

# 屯門河生態與水質污染

**Ecology and Water Pollution  
of Tuen Mun River**

呂德恒  
Henry Lui



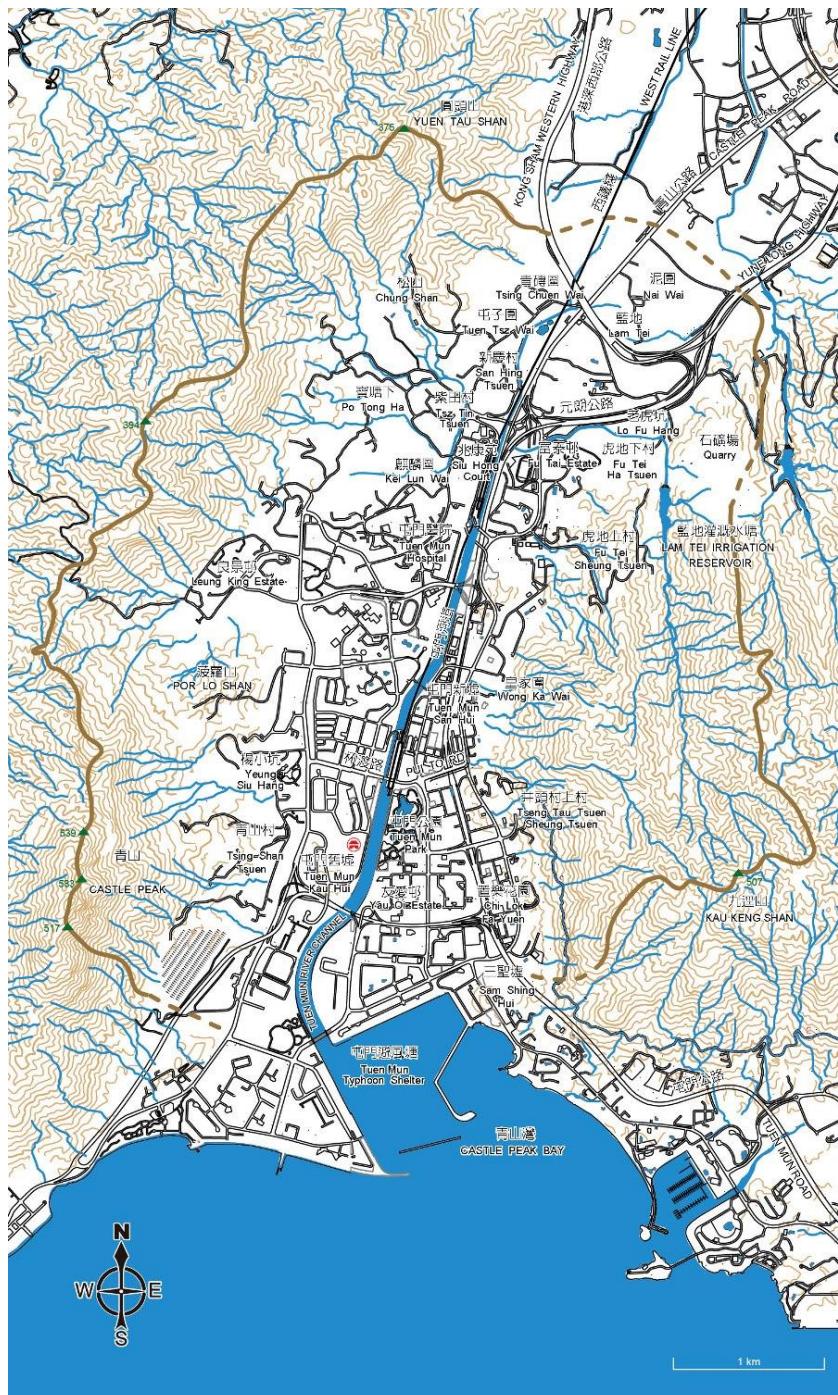
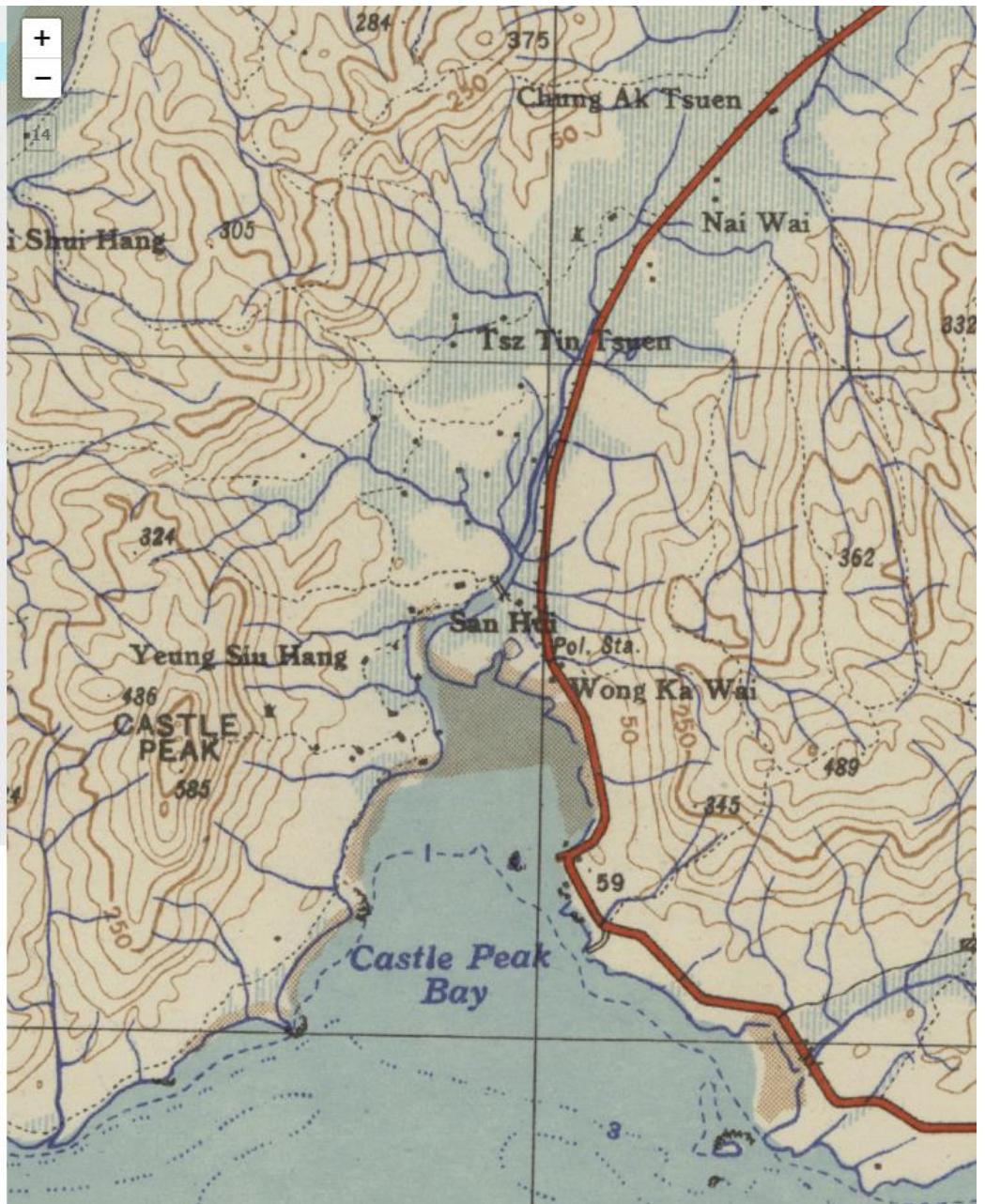
## Background Map

