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For information

Beach Water Quality of Hong Kong in 2005

Introduction

The purpose of this paper is to brief Members on the water quality of gazetted beaches in Hong Kong in 2005.

Background

2. The Environmental Protection Department (EPD) implements a monitoring programme to assess the water quality of 41 gazetted beaches in Hong Kong.
3. The beach water quality is assessed through a ranking system which links the water quality of a beach with swimming-associated health risks as measured by the number of *E. coli* bacteria in the water. According to this system, beaches are ranked as “Good”, “Fair”, “Poor” or “Very Poor” in accordance with the *E. coli* level. Beaches with annual geometric mean *E. coli* levels below 25 per 100 mL are ranked as “Good”, between 25 and 180 per 100 mL as “Fair”, and those between 181 and 610 per 100 mL as “Poor”. Only the beaches in the ranks of “Good” and “Fair” meet the Water Quality Objective (WQO) for bathing water. Beaches ranked “Very Poor” (*E. coli* level exceeding 610 per 100 mL which corresponds to a swimming-associated illness rate of more than 15 cases per 1,000 swimmers) are generally considered not suitable for swimming, and therefore beach closure is recommended to safeguard the health of swimmers.

Beach Water Quality in 2005

4. In 2005, among the 41 gazetted beaches, 23 (or 56%) are ranked as “Good”, 11 (27%) as “Fair”, one (2%) as “Poor” and six (15%) as “Very Poor” (Figure 1). The total number of beaches complying with the WQO was maintained at 34 or 83%, the same as in 2003 and 2004 (Figure 2). The seven beaches with “Poor” or “Very Poor” rankings which did not comply with the WQO were all located along the Tsuen Wan coast. They

continued to be closed to swimmers in 2005 due to poor water quality.

5. In 2005, there were some changes in the annual rankings of six beaches as compared with those in 2004. Among them, Rocky Bay Beach in Southern District and Silver Mine Bay Beach on Lantau Island, were changed from “Good” to “Fair”, and four Tsuen Wan beaches, namely Approach, Casam, Hoi Mei Wan and Lido Beaches, were changed from “Poor” to “Very Poor”.

6. The changes of beach water quality in 2005 may be largely related to the exceptionally wet weather in 2005, in contrast with 2004 which was considered a dry year. Heavy rainfall is known to have an adverse effect on beach water quality. For instance, during storm events, polluted run-off from beach hinterlands and overflow from septic tanks could cause a sudden increase of *E. coli* in the water. During the bathing season in March to October 2005, the amount of rainfall was 53% higher than the long-term average, and 71% and 94% higher than in 2003 and 2004 respectively.

Closed beaches in Tsuen Wan

7. The water quality of seven beaches in Tsuen Wan, namely Anglers’, Approach, Casam, Gemini, Hoi Mei Wan, Lido and Ting Kau Beaches, continued to fluctuate considerably. Apart from the potential pollution sources in the unsewered hinterlands, the poor water quality is also related to the high bacterial levels in the marine water off Tsuen Wan.

8. The implementation of the Harbour Area Treatment Scheme (HATS) Stage 1 at the end of 2001 has brought about significant improvement in water quality at some beaches on the eastern side of the Hong Kong Island, but at the same time has elevated the bacterial levels at beaches in the Tsuen Wan area. To improve the water quality of Tsuen Wan beaches, the Government is working on the next stage of the Harbour Area Treatment Scheme (HATS Stage 2A), and plans to disinfect effluent from the Stonecutters Island Sewage Treatment Works (STW) by 2009, subject to the support of the community for full recovery of the operating cost through sewage charges. The disinfection of effluent at the Stonecutters Island STW, together with the provision of public sewers to the beach hinterlands should substantially improve the water quality of Tsuen Wan beaches.

9. In view of the time required to bring about improvement of water quality, the seven beaches in Tsuen Wan need to remain closed for swimming in the 2006 bathing season.

Re-opening of Castle Peak Beach

10. The re-opening of Castle Peak Beach on 1 June 2005 was a major highlight in the 2005 bathing season. Castle Peak Beach was closed for swimming from 1981 onwards due to poor water quality. There has been a significant improvement in water quality in recent years as a result of the implementation of pollution control measures and sewerage programmes. Since 1999, the annual ranking of Castle Peak Beach has been maintained at "Fair". After the completion of the seabed improvement works and installation of beach facilities, Castle Peak Beach was re-opened in 2005, attracting a total of 105,000 visitors from 1 June to 31 October (the end of the bathing season).

