



Room 924, 9th floor, Murray Building, Garden Road, Central, Hong Kong
Tel: 2848 2606 Fax: 2530 5264
香港中環花園道美利大廈9樓924室 • 電話：2848 2606 傳真機：2530 5264

(ACE Paper 31/98)
for information

Interim Report on River and Marine Water Quality in Hong Kong in 1997

Introduction

The Environmental Protection Department publishes reports every year to inform the public about river and marine water quality in Hong Kong. The preparation of the annual reports involves the lengthy process of data collection through field sampling, *in situ* measurements and laboratory analyses, as well as gathering pollution load information, statistical analysis, report preparation and printing. The river and marine water quality reports for 1997 are scheduled to be published in November 1998. For early information of the ACE members, this paper provides a summary of the water quality data from representative monitoring stations, and a "snapshot" of the general condition of rivers and marine waters in the territory in 1997.

River water quality

2. Figure 1 shows the overall long-term trend in the river water quality index from 1987 through to 1997. The momentum of steady improvement in river water quality was maintained in 1997, with more monitoring stations (68%) than ever before receiving a water quality grading of "good" or above. Meanwhile, the percentage of stations in the "very bad" category was reduced substantially from 10.4% in 1996 to 2.5% in 1997.

3. Figures 2 and 3a-c show the water quality indices of twelve major rivers in the territory, measured at the most downstream monitoring station in each river. In 1997, the "excellent" water quality in Mui Wo River was sustained. The rivers with "good" water quality included Shing Mun Main Channel, Tai Po River, Ho Chung River, Tuen Mun River and Sam Dip Tam Stream. In the Deep Bay catchment, the water quality of the rivers Ganges, Indus and Beas, Yuen Long Creek and Kam Tin River was rated "bad" or "very bad". Although these rivers were still heavily polluted, many began to show signs of improvement in 1997.

Marine water quality

4. Figure 4 shows the frequency of occurrence of red tides in Hong Kong marine waters since 1980. There were fewer reported cases of red tides in 1997 as compared with the previous year (19 in 1997 and 25 in 1996).

5. A summary of the long-term water quality data from ten representative monitoring stations located roughly in the middle of each water control zone (Figure 5) is plotted in Figures 6a to 6j. Overall, the marine water quality in 1997 showed little change from 1996, except that an increase in total Kjeldahl nitrogen was detected at most of the stations. The increase in nitrogen, not accompanied by a notable rise in faecal bacteria (*E. coli*) nor a decline in dissolved oxygen in the water, seems unlikely to have been due to increased sewage pollution. Given the exceptionally high rainfall in 1997 (3,300 mm compared with a long-term average of 2,200 mm), it may have been due to excessive run-off of nutrient-rich stormwater from the land.

6. In general, Port Shelter and Mirs Bay continued to have the best water quality in the territory with very low levels of sewage bacteria and nutrients, and high levels of dissolved oxygen. However, the water quality in Victoria Harbour and Deep Bay remained poor with relatively low levels of dissolved oxygen and high levels of *E. coli* in 1997.

Conclusion

7. In 1997, the river water quality in the territory continued to improve. On the other hand, the overall marine water quality did not show much change compared with 1996, except for a general increase in nitrogen which might have been associated with the unusually high rainfall during the year.

Water Policy and Planning Group
Environmental Protection Department
May 1998

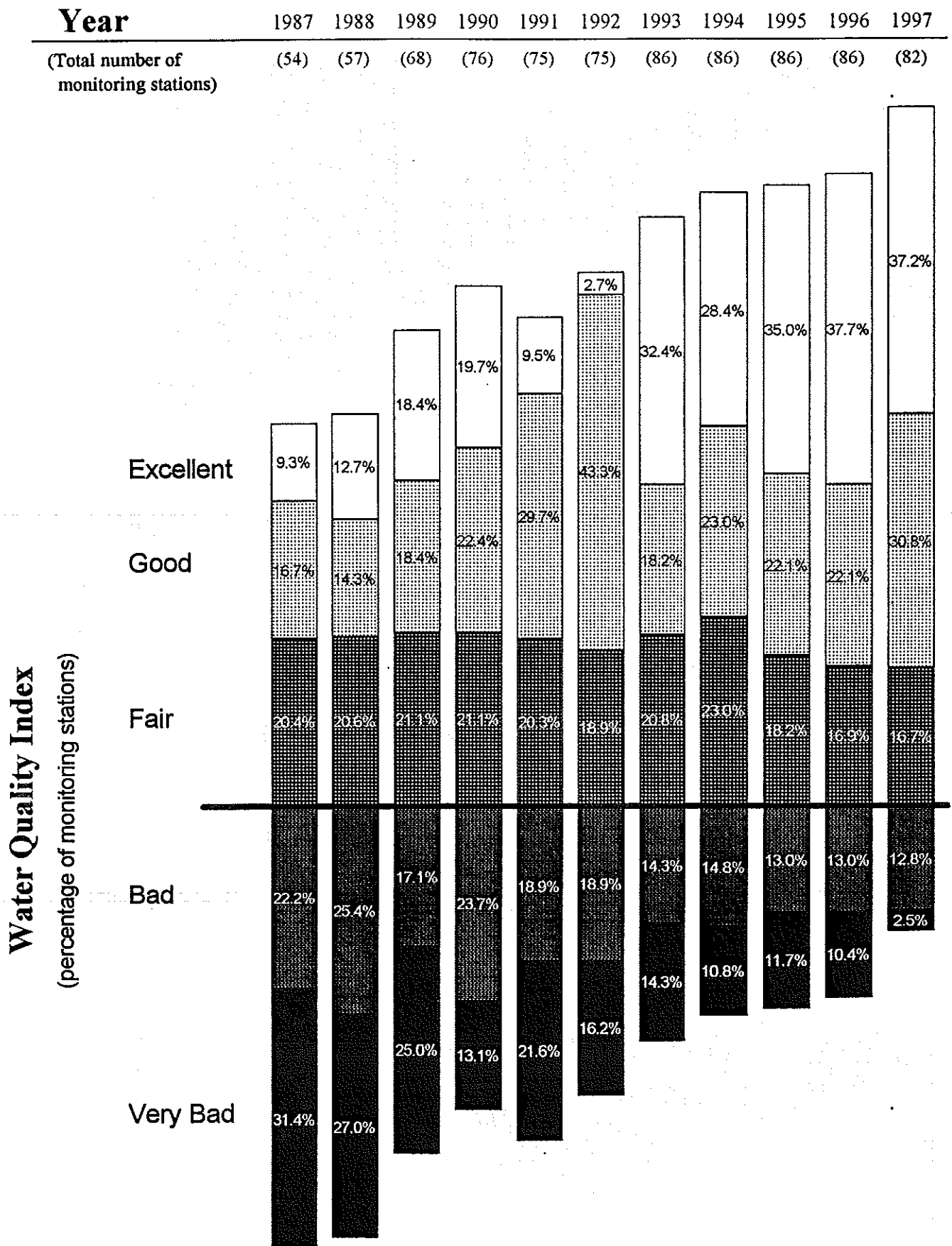


Figure 1: Improving trend of water quality in watercourses of Hong Kong from 1987 to 1997

