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Beach Water Quality of Hong Kong in 2010

Introduction

The purpose of this paper is to brief Members on the water quality of gazetted beaches in Hong Kong in 2010.

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 indicated 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 of 24 per 100 mL or below 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 those 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 are recommended to be closed to safeguard the health of swimmers.

Beach water quality in 2010

4. In 2010, 23 (or 56%) of the 41 gazetted beaches were ranked as “Good” and 18 (or 44%) as “Fair”. None of the beaches was rated as “Poor” and “Very Poor” (**Figure 1**).

All beaches complied with the WQO, and 2010 is the first year, since our monitoring started in 1986, which recorded full compliance with the WQO. The steady improvement of beach water quality over the past years, as observed from the WQO's compliance rate (63 % in 1997, 83% from 2003 to 2008, and 93% in 2009), is shown in **Figure 2**.

5. The improvement in the overall WQO's compliance rate in 2010 was due to upgrading of the annual ranking of three Tsuen Wan beaches, namely Anglers', Approach and Gemini Beaches from "Poor" in 2009 to "Fair" in 2010. The improvement was brought about by the Government's continuous effort in extending the sewerage network to the beach hinterland, in enforcing environmental legislation, and in commissioning the Advance Disinfection Facilities (ADF) at the Stonecutters Island Sewage Treatment Works (STW).

6. Apart from the above changes, the annual rankings of Clear Water Bay Second Beach in Sai Kung and Ma Wan Tung Wan Beach on Ma Wan Island were improved from "Fair" in 2009 to "Good" in 2010, while the rankings of the Hairpin and Rocky Bay Beaches were changed from "Good" in 2009 to "Fair" in 2010. These changes were generally within the normal range of fluctuation of the beach water quality.

Closed beaches in Tsuen Wan

7. The seven closed beaches in Tsuen Wan, namely Anglers', Approach, Casam, Gemini, Hoi Mei Wan, Lido and Ting Kau Beaches, are located along the Tsuen Wan coast. During the 2010's bathing season, the water quality of the beaches all complied with the WQO for bathing waters.

8. The improvement of the beach water quality was mainly brought about by the phased provision of new public sewers in the beach hinterland along the Castle Peak Road and the commissioning of the ADF at the Stonecutters Island STW on 1 March 2010. The ADF is designed to disinfect the treated effluent of the Stonecutters Island STW before discharge through the submarine outfall; and since its commissioning, the bacteriological level of the marine waters in the western part of the Victoria Harbour has markedly reduced by 57 %. The new sewers along the Castle Peak Road were completed in early 2010, and the sewage from the residential developments located in the beach hinterland is progressively collected for treatment at the Sham Tseng STW. The water quality improvement brought about by the sewerage works is illustrated by the water quality trend lines of Approach and Lido Beaches (**Figure 3**).

Conclusion

9. All 41 gazetted beaches complied with the WQO in 2010. In light of the continuous improvement of beach water quality of the Tsuen Wan beaches, four closed beaches namely Approach, Casam, Lido and Hoi Mei Wan Beaches, are planned to be re-opened to the public for swimming in 2011 by the Leisure and Cultural Services Department (LCSD). As for the remaining three beaches, namely Anglers', Gemini and Ting Kau Beaches, extensive construction and improvement works on the beach facilities are needed so as to meet the latest requirements of LCSD's bathing beaches. These three beaches are planned to be re-opened in 2013. EPD will continue to closely monitor the seven beaches along the Tsuen Wan coast in the coming bathing season, in order to ascertain that the observed improvement can be sustained and that the water quality can continue to meet the WQO.

