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For information

Interim Report on River and Marine Water Quality in Hong Kong in 2004

Introduction

This paper provides a preliminary assessment and a summary of water quality data of representative river and marine water monitoring stations in Hong Kong in 2004. A full account of the river and marine water quality will be available on Environmental Protection Department's website (http://www.epd.gov.hk) at the end of 2005.

River Water Quality

2. With the implementation of environmental legislation and sewerage works, the water quality of Hong Kong's rivers has shown steady improvement since the mid 80s. However, the upward trend has been arrested in the last few years, mainly due to pollution from livestock farms and unsewered villages in the Deep Bay catchment.

3. In 2004, 76.9% of the river monitoring stations attained a Water Quality Index (WQI) grading of "Excellent" or "Good", slightly (1.3%) above that in 2003; however, the number of monitoring stations in the "Bad" and "Very Bad" categories also had a similar increase (1.3%) (**Figure 1**).

4. Of the 12 major rivers, measured at the most downstream monitoring stations, seven have attained a grading of "Good" or "Excellent". The other five major rivers with a "Fair" to "Very Bad" water quality were all located in the Deep Bay area. These included Yuen Long Creek, Kam Tin River, Rivers Indus, River Ganges and River Beas (**Figure 2**).

5. Although two of the rivers were low in *E. coli* bacteria, i.e. Mui Wo River (annual geometric mean of 380 cfu/100 mL) and Ho Chung River (500 cfu/100mL), the levels in the other ten rivers were high, ranging from 1,900 cfu/100 mL in Shing Mun Main Channel to 1,600,000 cfu/100 mL in Yuen Long Creek, indicating the presence of livestock or sewage pollution (**Figure 3**).

Marine Water Quality

6. A summary of the long-term water quality data from representative marine monitoring stations in the ten Water Control Zones (**Figure 5**) is shown in **Figures 6a to 6j**. In 2004, the overall compliance with the marine Water Quality Objectives (WQOs) was maintained at a record level of 87%, similar to that in 2002 and 2003 (**Figure 4**). On the other hand, the water quality in Inner Deep Bay remained poor, with low dissolved oxygen (DO) and elevated levels of nitrogen and phosphorus, highlighting the pollution problem in Deep Bay.

7. The water quality of Port Shelter and Mirs Bay continued to be excellent, with low bacteria, nutrients and high DO. In Victoria Harbour, the water quality improvements as a result of Stage 1 of the Harbour Area Treatment Scheme (HATS) were sustained in 2004. These included an increase in DO and decrease in nitrogen in the eastern and central parts of the harbour. Although eastern harbour also experienced a reduction of *E. coli*, the levels in the central and western harbour remained elevated.

8. **Figure 7** shows the number of red tides in Hong Kong waters from 1980 to 2004. In 2004, there was a total of 34 red tides in the territory, higher than that reported in 2003 (i.e. 20 incidents), but still within the normal range of annual red tide incidents in the territory. There was no report of red tide-related fish kill during the year.

Conclusions

9. In 2004, the number of river monitoring stations attaining a “Good” or “Excellent” WQI grading has slightly increased by 1.3%, but that with “Bad” or “Very Bad” grading also showed a similar increase. The water quality of the major rivers in the Deep Bay catchment remained unsatisfactory, with low WQI and high *E. coli*, mainly due to pollution from livestock farms and unsewered villages.

10. The overall compliance with the marine WQOs in 2004 was maintained at a record level of 87%, similar to that in 2002 and 2003; however, the water quality in Inner Deep Bay remained poor. The improvements in the eastern and central parts of Victoria Harbour as a result of the commissioning of Stage 1 of HATS were sustained in 2004.

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