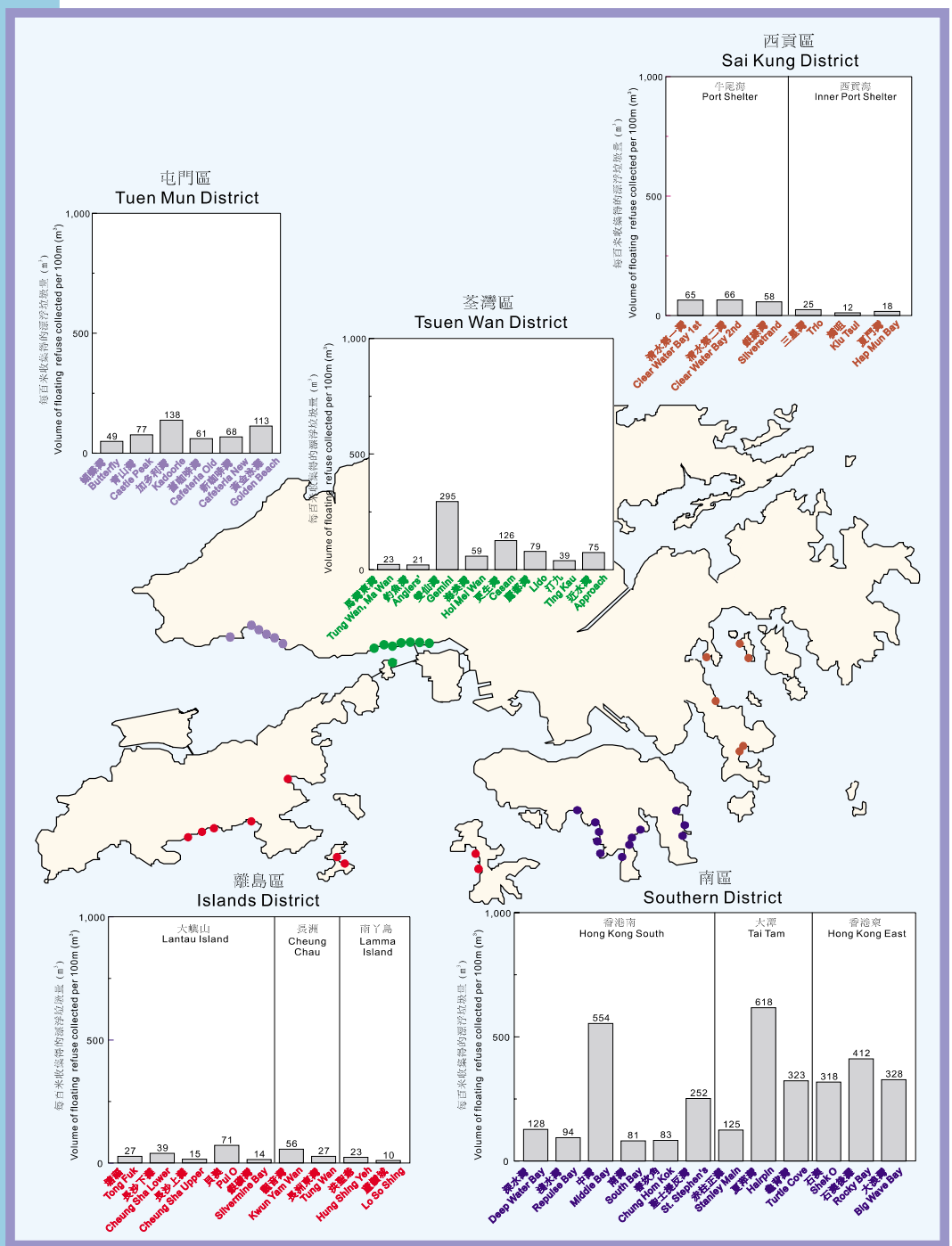


圖 8.1　二零零一年在憲報公布泳灘所收集得的漂浮垃圾量

Figure 8.1　Amount of floating refuse collected at gazetted beaches in 2001

前往憲報公布泳灘的遊人數目
Number of Visitors to Gazetted Beaches

憲報公布的泳灘 Gazetted Beach		平均每日人次 Average daily attendance		最高峰人次 Peak attendance		總人次 Total attendance
		平日 Weekday	週末及公眾假期 Weekend & public holiday	最高峰日 Peak day	最高峰月 Peak month	
南區	Southern District					
大浪灣	Big Wave Bay	180	1248	4020	29938	129554
春坎角	Chung Hom Kok	86	732	2750	14815	72807
深水灣	Deep Water Bay	3053	7843	40000	393400	1131210
夏萍灣	Hairpin	151	589	2230	13424	72119
中灣	Middle Bay	1390	2719	10500	138361	446976
淺水灣	Repulse Bay	4666	10423	46000	454120	1603724
石澳	Shek O	1389	12022	44000	224100	1190914
南灣	South Bay	394	1350	4130	37350	172988
聖士提反灣	St. Stephen's	155	608	1800	15685	74115
赤柱正灘	Stanley Main	637	2954	9950	87580	341492
龜背灣	Turtle Cove	79	497	2550	11073	52859
離島區	Islands District					
觀音灣	Kwun Yam Wan	62	130	796	6185	20517
長洲東灣	Tung Wan, Cheung Chau	204	765	3400	38513	94873
洪聖爺	Hung Shing Yeh	69	459	1750	12071	48132
蘆鬚城	Lo So Shing	15	100	395	2035	10460
長沙下灘	Cheung Sha Lower	45	132	470	4844	17999
長沙上灘	Cheung Sha Upper	50	175	400	4370	22180