Environmental Protection Department
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Figure 1 Annual beach rankings of 2010

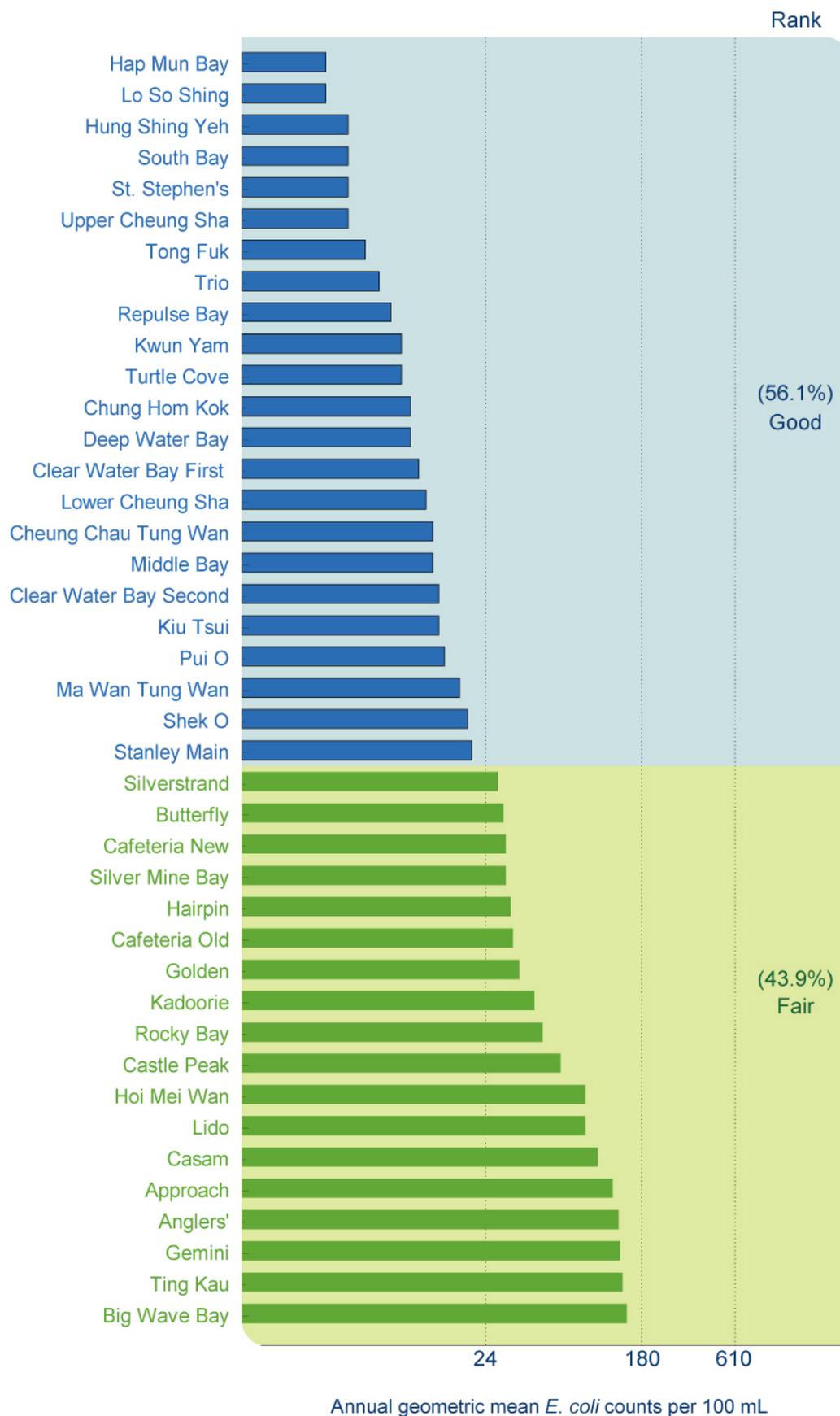


Figure 2 Annual beach ranking in 1997 and the marked improvement over the last 3 years (2008, 2009 and 2010)

