



Room 2006, 20th floor, Murray Building, Garden Road, Central, Hong Kong
Tel: 848 2551 Fax: 845 3489

香港中環花園道美利大廈20樓2006室 • 電話: 848 2551 傳真: 845 3489 **(ACE Paper 69/96)**

for information

MARINE AND INLAND WATER QUALITY IN HONG KONG FOR 1995

INTRODUCTION

The purpose of this paper is to brief members on the status of Hong Kong's environmental waters, including coastal and inland waters, in 1995, which is described in detail in the following two reports: *Marine Water Quality in Hong Kong for 1995* and *River Water Quality in Hong Kong for 1995*, distributed with this paper.

BACKGROUND

2. Comprehensive reports on the quality of our coastal and inland waters are produced each year to serve the following main purposes:
- (a) to allow the Director of Environmental Protection to track compliance with water quality objectives and thus assess the effectiveness of existing pollution control programmes;
 - (b) to elucidate the relationship between pollution loads and water quality, and thus provide the basis for better planning for environmental protection;
 - (c) to act as a source of reference and an educational tool for academics and others who express an interest in water quality; and
 - (d) to inform the public of the state of our water environment.

Marine Waters

3. The marine report for 1995 reviews the seawater and bottom sediment quality for 1995 and gives the compliance with the key water quality objectives in the ten gazetted water control zones in existence in 1995. For the first time since the initiation of the marine monitoring programme in 1986, the 1995 marine report provides an analysis of the long-term trend with regards to change in water quality. In 1995, data were gathered from 103 water sampling stations and 64 sediment stations located in both open waters and typhoon shelters. At each sampling station, a range of physical, chemical and biological parameters are measured.

Inland Waters

4. The river report for 1995 covers 86 monitoring stations in 38 watercourses and provides an assessment of the river water quality by means of an aggregate Water Quality Index which reflects the organic, but not microbiological, pollution in the rivers. Information on the level of compliance of the rivers with their respective Water Quality Objectives is also given. With sufficient data gathered since the implementation of the river monitoring programme, it was

possible to analyse for the first time the long-term trend of the different parameters measured for each watercourse. The results of the trend analysis are summarised in the 1995 report.

STATUS OF HONG KONG WATERS

Marine Waters

5. Apart from a few locations, the marine water quality in Hong Kong showed no observable improvement in 1995. Serious nutrient enrichment, high bacterial counts and red tides still plague many of our territorial waters. Victoria Harbour was shown to possess the poorest water quality due to high bacterial count and nutrients, and low dissolved oxygen levels. Water quality in the Deep Bay, Eastern Buffer, Junk Bay and Western Buffer water control zones was also not good. Cleaner waters were only found in Mirs Bay, Port Shelter and the southern parts of Hong Kong. There were 23 reported cases of red tides in 1995, 3 more than in 1994. The sediments for the most part remained unchanged with heavy contamination by metals and organic pollutants found near developed areas.

6. Analysis of time-series data confirms that in several areas our marine waters show a long-term trend of increase in nutrients and bacterial levels caused by local wastewater discharges and cross-border inputs such as the Pearl River inflow. The deteriorating trends are expected to be rectified, however, with the various pollution abatement measures the Government is putting in place and the first signs of such reverses can be seen in parts of Tolo Harbour and Deep Bay. Tolo Harbour in particular now shows very clear signs of a decline in nutrient levels in recent years.

7. As regards the compliance with key water quality objectives for the ten water control zones, the results showed full compliance with the dissolved oxygen and total inorganic nitrogen objectives for only half of the water control zones (Figure 1). Only minor changes were found between 1994 and 1995.

Inland Waters

8. In 1995, the river water quality continued to show improvement over the past years. Based on the Water Quality Index, more sampling stations than ever before have a grading of 'excellent' for which the percentage (35%) was the greatest among all the categories (Figure 2). The percent of stations classified as 'bad' and 'very bad' decreased further in 1995 and constituted less than one-quarter of all stations. In line with the improvement as indicated by the Water Quality Index, nine watercourses in 1995 showed high average compliance (over 90%) with the specified water quality objectives (Figure 3).

9. The improvement in river water quality could be ascribed mainly to the continued implementation and enforcement of the Water Pollution Control Ordinance and the Waste Disposal Ordinance. The control of chemical waste under the Waste Disposal (Chemical Waste) (General) Regulations also contributes to the improvements. In 1995, some 89,100 tonnes of chemical wastes were properly disposed of at the Chemical Waste Treatment Centre. The progressive provision of new or improved sewerage in different areas under the different sewerage master plans is making a positive impact. Watercourses with very poor river water quality in 1995 were found mainly in the Deep Bay catchment.