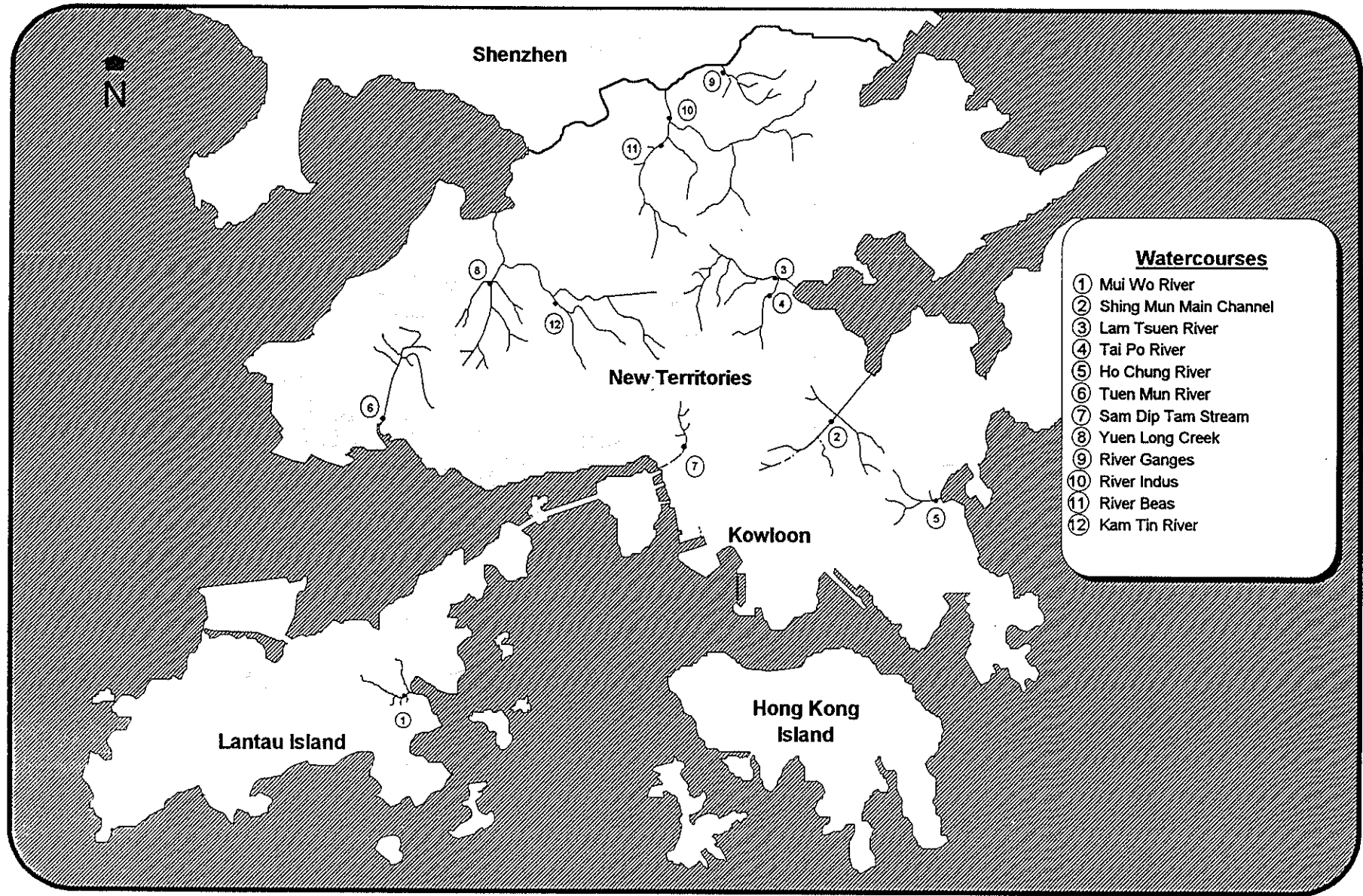


Figure 2: The most downstream monitoring stations of the twelve major watercourses in Hong Kong

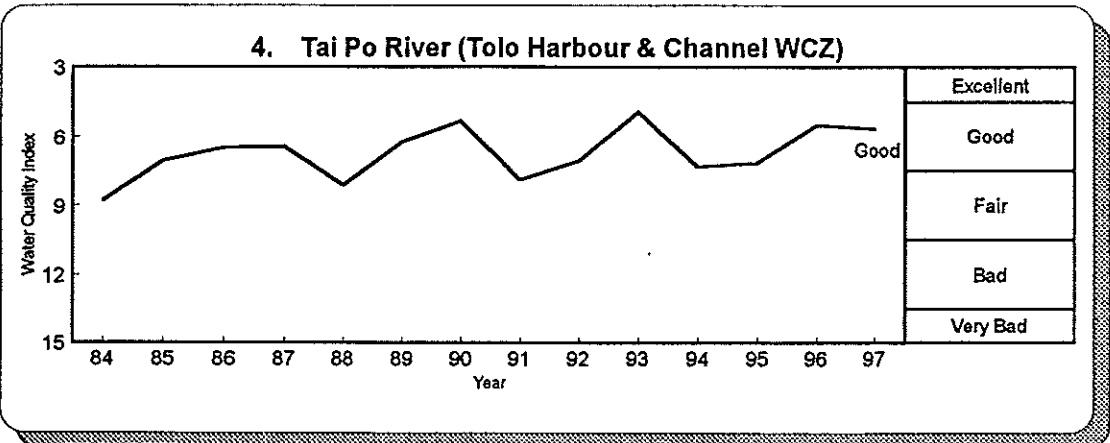
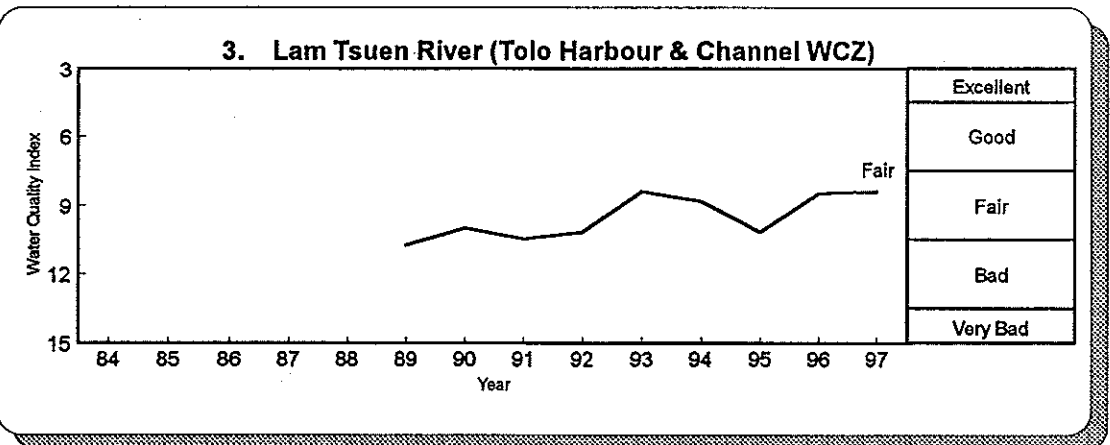
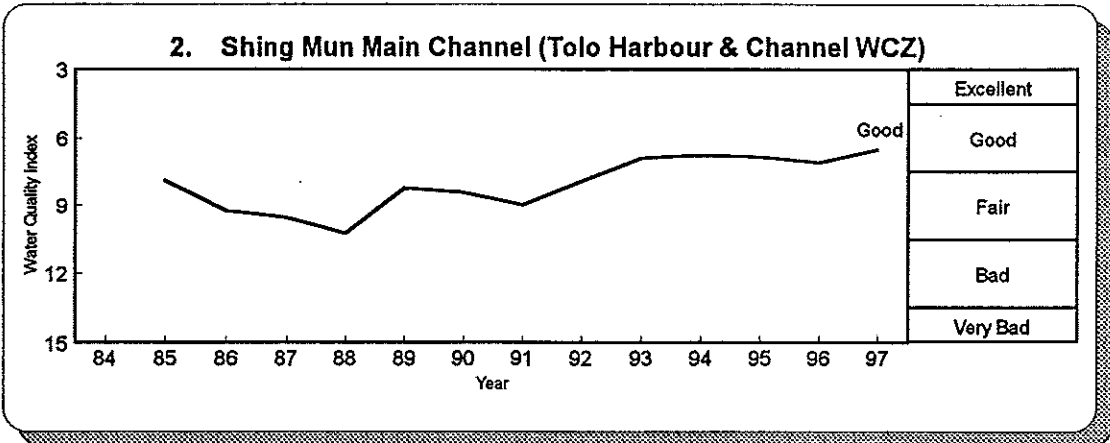
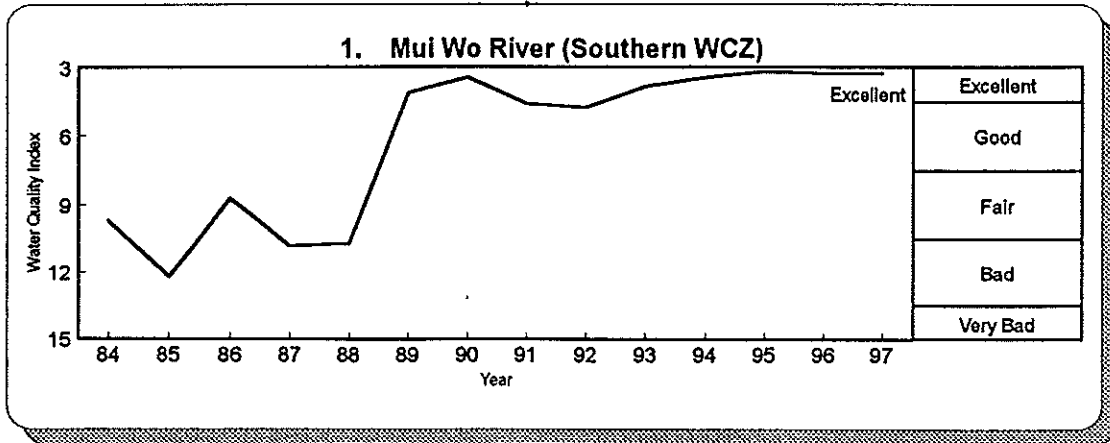


Figure 3-a: Water quality in the most downstream monitoring stations of the major rivers in Hong Kong