## Reference Map

- Map 1939
- Map 1941
- Map 1945
- Map 1945.1
- Map 1945.2
- Map 1945.3
- Map 1945.4
- Map 1945.5
- Map 1947
- Map 1947.1
- Map 1949
- Map 1950
- Map 1952
- Map 1952.1
- Map 1955

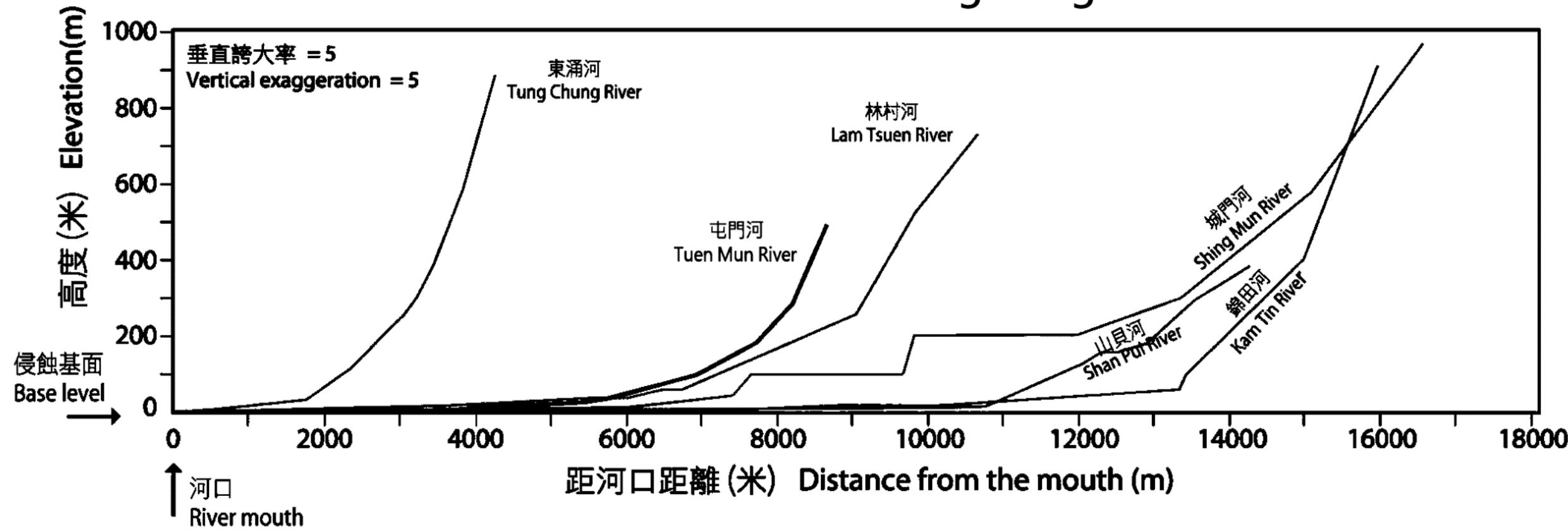
## Overlay

- Coast 1845
- Coast 1888
- Coast 1904
- Coast 1924
- Coast 2004
- Tracks 1904 map
- Tracks 1904.1 map
- Tracks 1924 map



