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*For information by circulation*

### **River and Marine Water Quality in Hong Kong in 2012**

#### **INTRODUCTION**

The Environmental Protection Department (EPD) conducts long-term monitoring of river and marine water quality and publishes the annual reports in the following year. The 2012 river and marine water quality reports are now available for the public's reference at the EPD's website (<http://www.epd.gov.hk>)<sup>1</sup>. This paper summarises the state of rivers and marine waters in Hong Kong in 2012 for Members' information.

#### **RIVER WATER QUALITY**

2. The overall water quality of Hong Kong's rivers in 2012 continued to perform well. In terms of compliance with the statutory Water Quality Objectives (WQOs), the compliance rate for the year was 89% compared with 88% in 2011.

3. With regard to the Water Quality Index (WQI) which indicates the general health of the inland water courses, 66% of the river monitoring stations were graded "Excellent" and 20% "Good" in 2012. These stations are mainly located in Lantau Island, eastern and southwestern New Territories, and Kowloon.

4. The good compliance rates (**Figure 1 of Annex**) were the result of the implementation of pollution control legislation, including the Water Pollution Control Ordinance and the Livestock Waste Control Scheme introduced under

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<sup>1</sup> EPD ceased producing CD-ROMs since 2007, and only web-based versions of the reports are available.

the Waste Disposal Ordinance, and the extension of the sewerage network to local villages under the Sewerage Master Plans and the gradual connection of village houses to the new sewers.

5. In spite of the improving water quality trend, 33% of the 82 monitoring stations still contained high (over 10,000 cfu/100mL) to very high (over 100,000 cfu/100mL) levels of *E. coli* bacteria. These stations are mostly located in the northwestern part of the New Territories (for example Yuen Long Creek and Kam Tin River), and some in North District (for example River Indus, River Beas and River Ganges) and eastern New Territories (for example Tai Po River).

## MARINE WATER QUALITY

6. The overall WQO compliance rate for 2012 was 78% compared with 75% in 2011 (**Figure 2 of Annex**). A higher overall WQO compliance rate in 2012 than 2011 was mainly due to the improvement in compliance rates with the dissolved oxygen (DO) objective (from 69.7% in 2011 to 90.8% in 2012) and the ammonia-nitrogen (NH<sub>3</sub>) objective (from 97.1% in 2011 to 100% in 2012) in some Water Control Zones (WCZs) during the period.

7. Five WCZs had higher overall compliance rate in 2012, while two WCZs had lower overall compliance rate. The improvement of overall compliance rate in the Victoria Harbour, Southern, Tolo Harbour and Mirs Bay WCZs was mainly due to a higher compliance rate with the DO objective. For the Deep Bay WCZ, the improvement was due to a higher compliance rate with the NH<sub>3</sub> objective.

8. The drop in the overall compliance rate in the Western Buffer WCZ was mainly due to an increase in the total inorganic nitrogen (TIN) level at three monitoring stations which marginally failed to meet the TIN objective of 0.4 mg/L in 2012, while all four stations complied with the TIN objective in 2011. The increase in the TIN level could be due to a higher background TIN level under the influence of Pearl River discharge as reflected in the increase in TIN levels in many stations in the Northwestern and Southern WCZs, as well as the gradual increase in the flow from the four preliminary treatment plants located between North Point and Central during the period.

9. Similarly, there was a drop in the overall WQO compliance rate in Port Shelter WCZ because all nine stations failed to meet the TIN objective of 0.1

mg/L in 2012, while only two stations failed to do so in 2011. The increase in the TIN level could be due to a higher background TIN level in the eastern waters of Hong Kong brought about by an increase in shipping and port activities in the region.

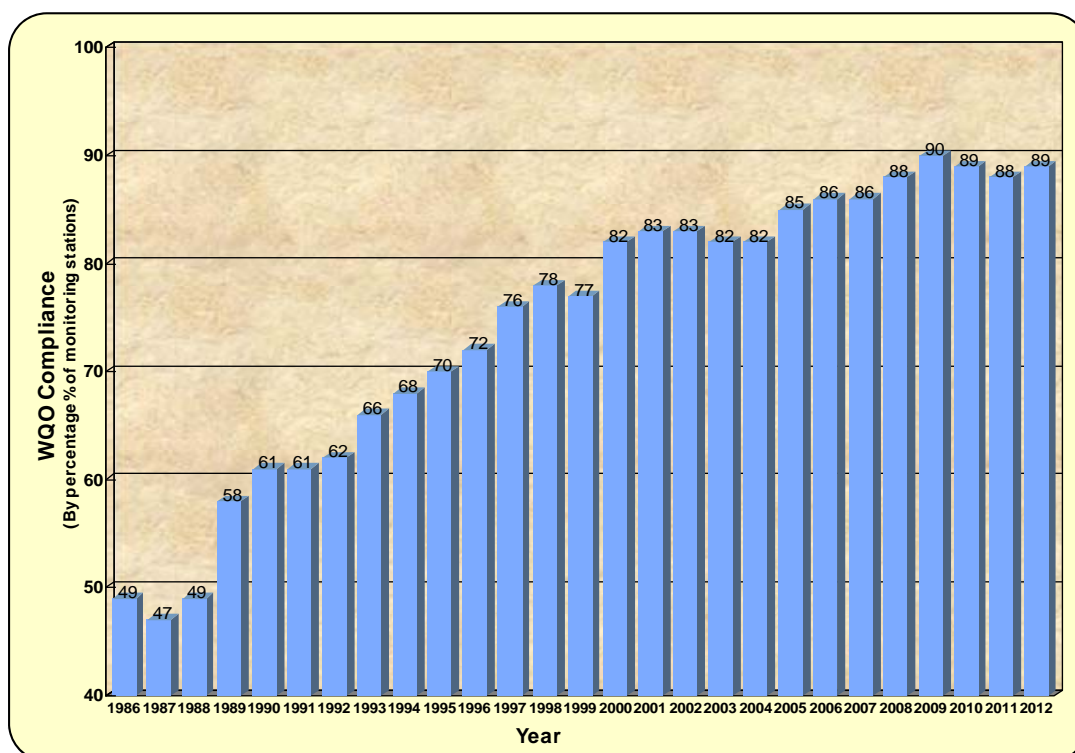
10. At a level similar to previous years, a total of 18 red tide incidents were reported in the territory in 2012. There was no record of any red tide-related fish kill during 2012.