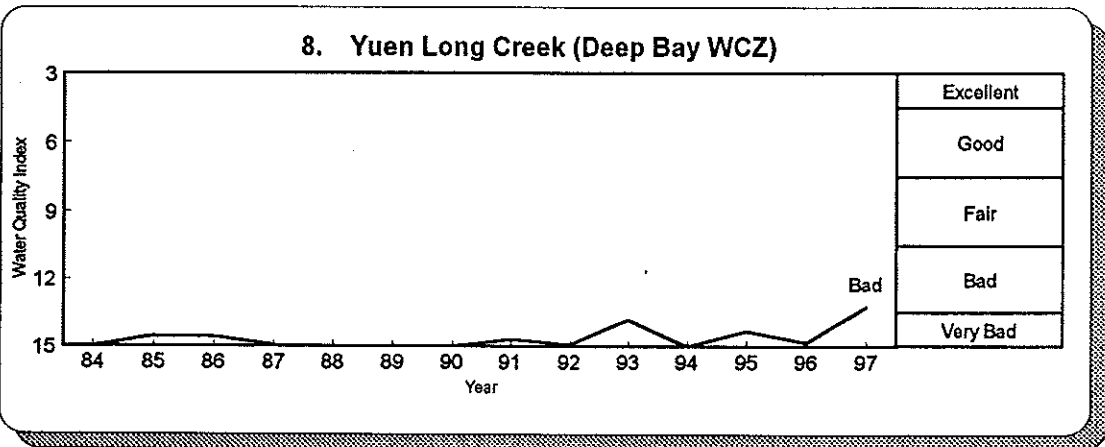
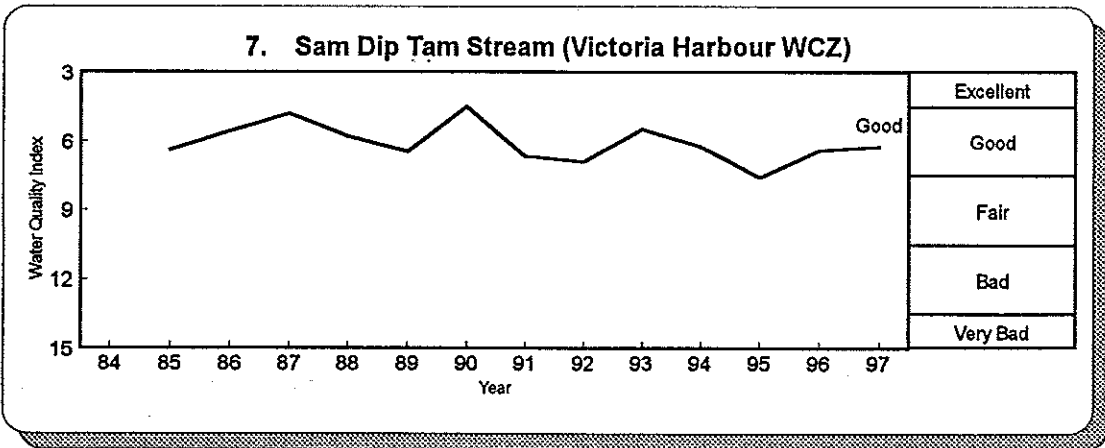
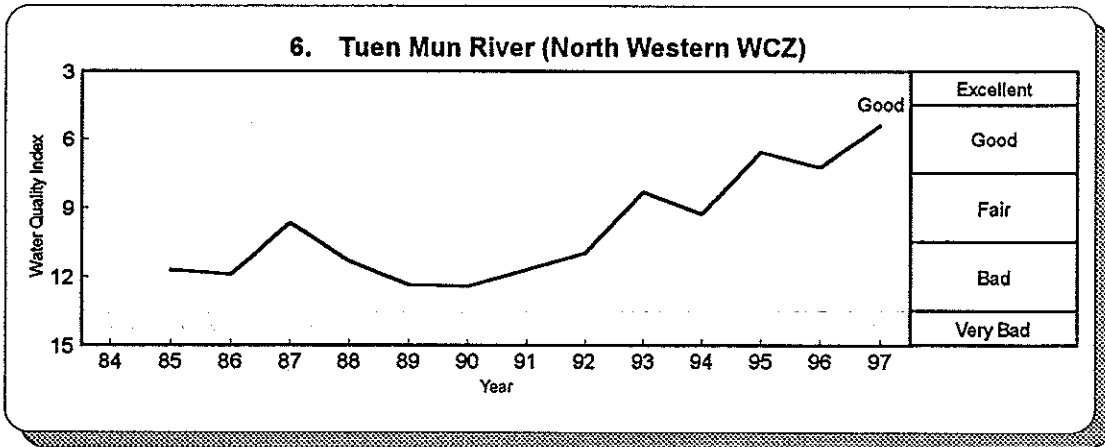
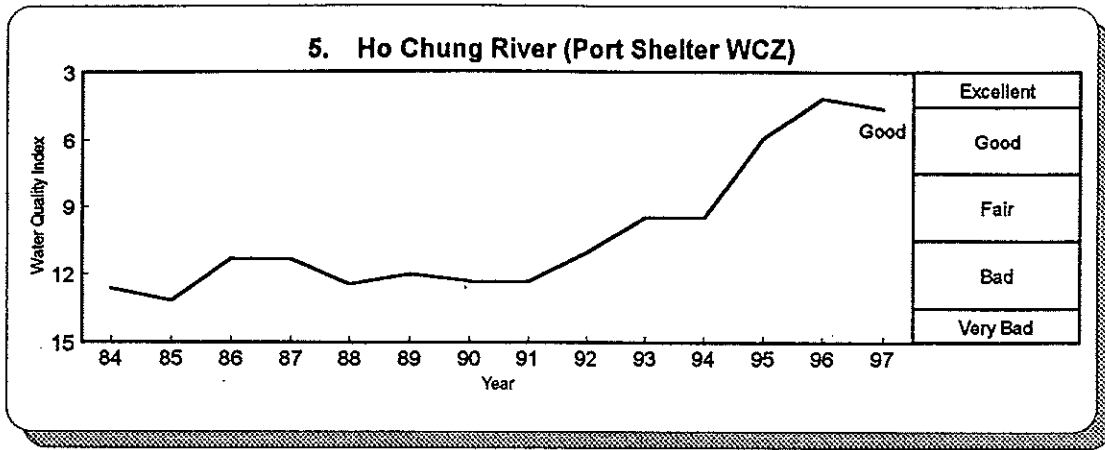


Figure 3-b: Water quality in the most downstream monitoring stations of the major rivers in Hong Kong

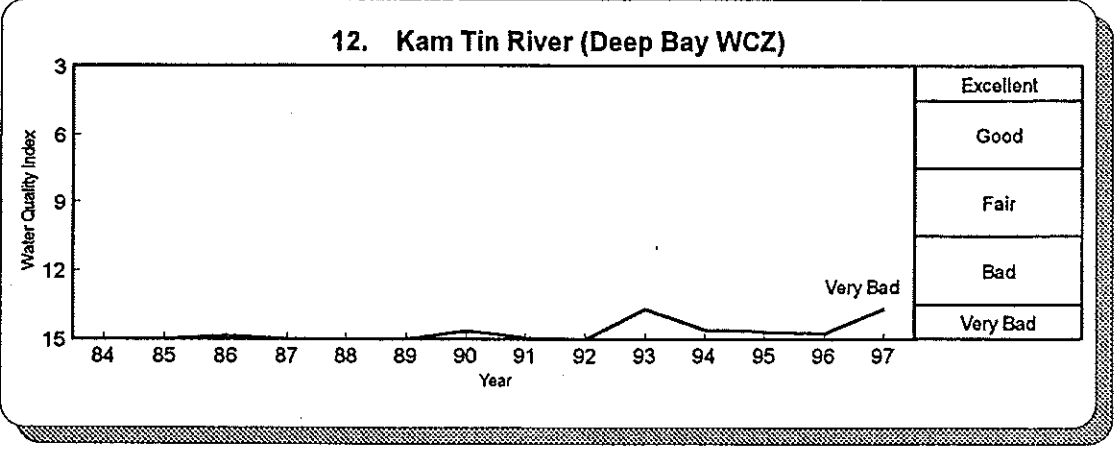
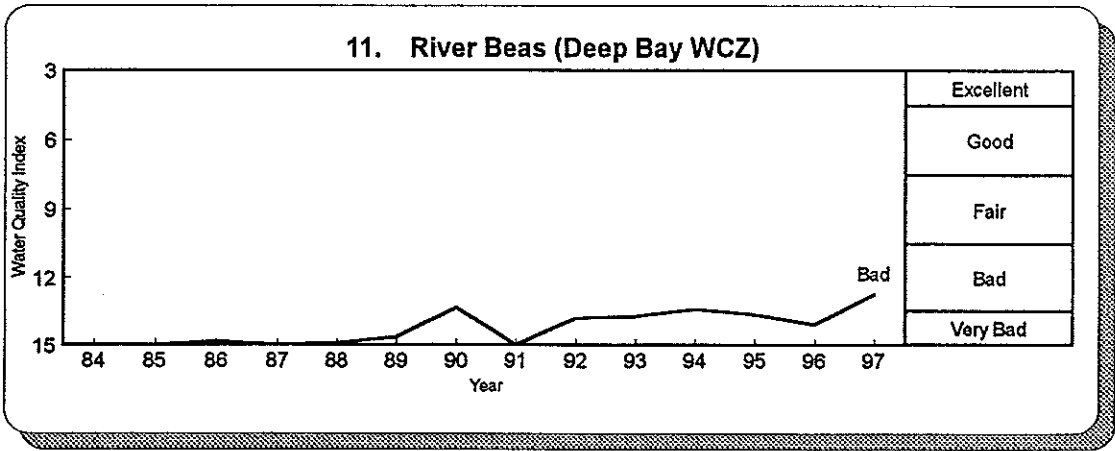
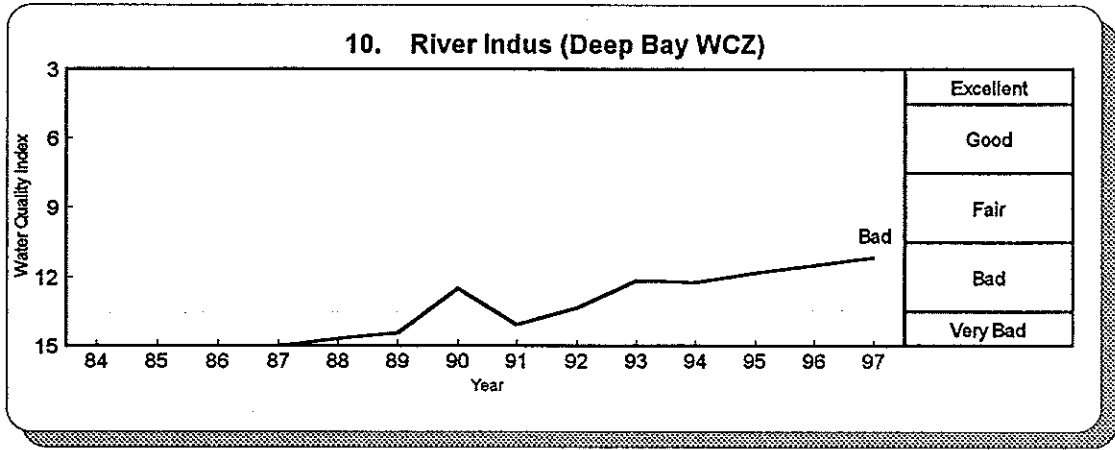
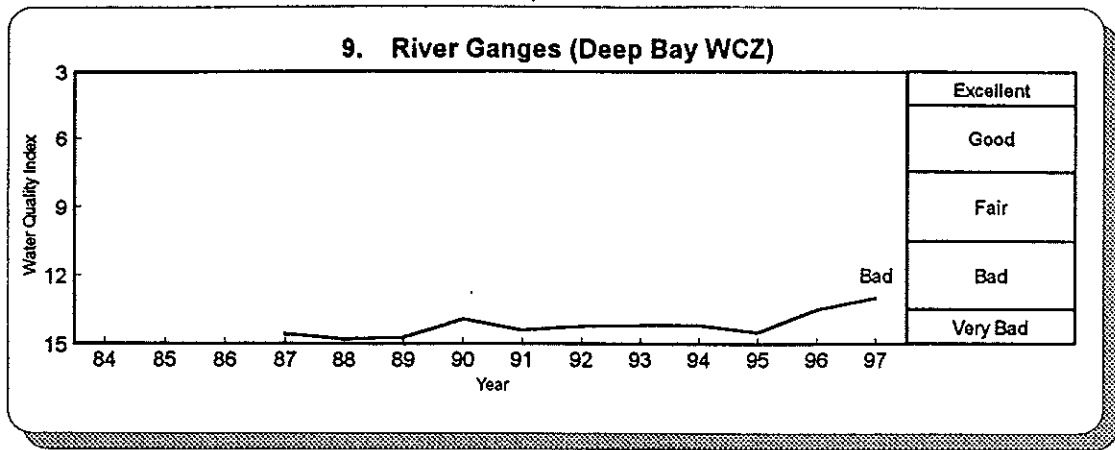