# 六條香港河流的縱剖面圖

## River Profiles of Six Hong Kong Rivers





## 生態

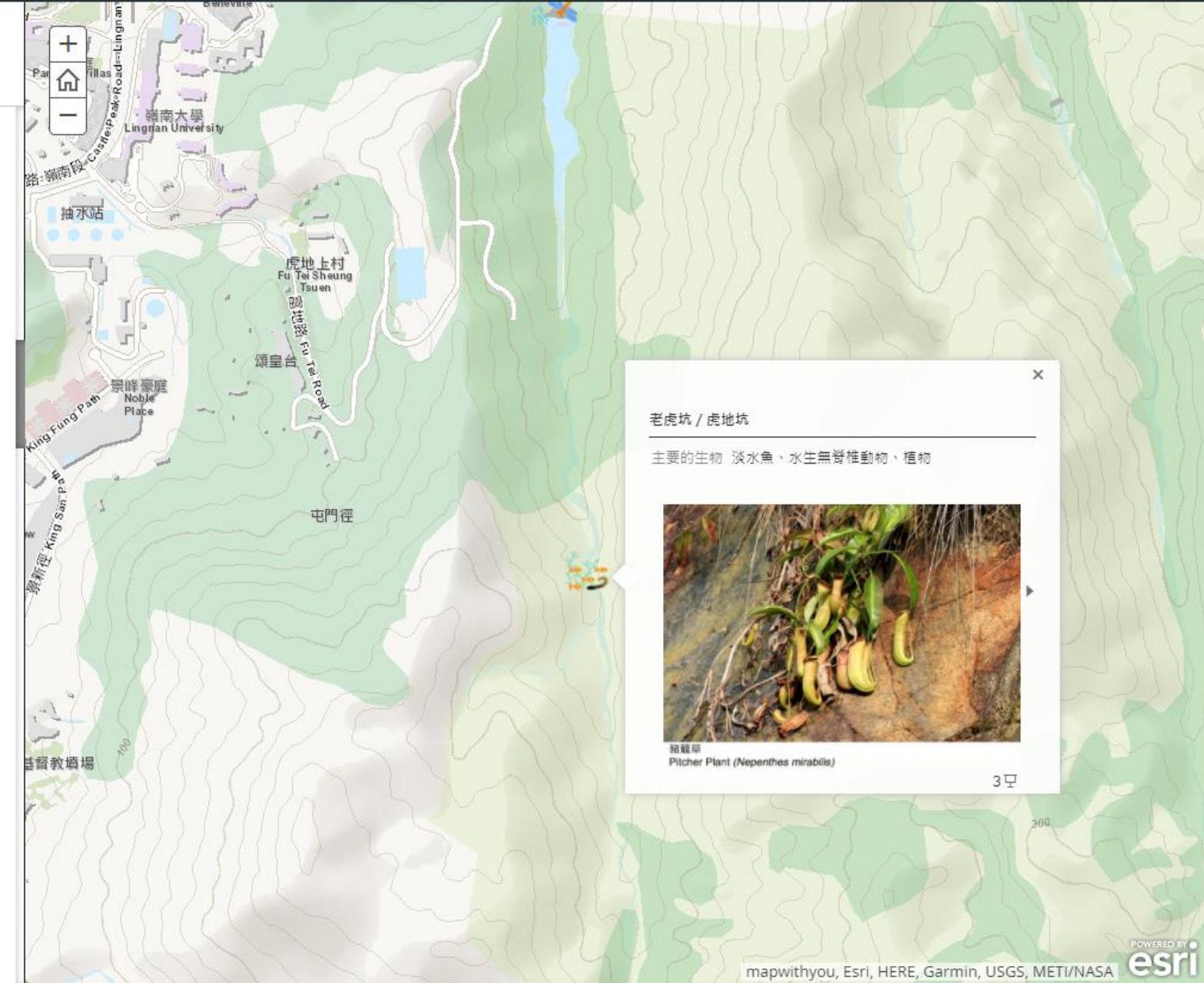
## 老虎坑 / 虎地坑

老虎坑又名虎地坑，位於屯門河上游，水源充足且水質大致穩定，孕育了不少魚類和昆蟲。溪澗旁亦可找到一些食蟲植物，如豬籠草等。



## 藍地灌溉水塘

藍地灌溉水塘匯集了屯門河上游（老虎坑）的河水，水源充足且岸邊







## 老虎坑 / 虎地坑



老虎坑又名虎地坑，位於屯門河上游，水源充足且水質大致穩定，孕育了不少魚類和昆蟲。溪澗旁亦可找到一些食蟲植物，如豬籠草等。







屯門河位置及其流域