貝澳	Pui O	52	284	1800	9265	31366
銀礦灣	Silvermine Bay	48	185	1220	4899	22650
塘福	Tong Fuk	55	193	715	7048	24522
西貢區	Sai Kung District					
清水第一灣	Clear Water Bay First	93	387	1480	13088	46279
清水第二灣	Clear Water Bay Second	1943	7281	28500	344600	903181
夏門灣	Hap Mun Bay	168	1156	7285	36843	120089
橋咀	Kiu Tsui	54	163	880	3750	22026
銀線灣	Silverstrand	58	327	1580	8351	35773
三星灣	Trio	69	543	2250	14225	54870
荃灣區	Tsuen Wan District					
釣魚灣	Anglers'	56	172	1859	9568	22956
近水灣	Approach	29	60	145	1533	9532
更生灣	Casam	27	72	350	2030	10238
雙仙灣	Gemini	0	4	35	138	325
海美灣	Hoi Mei Wan	0	7	47	168	614
麗都灣	Lido	121	393	2100	11900	51400
汀九	Ting Kau	19	37	111	994	6186
馬灣東灣	Tung Wan, Ma Wan	10	31	830	1170	4169
屯門區	Tuen Mun District					
蝴蝶灣	Butterfly	1009	6432	26250	179070	681070
青山灣	Castle Peak	562	1453	3630	35845	208920
黃金泳灘	Golden Beach	2037	3983	16200	103850	654650
加多利灣	Kadoorie	144	490	750	9510	62870
新咖啡灣	Cafeteria New	424	1202	3150	37280	166056
舊咖啡灣	Cafeteria Old	484	1502	2940	37070	200080

備註 : 資料由康樂及文化事務署提供。
Notes Information provided by Leisure and Cultural Services Department.
石澳後灘的遊人數目並沒有記錄。
No beach attendance record has been kept for Rocky Bay Beach.