Figure 3-c: Water quality in the most downstream monitoring stations of the major rivers in Hong Kong

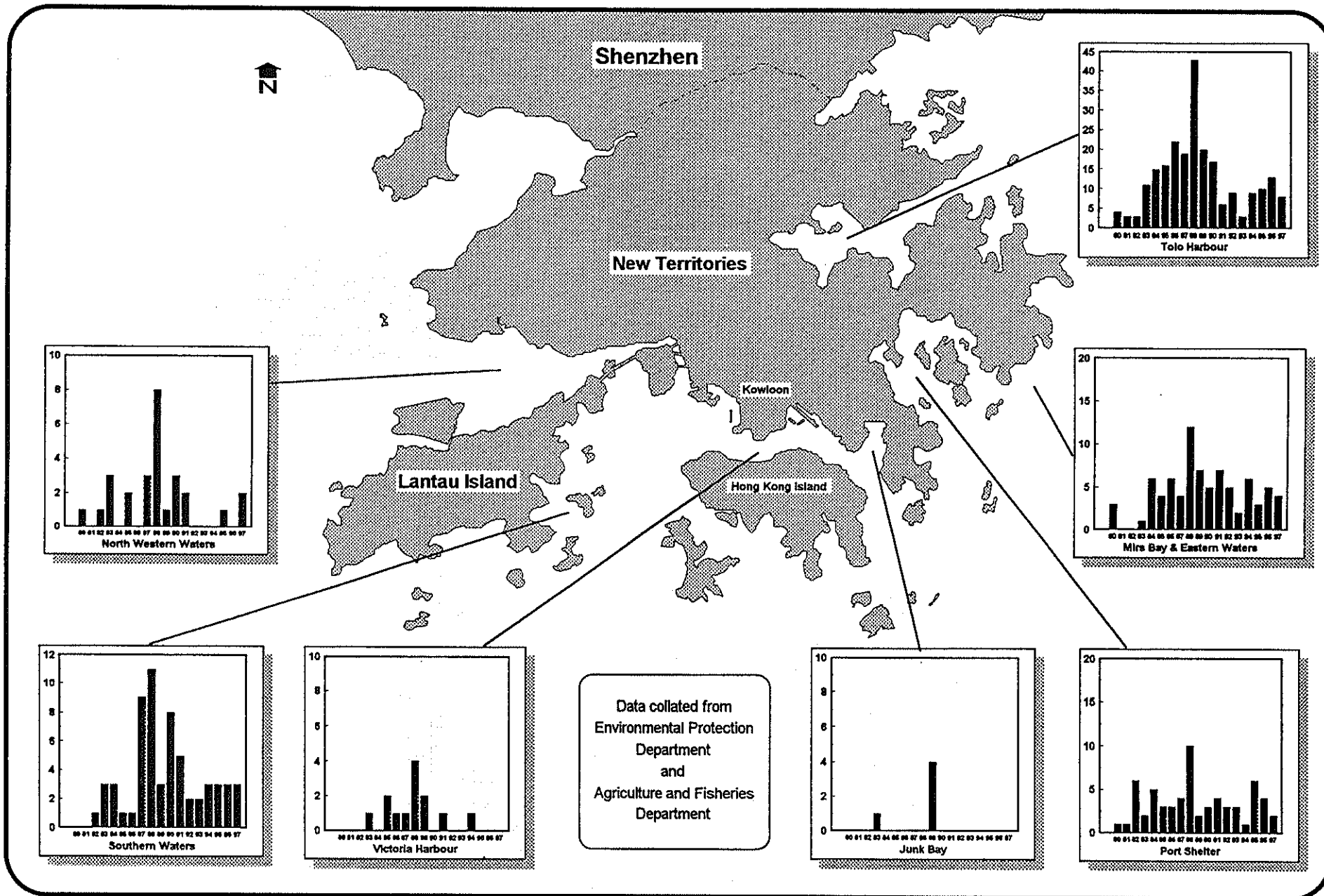


Figure 4: Frequency of red tide occurrence in Hong Kong marine waters from 1980 to 1997

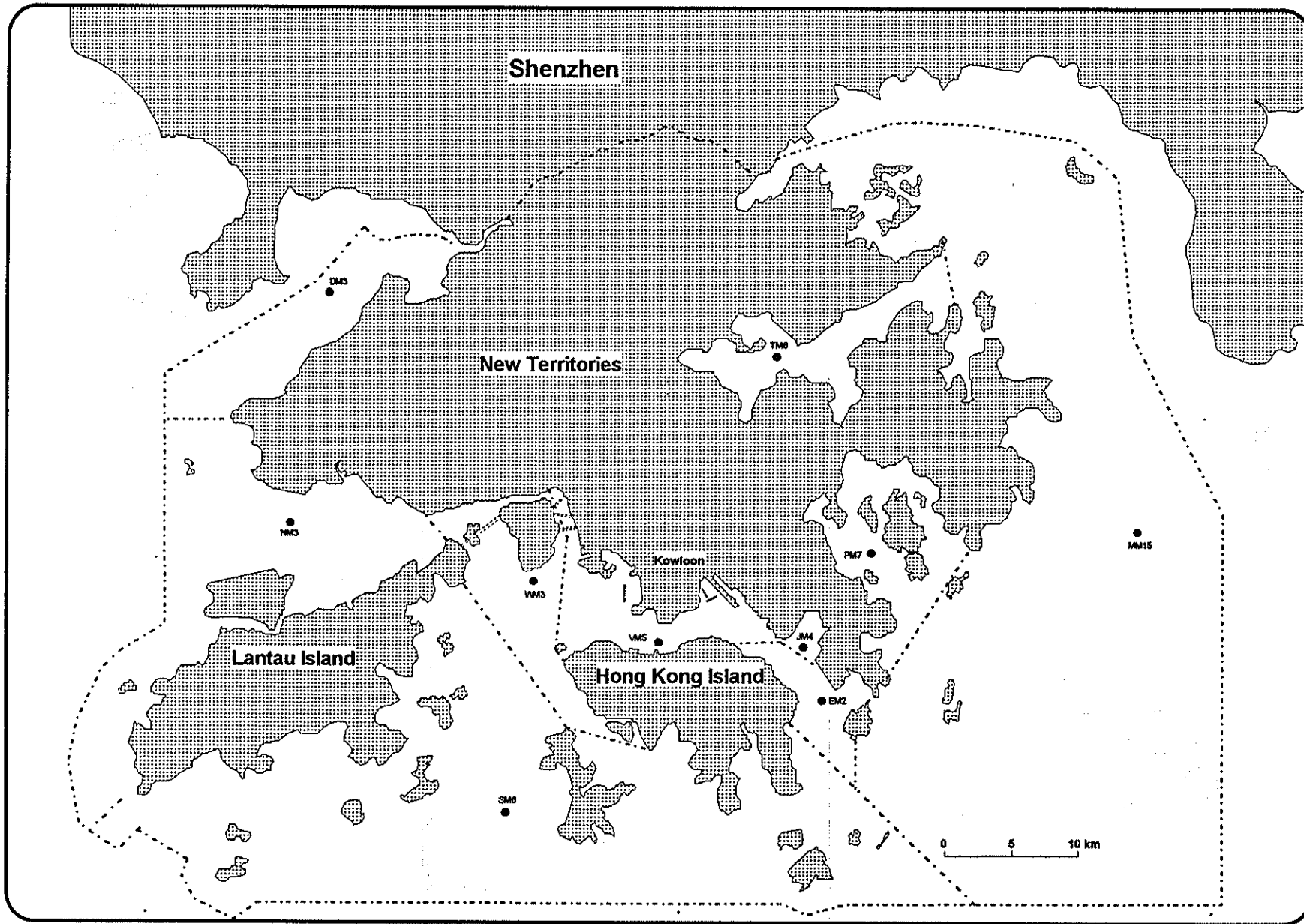


Figure 5: Representative marine water quality sampling locations in the 10 Water Control Zones