景觀

生態

文物古蹟

航拍影片

推介路線



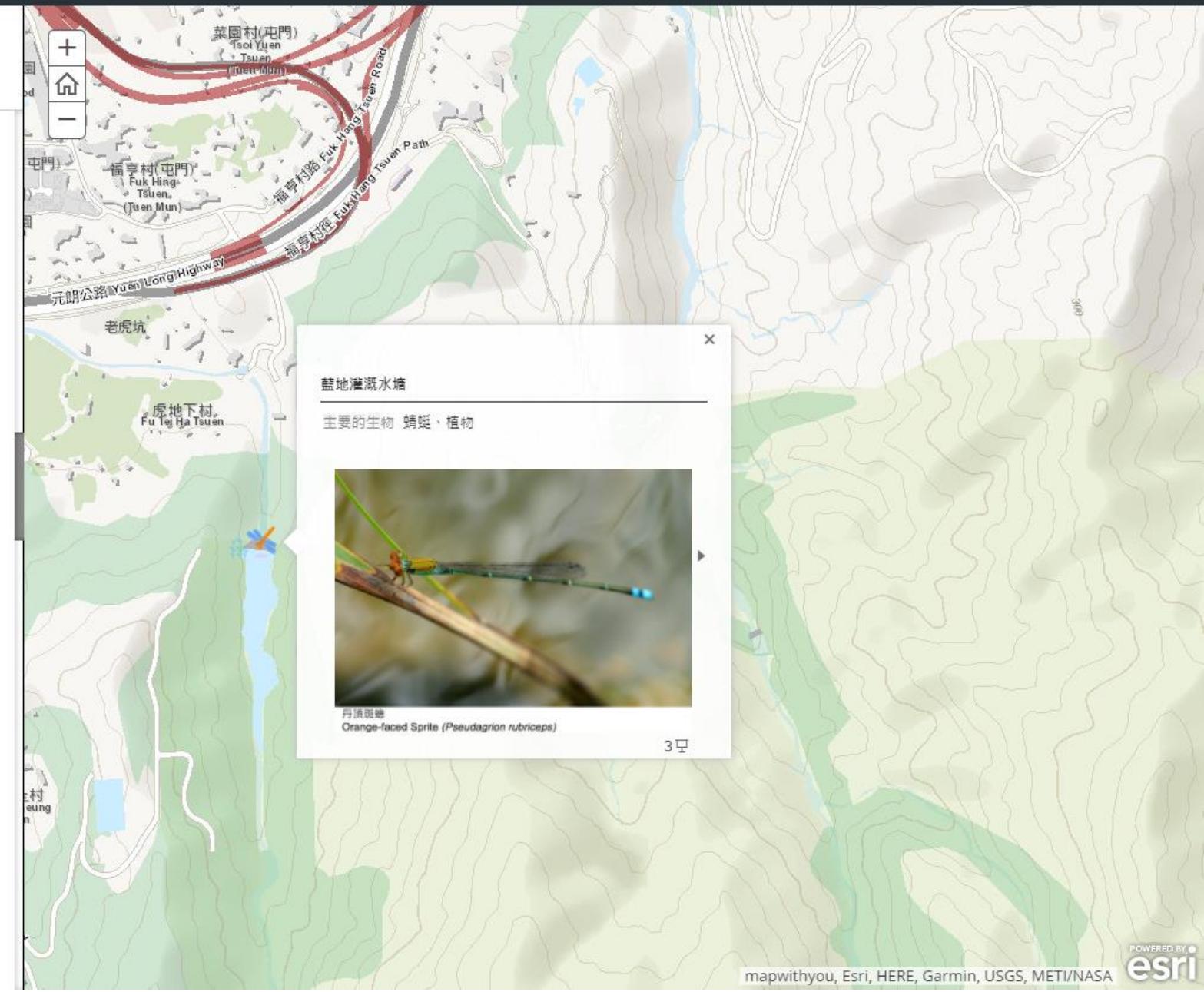
## 生態

## 藍地灌溉水塘

藍地灌溉水塘匯集了屯門河上游（老虎坑）的河水，水源充足且岸邊植被豐富，為蜻蜓和魚類提供了合適的棲息地，附近間中更可見鷺鳥飛過。



## 九逕北坑



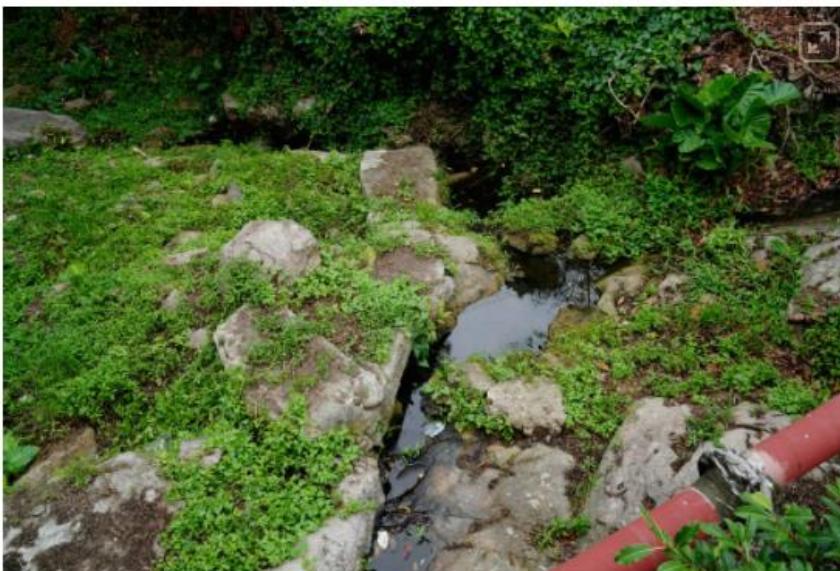




## 生態

## 九逕北坑

 屯門河下游河道大多已被渠道化，九逕北坑是少數仍能保留天然面貌的河段。雖然水質不甚理想，更有不少外來魚類物種入侵，但在此處仍可找到鼈蟻等水生昆蟲，河岸亦長有不同樹木和草本植物，吸引了各種鳥類棲息於此。