Conclusion

11. Despite the exceptionally heavy rainfall in 2005, some 34 (83%) of the 41 gazetted beaches complied with the WQO, the same as in 2003 and 2004.

12. The seven Tsuen Wan beaches (*viz.* Anglers', Approach, Casam, Gemini, Hoi Mei Wan, Lido and Ting Kau Beaches) which did not meet the WQO were closed for swimming. To ensure an early re-opening of these beaches, the Government is working on the next stage of the Harbour Area Treatment Scheme (HATS Stage 2A), and plans to disinfect effluent at the Stonecutters Island Sewage Treatment Works in 2009, subject to the support of the community for full recovery of the operating cost through sewage charges. As the effluent disinfection in the HATS project and the planned local sewerage works will take some years to complete, to safeguard the health of swimmers, these seven beaches need to remain closed for swimming in the bathing season in 2006.

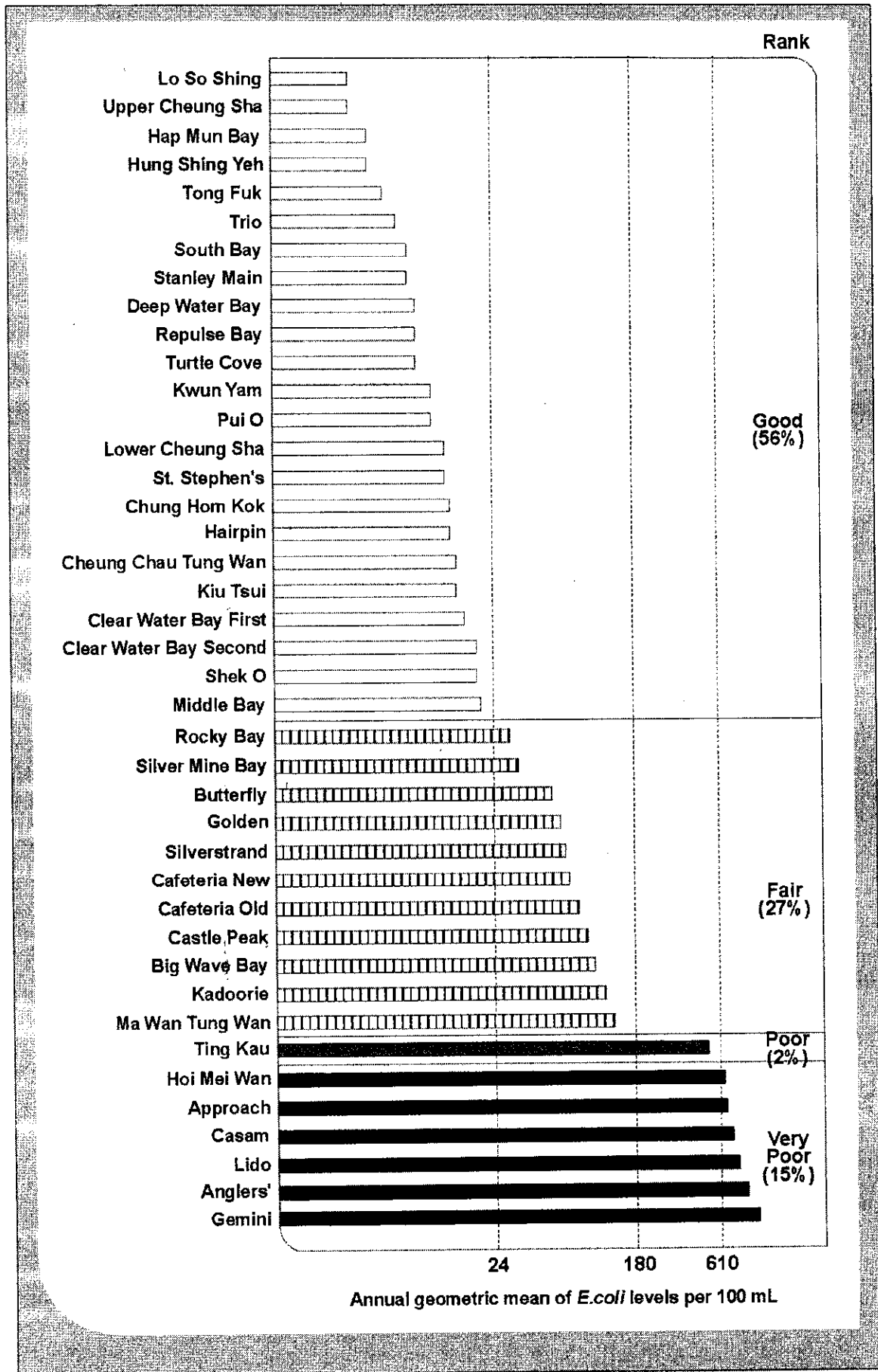


Figure 1 Annual ranking of gazetted beaches in 2005

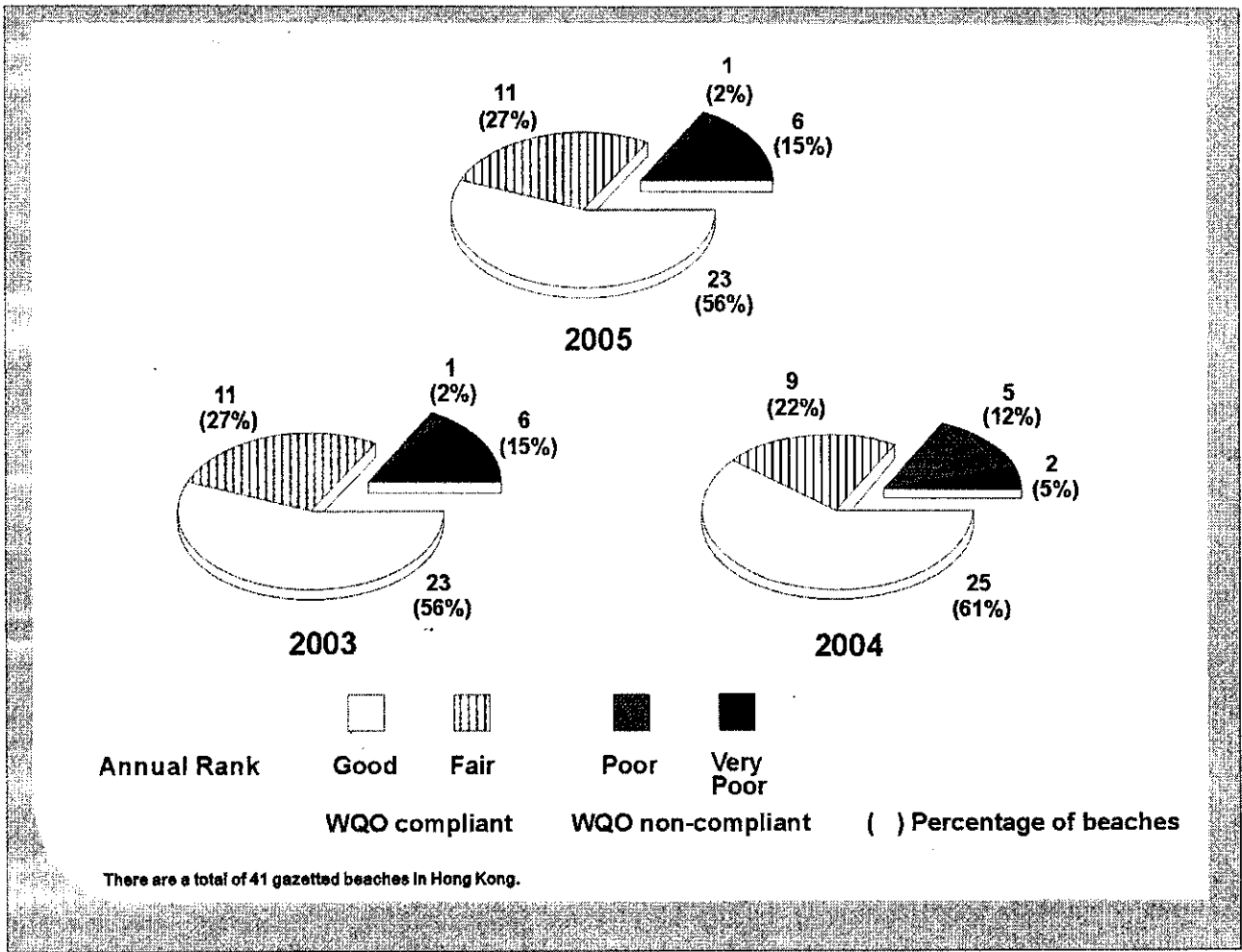


Figure 2 Annual beach rankings of 2003, 2004 and 2005