Figure 6-a: Trends in depth-averaged *E. coli*, total Kjeldahl nitrogen and dissolved oxygen at the monitoring station DM3 (Deep Bay WCZ)

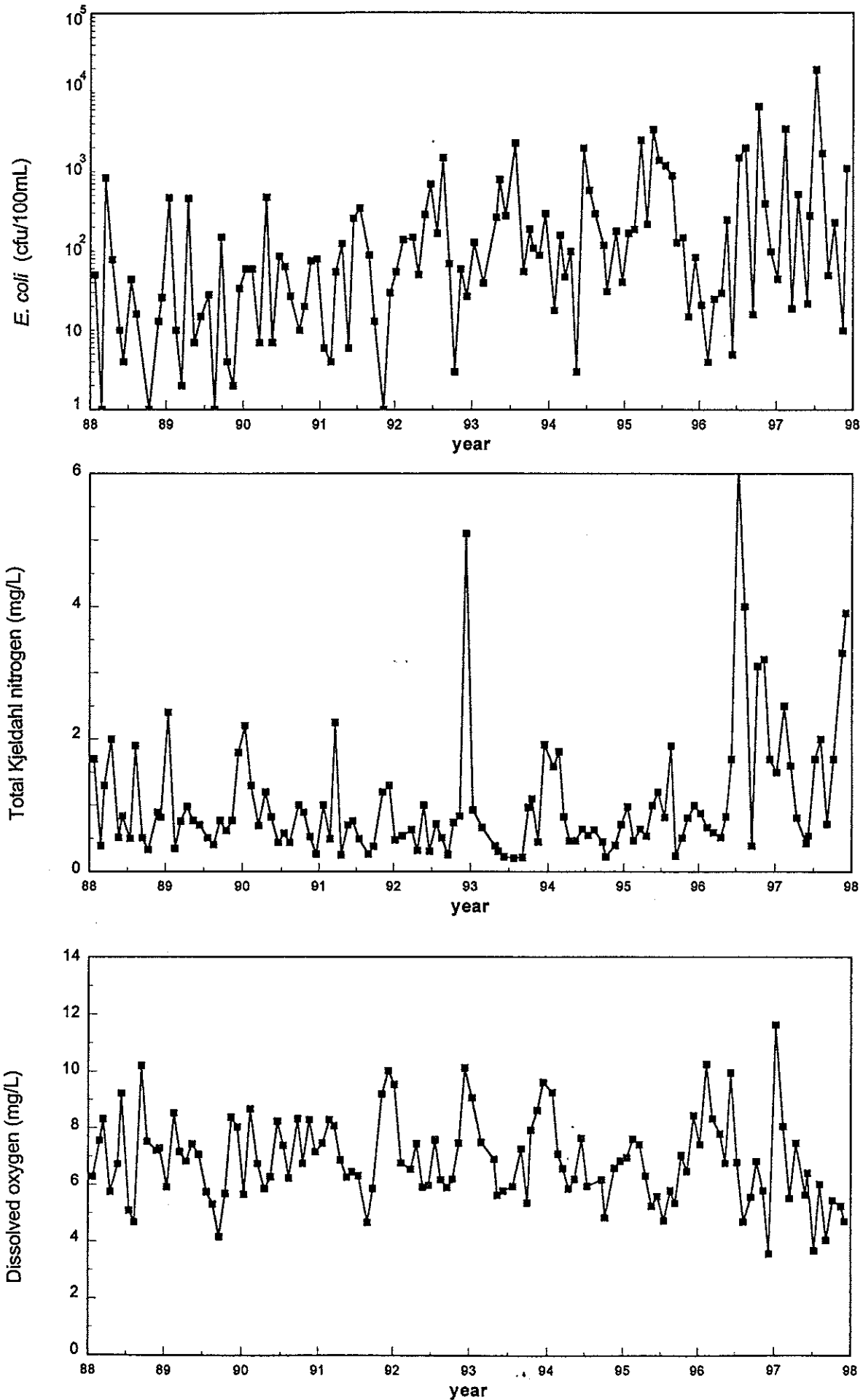


Figure 6-b: Trends in depth-averaged *E. coli*, total Kjeldahl nitrogen and dissolved oxygen at the monitoring station NM3 (North Western WCZ)

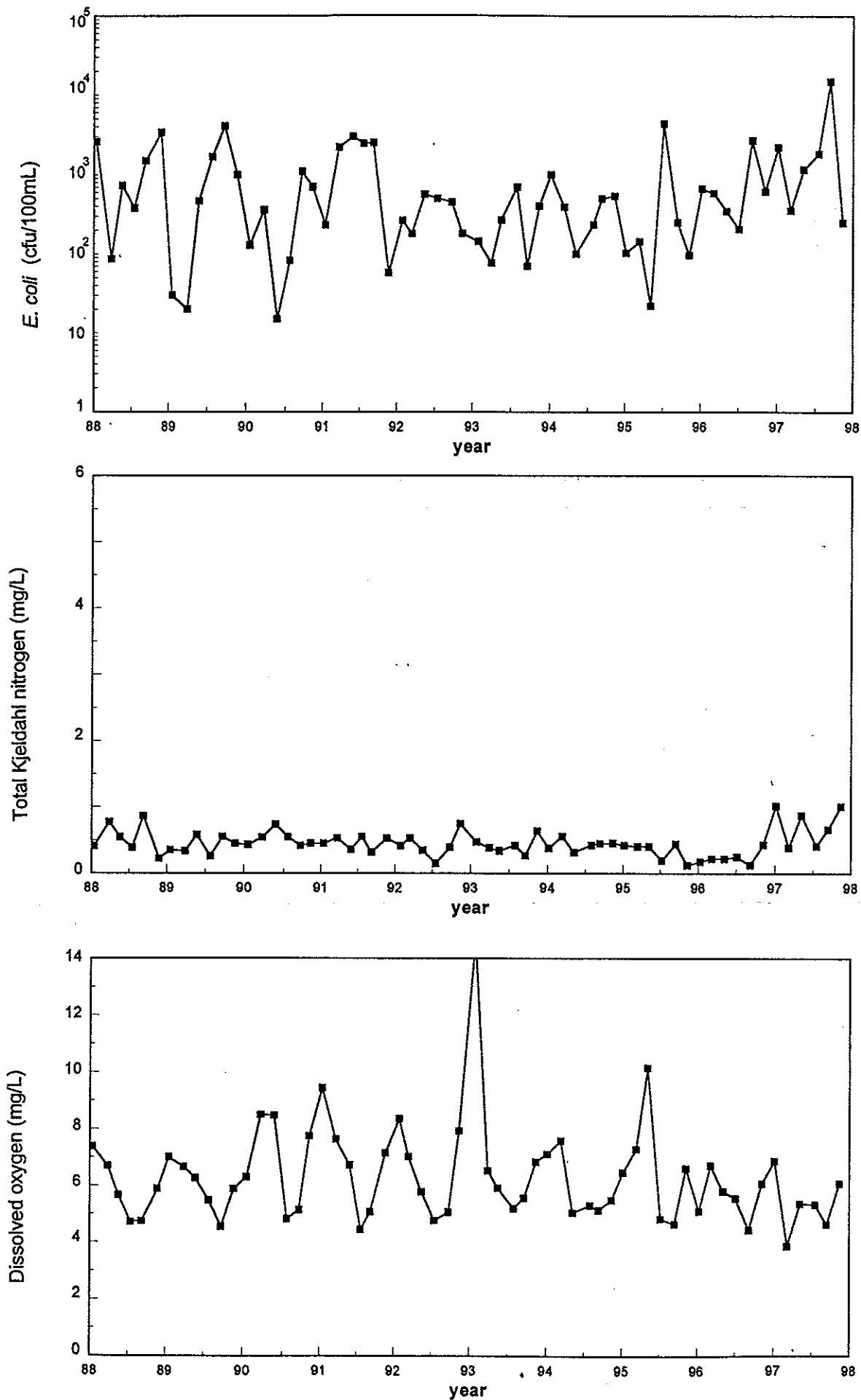


Figure 6-c: Trends in depth-averaged *E. coli*, total Kjeldahl nitrogen and dissolved oxygen at the monitoring station SM6 (Southern WCZ)