**九逕北坑**  
主要的生物 昆蟲、植物

  
偽齒葉花𧇧 Water Strider (*Metrocoris lituratus*)

3 页













## 屯門河位置及其流域

### 河水水質

總括而言，屯門河的水質自1980年代中期至今有顯著改善。

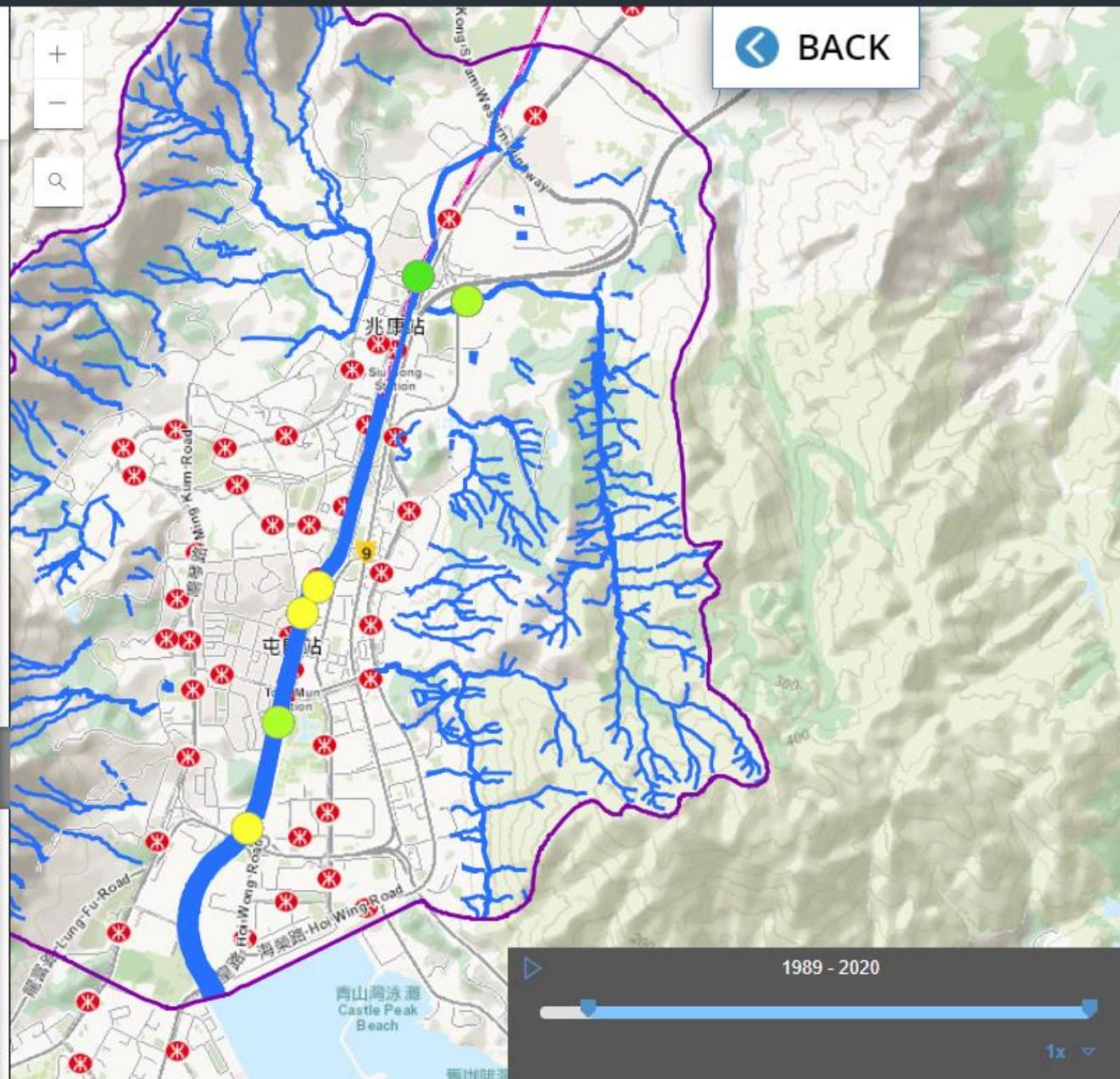
### 五天生化需氧量

於1986年至2018年間，屯門河流域內六個監測站的五天生化需氧量均穩步下降。1991年以前，所有河流監測站所錄得的五天生化需氧量均處於「極劣」水平；至2019年，五個監測站已錄得「良好」或「極佳」水平。惟鄰近藍地的河流監測站五天生化需氧量數值多年來一直無法脫離「極劣」水平，反映該處的河水污染問題持續存在。

#### 有關五天生化需氧量圖例 (毫克/公升)

- 極佳: <3
- 良好: 3.1-6.0
- 普通: 6.1-9.0
- 惡劣: 9.1-15.0
- 極劣: >15
- 不適用

### 大腸桿菌





## River Water Quality Data

Raw data of river water quality are available on this website. The data can be displayed in graphical format (only 1 monitoring station and only 1 water quality parameter for each inquiry). To obtain the raw data, please fill in the form below and then click "Display".