CONCLUSIONS

10. Marine waters overall showed no sign of improvement in water quality in 1995 when compared to 1994. This was to be expected as no major coastal sewage treatment facilities or upgrading of treatment processes came on-stream in 1995 which would have reversed the observed deteriorating trend found in many coastal areas of Hong Kong, particularly in Victoria Harbour. Localised improvements, however, were found in a few specific areas such as in Tolo Harbour and Deep Bay. In contrast to the marine situation, the inland waters of Hong Kong continue to show improvement from year to year, with 1995 being no exception. Efforts to curb water pollution, such as enforcement of the Water Pollution Control Ordinance, provision of village sewerage and implementation of the revised livestock waste control scheme, must be kept up in order to bring the remaining watercourses, many found in the Deep Bay catchment, back to an acceptable state of health.

Environmental Protection Department
November 1996

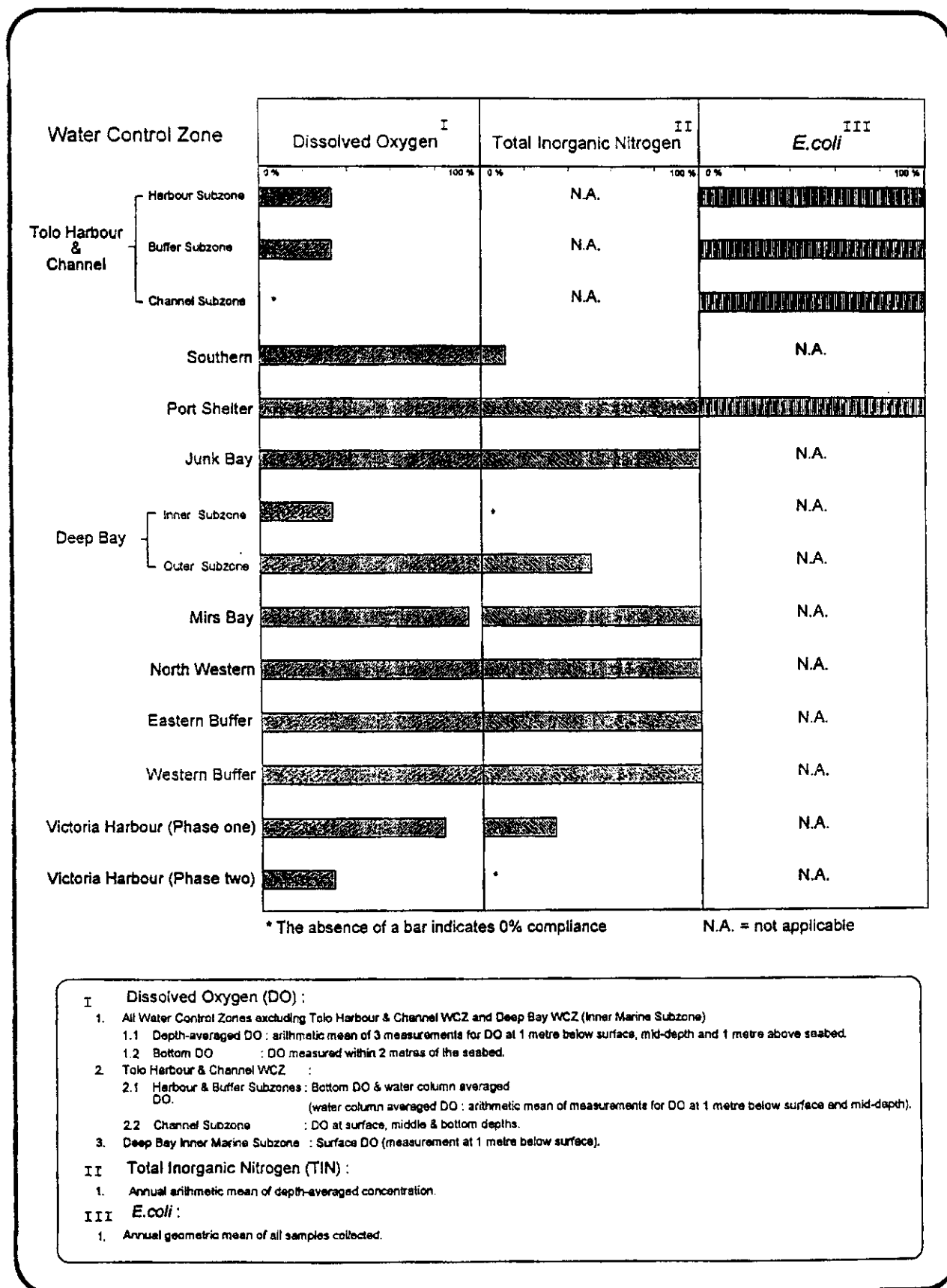


Figure 1. Level of compliance with key marine water quality objectives for the water control zones in 1995