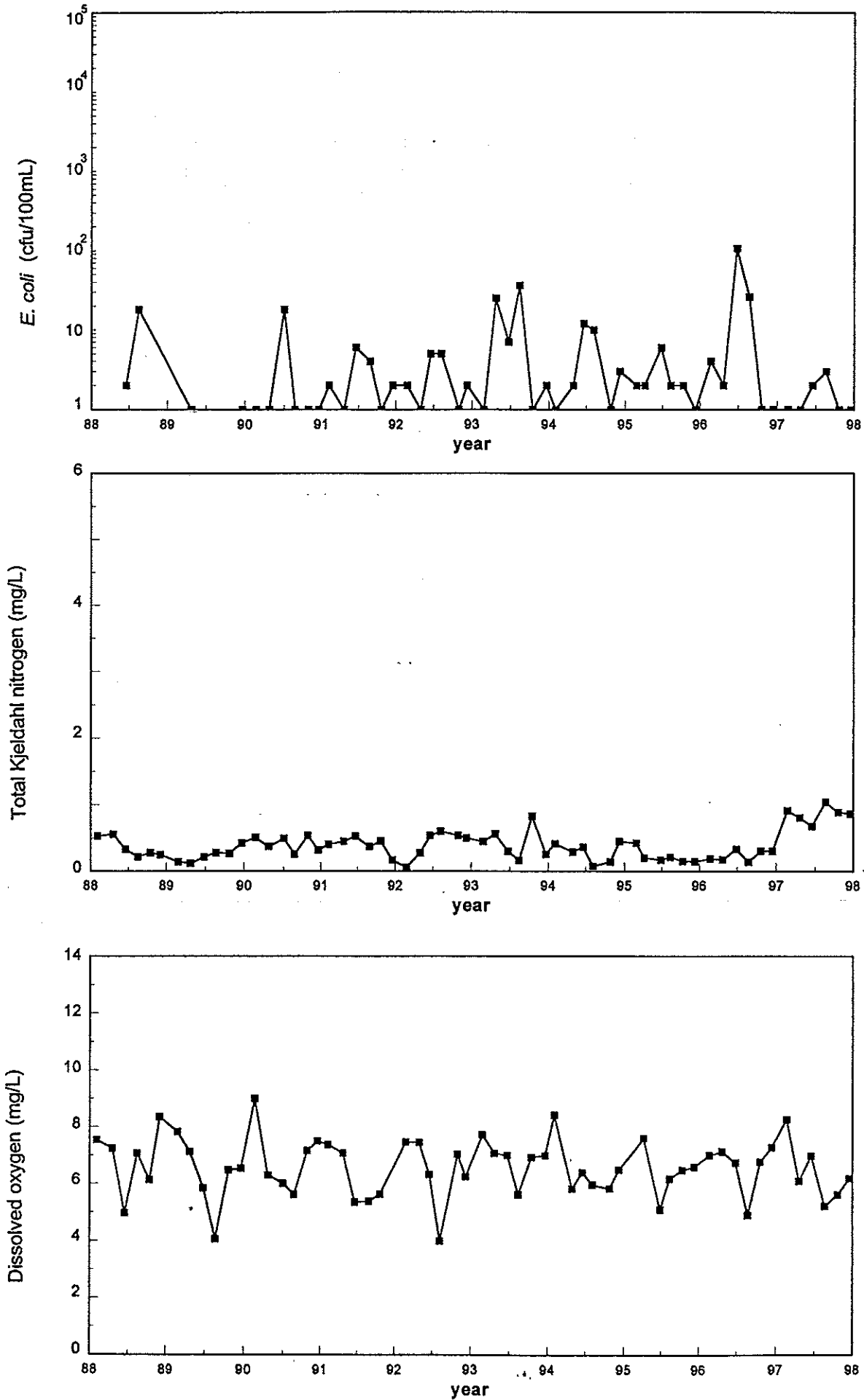


Figure 6-d: Trends in depth-averaged *E. coli*, total Kjeldahl nitrogen and dissolved oxygen at the monitoring station WM3 (Western Buffer WCZ)

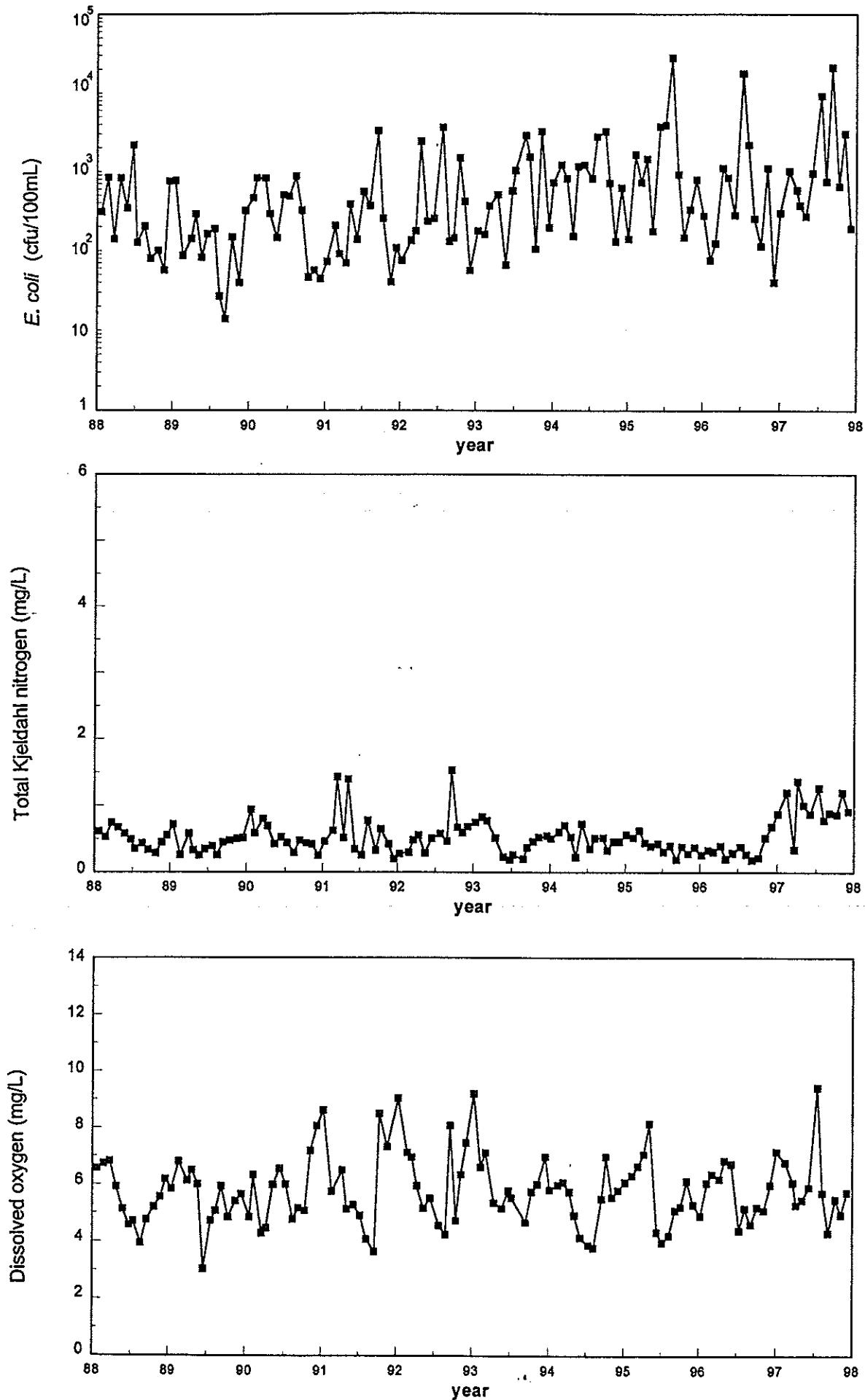


Figure 6-e: Trends in depth-averaged *E. coli*, total Kjeldahl nitrogen and dissolved oxygen at the monitoring station VM5 (Victoria Harbour WCZ)