## Display

## Selected Water Control Zone

North Western

### Selected river or stream

Tuen Mun River

Data is available from

From 1986-01-01 to 2020-12-31

Display data under following condition

## Display data from

1986	▼	/	01	▼	/	01	▼
2020	▼	/	12	▼	/	31	▼

Date To:

## Sampling Station

## Water Quality Parameters

TN1

## Display

Reset

Back



- 5-Day Biochemical Oxygen Demand (mg/L)  
Aluminium ( $\mu\text{g}/\text{L}$ )  
Ammonia-Nitrogen (mg/L)  
Anionic Surfactants (as Manoxol OT) (mg/L)  
Antimony ( $\mu\text{g}/\text{L}$ )



Home

► WATER

Problems & Solutions

Data & Statistics

Water Quality

Sewerage Infrastructure

Legislation & Guidelines

Water Conservation

Regional Collaboration

Multi-Media Gallery

Relevant Links

Map

Study Reports

Contact Us

Advanced Search



Together,  
We Fight the Virus!

To Report Pollution  
2838 3111

Share Digg



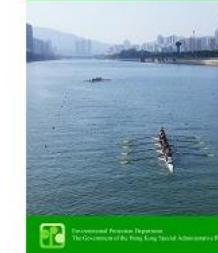
Home > Water >

## Water Quality

### River - Annual River Water Quality Reports

The following Annual River Water Quality Reports in portable document format (PDF) are available for download. The PDF files should be viewed with the software Adobe Reader.

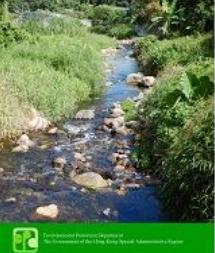
RIVER WATER QUALITY IN  
HONG KONG IN 2020



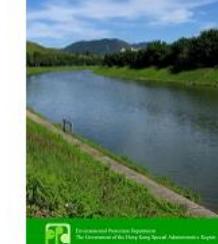
RIVER WATER QUALITY IN  
HONG KONG IN 2019



RIVER WATER QUALITY IN  
HONG KONG IN 2018



RIVER WATER QUALITY IN  
HONG KONG IN 2017



River Water Quality  
in Hong Kong in 2016



River Water Quality  
in Hong Kong in 2015



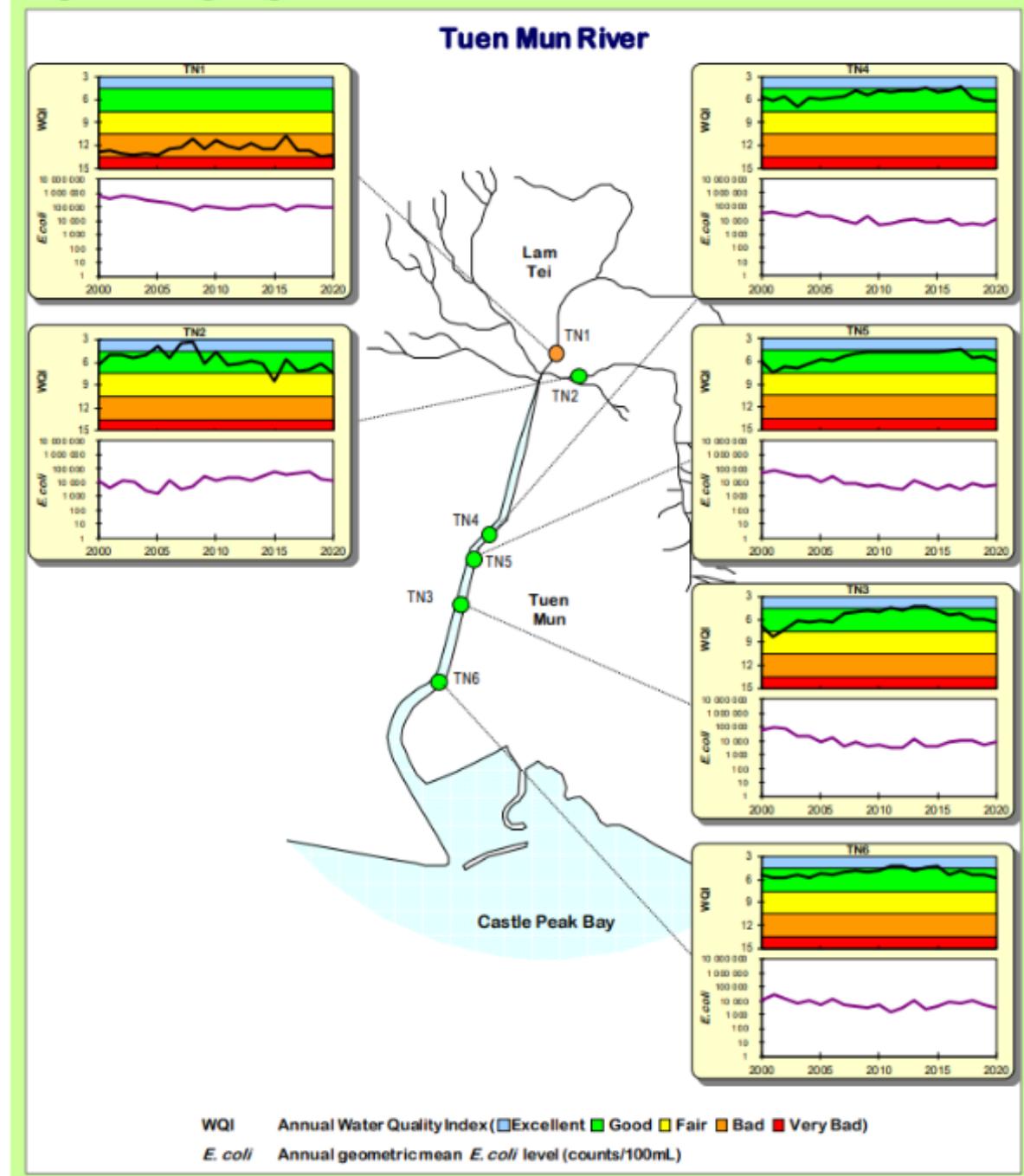
# RIVER WATER QUALITY IN HONG KONG IN 2020