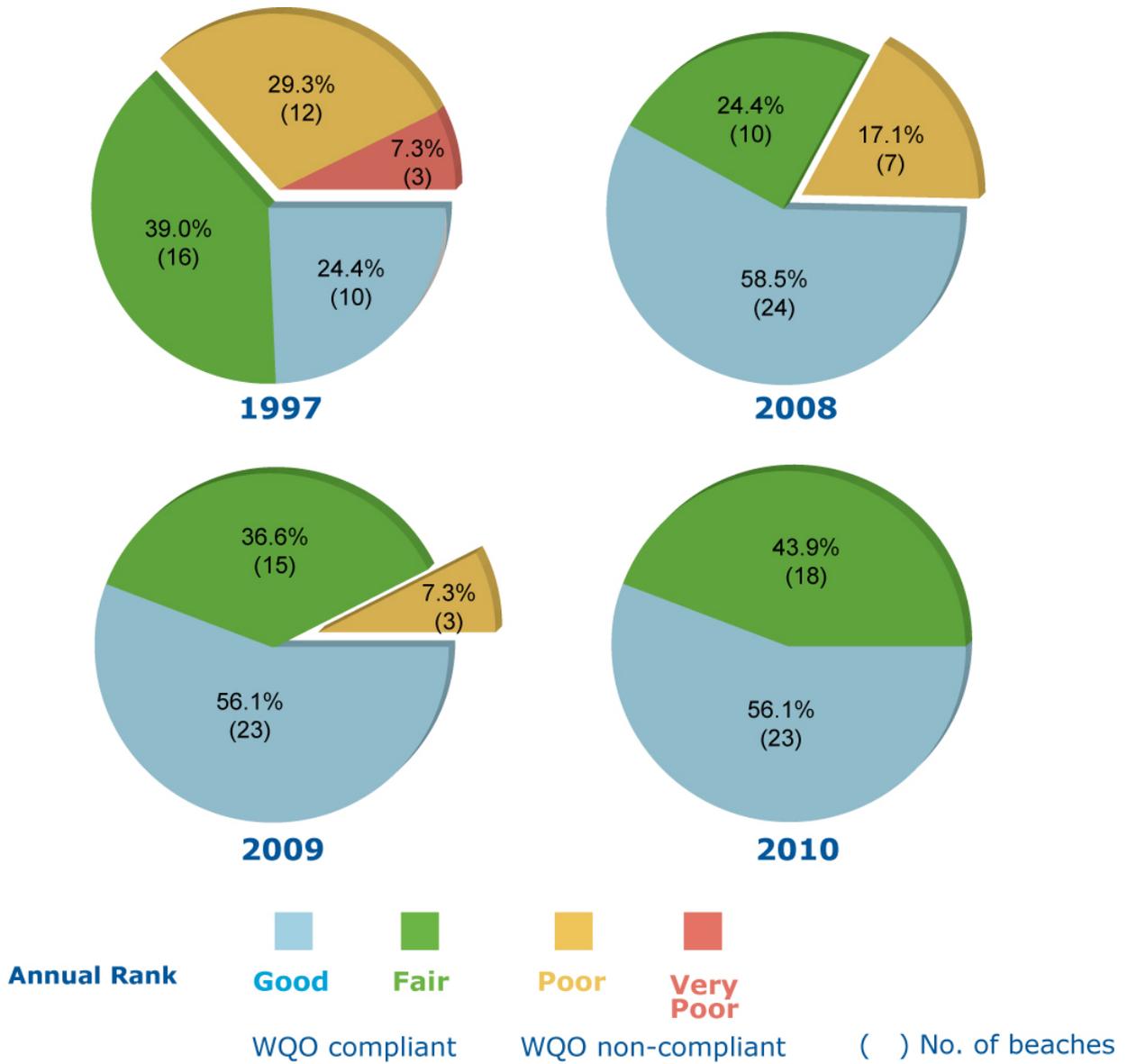


Figure 3 Water quality trend lines of Approach and Lido Beaches annotated with milestones of some sewerage projects