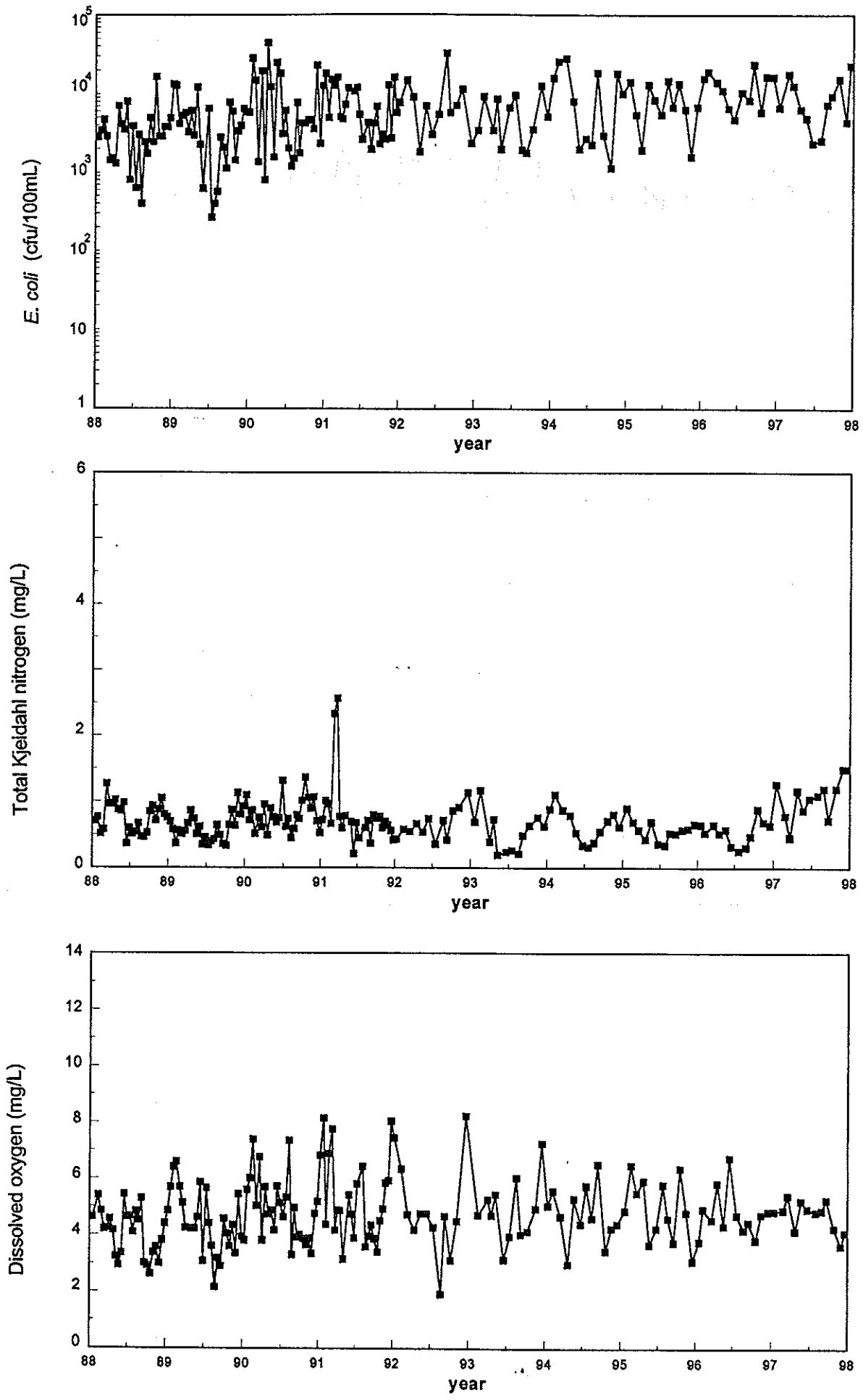


Figure 6-f: Trends in depth-averaged *E. coli*, total Kjeldahl nitrogen and dissolved oxygen at the monitoring station JM4 (Junk Bay WCZ)

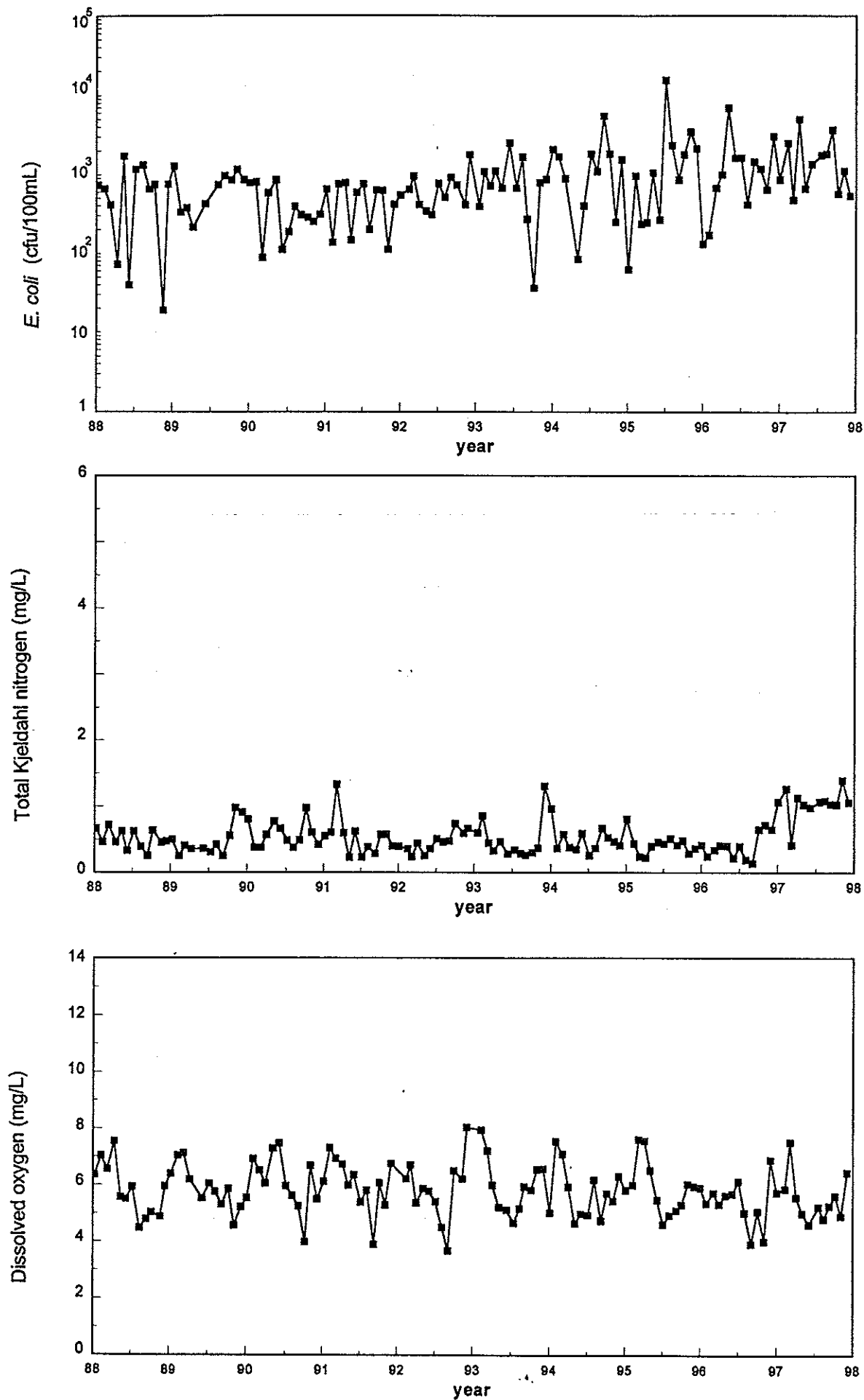


Figure 6-g: Trends in depth-averaged *E. coli*, total Kjeldahl nitrogen and dissolved oxygen at the monitoring station EM2 (Eastern Buffer WCZ)

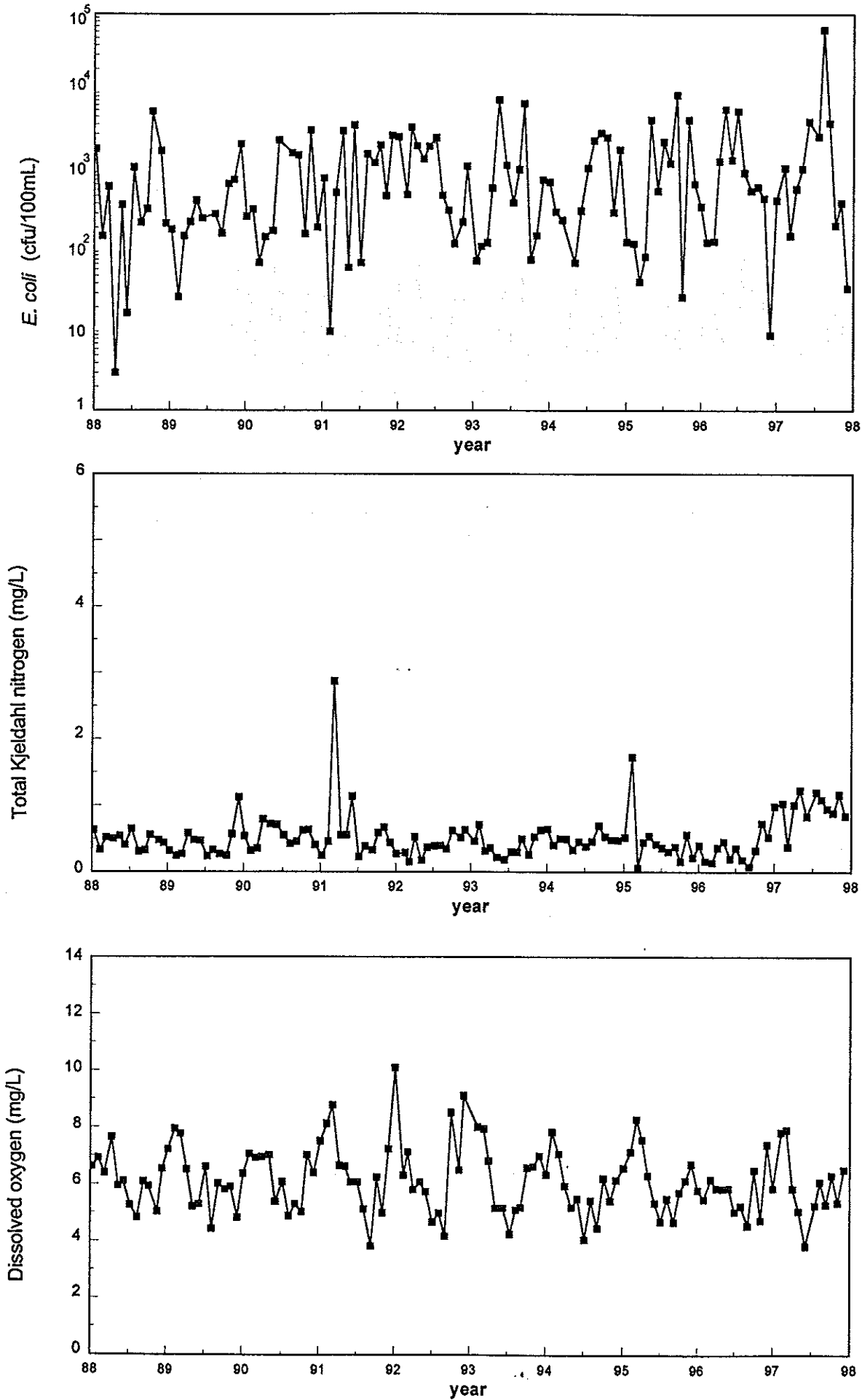


Figure 6-h: Trends in depth-averaged *E. coli*, total Kjeldahl nitrogen and dissolved oxygen at the monitoring station TM6 (Tolo Harbour WCZ)