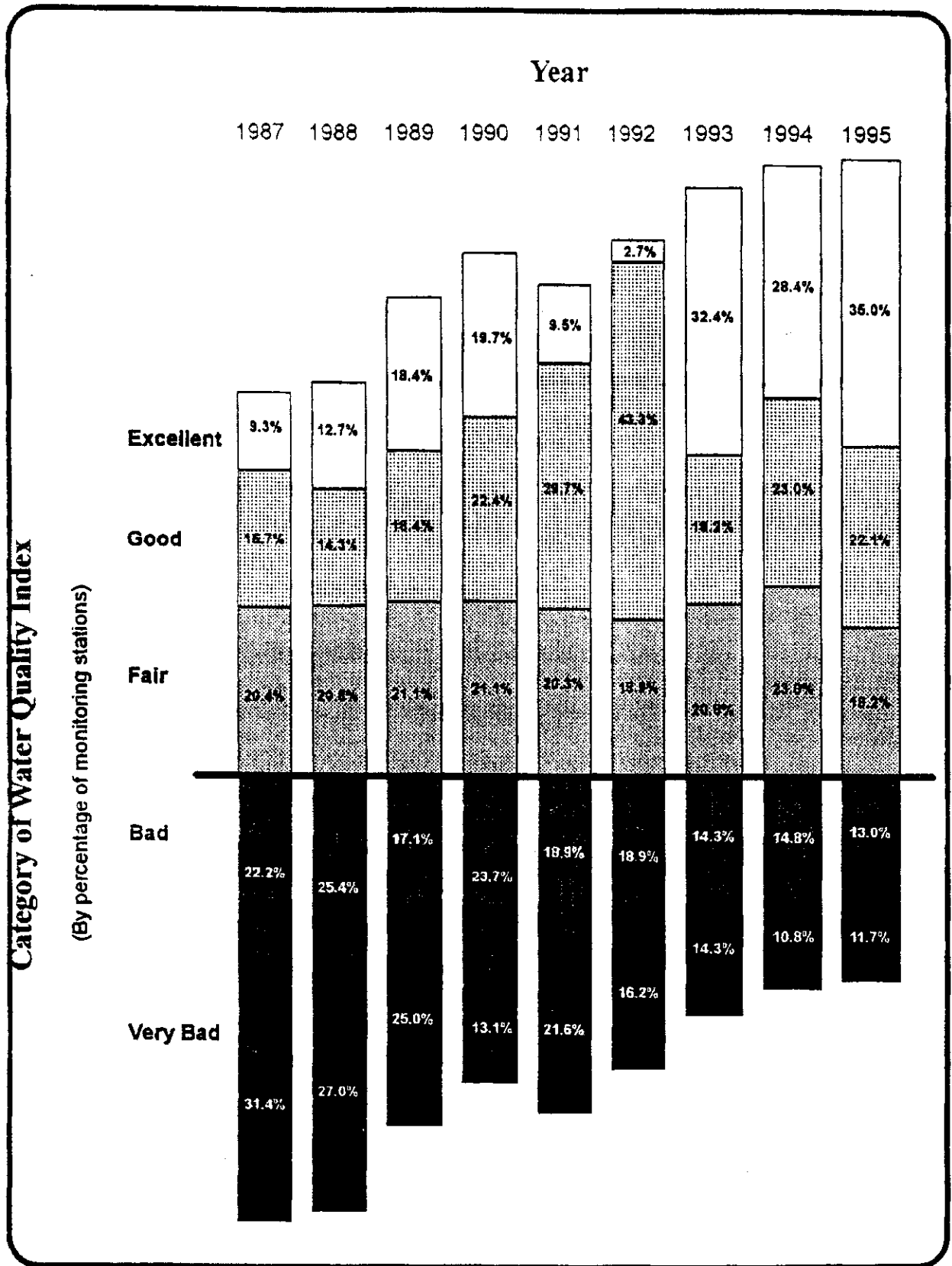
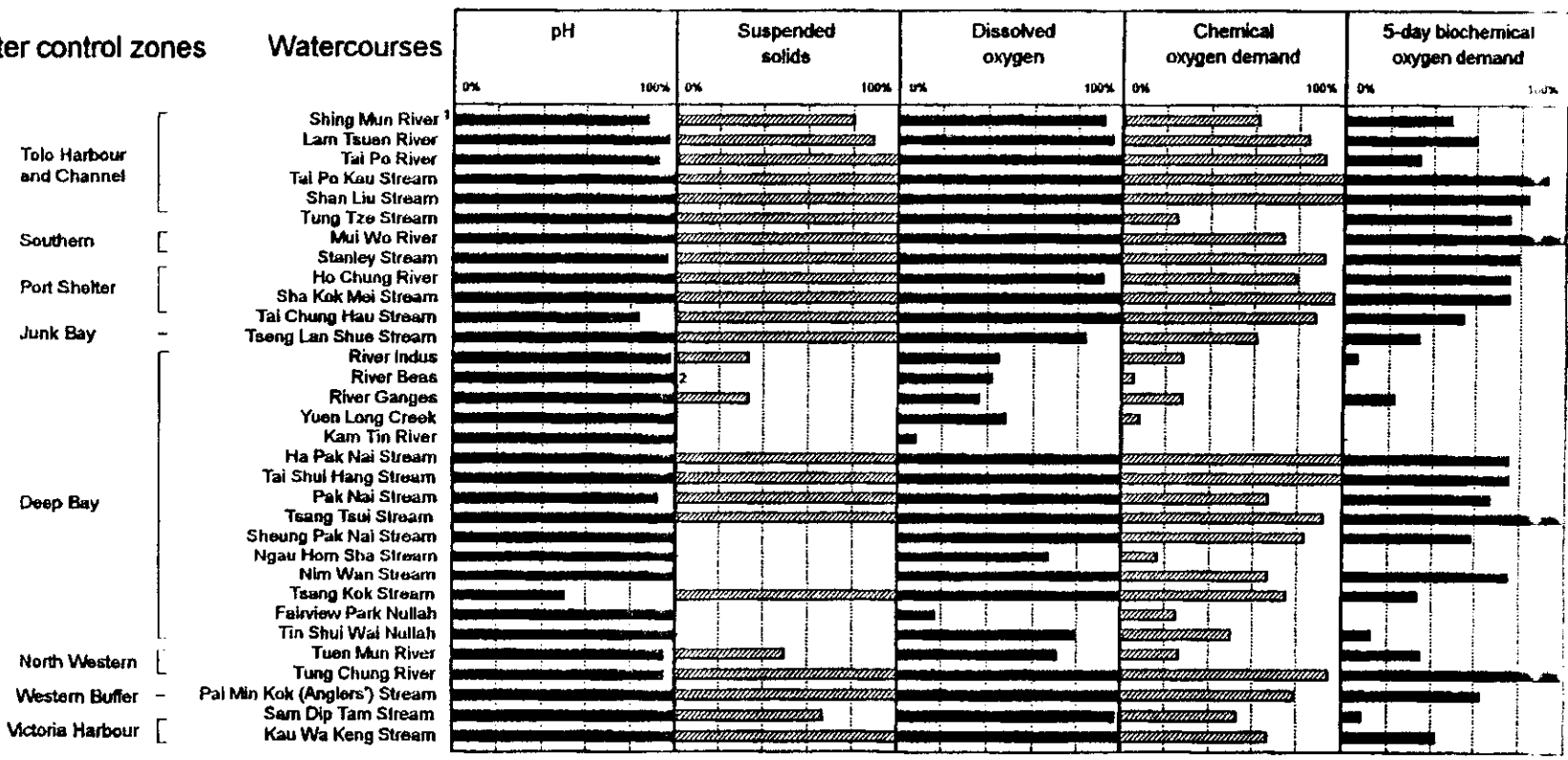


Figure 2. Improving water quality in watercourses of Hong Kong from 1987 to 1995

Water control zones

Watercourses



Notes : 1. The annual compliance of Shing Mun River is the mean compliance of the 6 watercourses in its river system.
 2. The absence of a bar indicates 0% compliance.

Figure 3. Level of compliance with inland water quality objectives for Hong Kong's watercourses in 1995