Environmental Protection Department  
The Government of the Hong Kong Special Administrative Region

Figure 23. WQI gradings and *E. coli* levels in Tuen Mun River

## Tuen Mun River



## Key WQOs for river monitoring stations in Southwestern New Territories and Kowloon

Watercourse	Monitoring station	Key Water Quality Objectives (WQOs)				
		pH range	Maximum 5-Day Biochemical Oxygen Demand (mg/L)	Maximum Chemical Oxygen Demand (mg/L)	Maximum Annual Median Suspended Solids (mg/L)	Minimum Dissolved Oxygen (mg/L)
<b>North Western Water Control Zone</b>						
Tuen Mun River	TN1	6.0 - 9.0	5	30	25	4
	TN2	6.5 - 8.5	3	15	20	4
	TN3	6.0 - 9.0	5	30	25	4
	TN4	6.0 - 9.0	5	30	25	4
	TN5	6.0 - 9.0	5	30	25	4
	TN6	6.0 - 9.0	5	30	25	4

## Summary of water quality monitoring data for Tuen Mun River in 2020

## Appendix E

Parameter	Unit	Tuen Mun River				Tuen Mun River	
		TN1	TN2	TN3	TN4	TN5	TN6
Dissolved Oxygen	mg/L	3.6 (2.0 - 5.7)	7.2 (4.7 - 8.3)	4.4 (3.1 - 6.6)	4.6 (2.4 - 7.3)	4.9 (2.8 - 6.3)	4.9 (3.3 - 9.1)
pH		7.7 (7.6 - 8.0)	7.6 (7.2 - 9.5)	7.5 (7.3 - 7.8)	7.6 (6.9 - 8.0)	7.6 (7.4 - 7.9)	7.6 (6.2 - 8.4)
Suspended Solids	mg/L	7.6 (4.0 - 12.0)	4.6 (2.3 - 45.0)	8.3 (2.5 - 19.0)	9.9 (1.8 - 48.0)	8.0 (2.2 - 25.0)	6.7 (2.6 - 19.0)
5-Day Biochemical Oxygen Demand	mg/L	21.0 (10.0 - 36.0)	3.9 (2.5 - 9.5)	4.5 (2.2 - 15.0)	3.1 (2.2 - 13.0)	3.3 (1.8 - 9.4)	3.1 (2.1 - 6.8)
Chemical Oxygen Demand	mg/L	27 (20 - 35)	8 (5 - 10)	15 (12 - 32)	14 (8 - 20)	12 (8 - 23)	12 (4 - 35)
Oil & Grease	mg/L	<0.5 (<0.5 - 1.7)	<0.5 (<0.5 - 0.9)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)
<i>E. coli</i>	counts/100mL	97 000 (36 000 - 270 000)	15 000 (3 200 - 120 000)	9 300 (1 100 - 60 000)	12 000 (1 700 - 250 000)	7 000 (300 - 57 000)	3 400 (10 - 55 000)
Faecal Coliforms	counts/100mL	440 000 (210 000 - 770 000)	42 000 (7 500 - 220 000)	91 000 (6 400 - 3 000 000)	68 000 (5 400 - 2 400 000)	50 000 (2 000 - 550 000)	36 000 (490 - 630 000)
Ammonia-Nitrogen	mg/L	6.300 (4.800 - 8.800)	2.000 (0.420 - 2.800)	0.495 (0.160 - 1.100)	0.595 (0.240 - 0.850)	0.585 (0.220 - 0.930)	0.470 (0.110 - 1.000)
Nitrate-Nitrogen	mg/L	0.220 (<0.002 - 1.100)	1.400 (0.840 - 2.200)	0.320 (0.160 - 0.650)	0.270 (0.023 - 0.650)	0.340 (0.180 - 0.680)	0.350 (0.120 - 0.700)
Total Kjeldahl Nitrogen	mg/L	7.80 (5.40 - 11.00)	2.40 (0.79 - 4.60)	1.05 (0.43 - 1.50)	1.10 (0.48 - 1.70)	1.25 (0.45 - 2.20)	0.95 (0.27 - 1.70)
Orthophosphate Phosphorus	mg/L	0.520 (0.420 - 0.770)	0.230 (0.034 - 0.270)	0.037 (0.007 - 0.057)	0.030 (0.007 - 0.064)	0.035 (0.007 - 0.063)	0.035 (0.017 - 0.054)
Total Phosphorus	mg/L	0.83 (0.57 - 1.10)	0.32 (0.08 - 0.62)	0.11 (0.07 - 0.17)	0.13 (0.06 - 0.19)	0.12 (0.06 - 0.13)	0.11 (0.05 - 0.19)
Sulphide	mg/L	0.03 (<0.02 - 0.05)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - 0.03)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - 0.02)
Aluminium	µg/L	<50 (<50 - 166)	63 (<50 - 190)	<50 (<50 - 173)	<50 (<50 - 170)	<50 (<50 - 81)	<50 (<50 - 254)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	<1 (<1 - <1)	<1 (<1 - 2)	2 (<1 - 3)	2 (<1 - 3)	2 (<1 - 3)	2 (<1 - 3)
Copper	µg/L	2 (1 - 3)	<1 (<1 - 2)	4 (1 - 8)	4 (1 - 6)	4 (1 - 7)	5 (2 - 7)
Lead	µg/L	<1 (<1 - <1)	<1 (<1 - <1)	<1 (<1 - <1)	<1 (<1 - <1)	<1 (<1 - <1)	<1 (<1 - <1)
Zinc	µg/L	<10 (<10 - 29)	<10 (<10 - 23)	11 (<10 - 25)	11 (<10 - 20)	13 (<10 - 19)	11 (<10 - 27)
Flow	m³/s	0.148 (0.101 - 0.557)	0.028 (0.011 - 0.133)	NM	NM	NM	NM