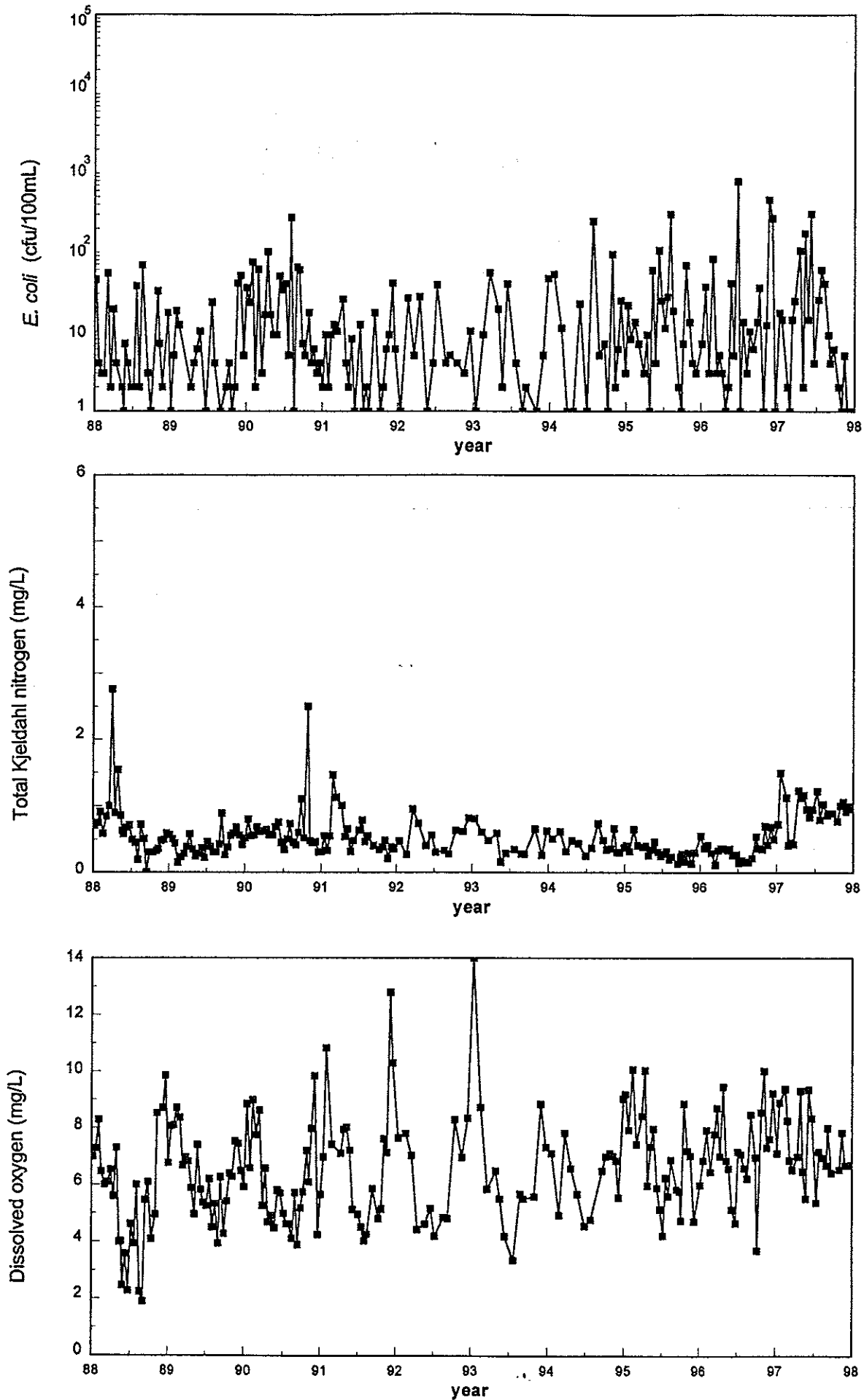


Figure 6-i: Trends in depth-averaged *E. coli*, total Kjeldahl nitrogen and dissolved oxygen at the monitoring station PM7 (Port Shelter WCZ)

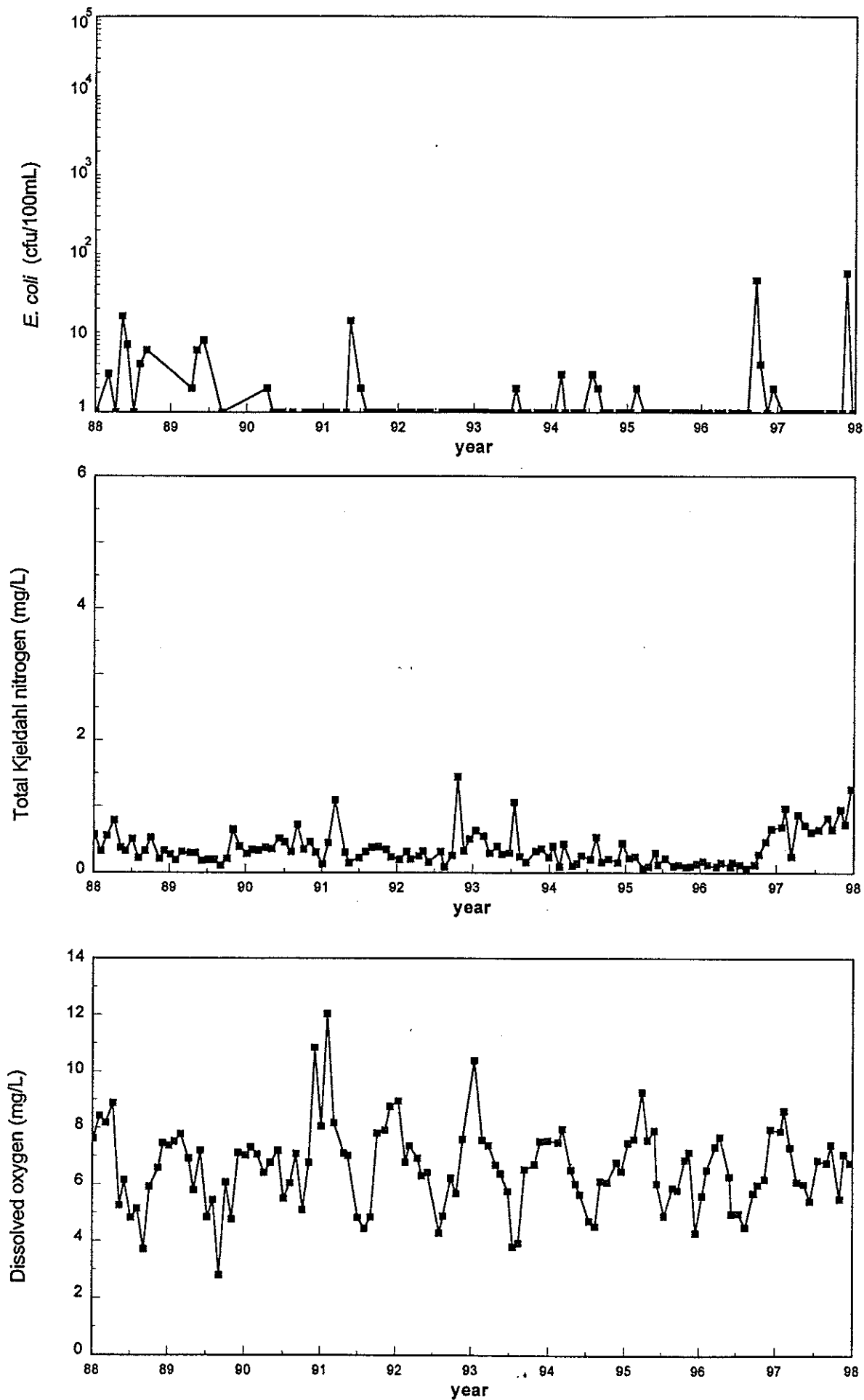


Figure 6-j: Trends in depth-averaged *E. coli*, total Kjeldahl nitrogen and dissolved oxygen at the monitoring station MM15 (Mirs Bay WCZ)