## **CONCLUSIONS**

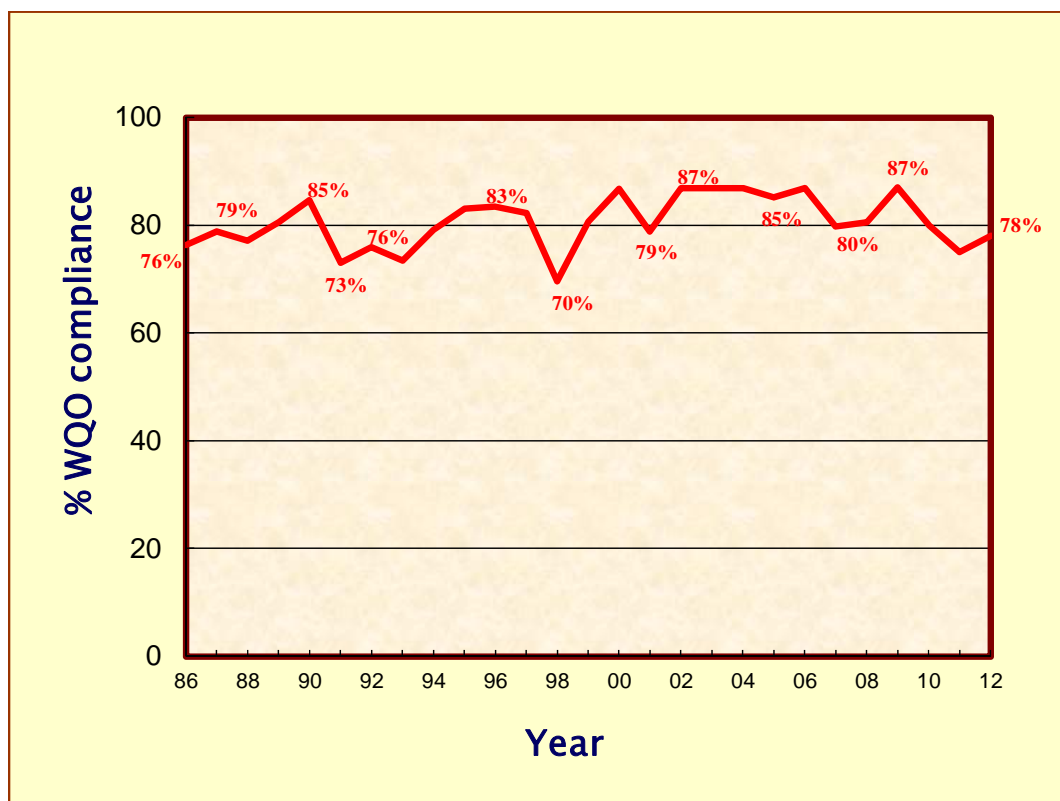
11. In 2012, the river water quality in Hong Kong continued to perform well with 86% of the monitoring stations achieving a “Good” or “Excellent” WQI grading. However, *E. coli* levels in excess of 10,000 cfu/100ml were still found in 33% of the monitoring stations located mostly in the northwestern part of the New Territories, and some in North District and eastern New Territories.

12. For marine waters, the overall WQO compliance rate for 2012 was 78%, compared with 75% in 2011. The improved overall compliance rate in 2012 was mainly due to higher compliance rates with the DO and the NH<sub>3</sub> objectives in some WCZs. On the other hand, the drop in the overall compliance rate in the Western Buffer and Port Shelter WCZs was due to a slight increase in the TIN levels resulting in a lower compliance rate with the TIN objective.

**Environmental Protection Department**  
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**Figure 1** Overall compliance with the river WQOs in Hong Kong, 1986-2012



**Figure 2** Overall compliance with the marine WQOs in Hong Kong, 1986-2012