在憲報公布泳灘所收集得的漂浮垃圾量
Quantity of Floating Refuse Collected at Gazetted Beaches

憲報公布的泳灘 Gazetted Beach		二零零零年的漂浮垃圾量(立方米) Floating refuse in 2000 (m^3)	二零零一年的漂浮垃圾量 Floating refuse in 2001 (立方米) (m^3)	最高峰月 Peak month	每百米收集量(立方米) Volume per 100m (m^3)
南區	Southern District				
大浪灣	Big Wave Bay	274	469	七月 Jul	328
春坎角	Chung Hom Kok	401	158	七月 Jul	83
深水灣	Deep Water Bay	500	537	七月 Jul	128
夏萍灣	Hairpin	514	420	七月 Jul	618
中灣	Middle Bay	922	565	八月 Aug	554
淺水灣	Repulse Bay	783	495	七月 Jul	94
石澳後灘	Rocky Bay	424	697	七月 Jul	412
石澳	Shek O	159	1130	七月 Jul	318
南灣	South Bay	67	207	九月 Sept	81
聖士提反灣	St. Stephen's	426	362	七月 Jul	252
赤柱正灘	Stanley Main	686	593	七月 Jul	125
龜背灣	Turtle Cove	292	375	七月 Jul	323
離島區	Islands District				
觀音灣	Kwun Yam Wan	115	124	八月 Aug	56
長洲東灣	Tung Wan, Cheung Chau	314	229	八月 Aug	27
洪聖爺	Hung Shing Yeh	72	49	六月 Jun	23
蘆鬚城	Lo So Shing	30	24	七月 Jul	10
長沙下灘	Cheung Sha Lower	61	178	七月 Jul	39
長沙上灘	Cheung Sha Upper	150	70	八月 Aug	15
貝澳	Pui O	465	713	七月 Jul	71
銀礦灣	Silvermine Bay	148	84	六月 Jun	14
塘福	Tong Fuk	66	152	七月 Jul	27
西貢區	Sai Kung District				
清水第一灣	Clear Water Bay First	74	72	七月 Jul	65
清水第二灣	Clear Water Bay Second	92	247	七月 Jul	66
夏門灣	Hap Mun Bay	47	37	八月 Aug	18
橋咀	Kiu Tsui	29	23	十月 Oct	12
銀線灣	Silverstrand	67	60	八月 Aug	58
三星灣	Trio	25	40	七月 Jul	25
荃灣區	Tsuen Wan District				
釣魚灣	Anglers'	66	72	六月 Jun	21
近水灣	Approach	72	98	七月 Jul	75
更生灣	Casam	105	124	七月 Jul	126
雙仙灣	Gemini	79	88	七月 Jul	295
海美灣	Hoi Mei Wan	127	68	七月 Jul	59
麗都灣	Lido	136	152	七月 Jul	79
汀九	Ting Kau	67	106	七月 Jul	39
馬灣東灣	Tung Wan, Ma Wan	63	59	七月 Jul	23
屯門區	Tuen Mun District				
蝴蝶灣	Butterfly	430	331	八月 Aug	49
青山灣	Castle Peak	87	192	七月 Jul	77
黃金泳灘	Golden Beach	708	677	五月 May	113
加多利灣	Kadoorie	158	155	六月 Jun	138
新咖啡灣	Cafeteria New	148	157	七月 Jul	68
舊咖啡灣	Cafeteria Old	140	152	六月 Jun	61
全部泳灘	**All Beaches**	**9589**	**10541**		

備註 : 資料由康樂及文化事務署提供。
Note Information provided by Leisure and Cultural Services Department.

已設有雨天效應告示牌的泳灘
Beaches with Rainfall Warning Notices Displayed

區域 District	泳灘 Beach	
南區 Southern District	大浪灣	Big Wave Bay
	夏萍灣	Hairpin
	石澳	Shek O
	赤柱正灘	Stanley Main
	龜背灣	Turtle Cove
離島區 Islands District	觀音灣	Kwun Yam Wan
	長沙下灘	Cheung Sha Lower
	貝澳	Pui O
	銀礦灣	Silvermine Bay
	塘福	Tong Fuk
西貢區 Sai Kung District	清水第一灣	Clear Water Bay First
	清水第二灣	Clear Water Bay Second
	橋咀	Kiu Tsui
	銀線灣	Silverstrand
	三星灣	Trio
荃灣區 Tsuen Wan District	更生灣	Casam
	雙仙灣	Gemini
	海美灣	Hoi Mei Wan
	麗都灣	Lido
	馬灣東灣	Tung Wan, Ma Wan
屯門區 Tuen Mun District	蝴蝶灣	Butterfly
	黃金泳灘	Golden Beach
	加多利灣	Kadoorie
	新咖啡灣	Cafeteria New
	舊咖啡灣	Cafeteria Old

如欲查詢本刊物詳情，請直接與環境保護署聯絡。
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