# 水污染的影響 The Impacts of Water Pollution

- 不同的污染物落到河水中，會改變河水的化學和物理性質，影響水中的生物和人類健康。
- Pollutants change the chemical and physical properties of river water, affecting aquatic organisms and human health.



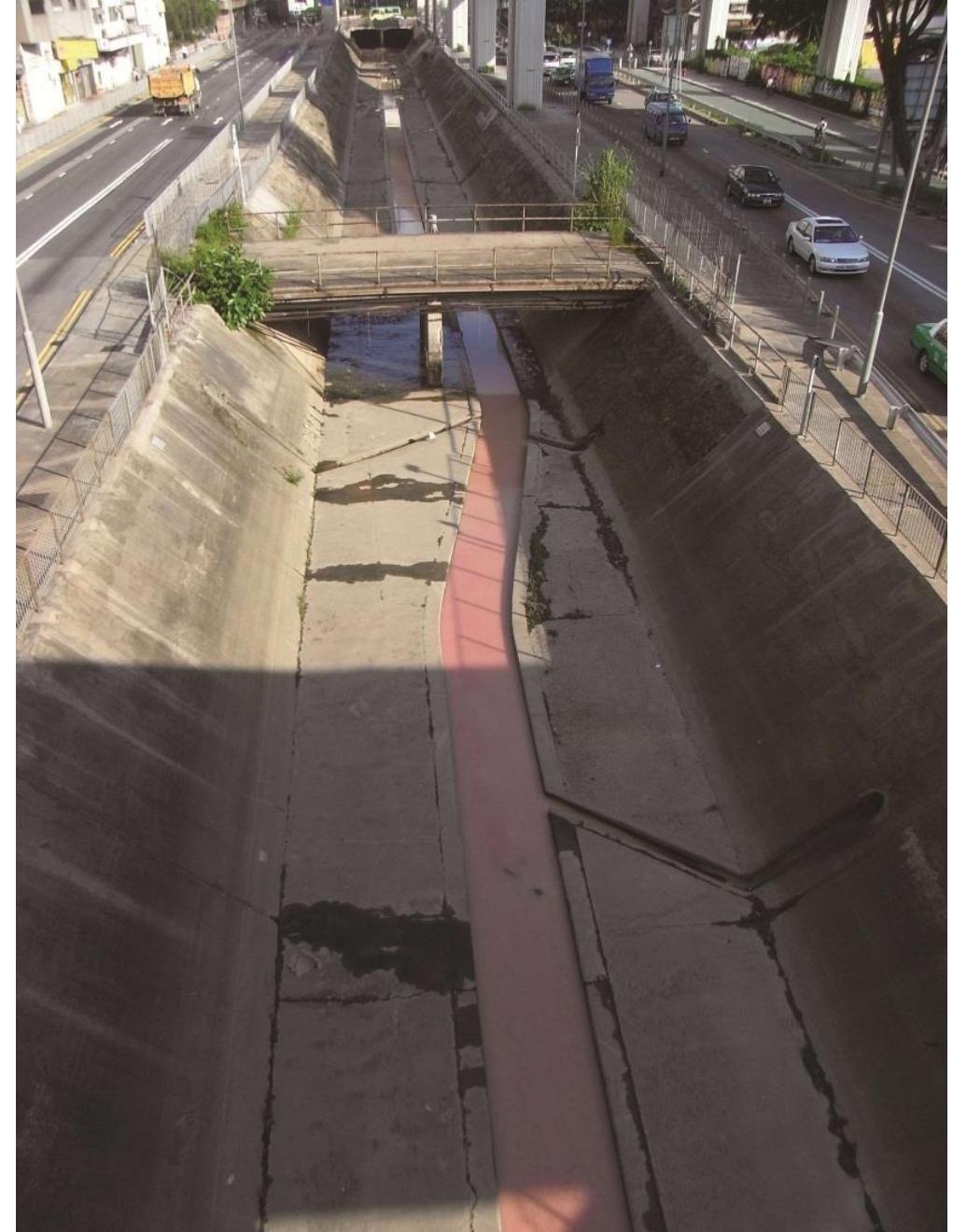
# 有機污染物 Organic Pollutants

- 動物排洩物、食物渣滓、洗滌劑、病原體等
- Animal waste, food scraps, cleaning agents, pathogens, etc



# 無機污染物 Inorganic Pollutants

- 重金屬、無機氮化物、磷酸鹽等
- Heavy metals, inorganic nitrogen compounds, phosphates, etc.



# 生物累積 Bioaccumulation

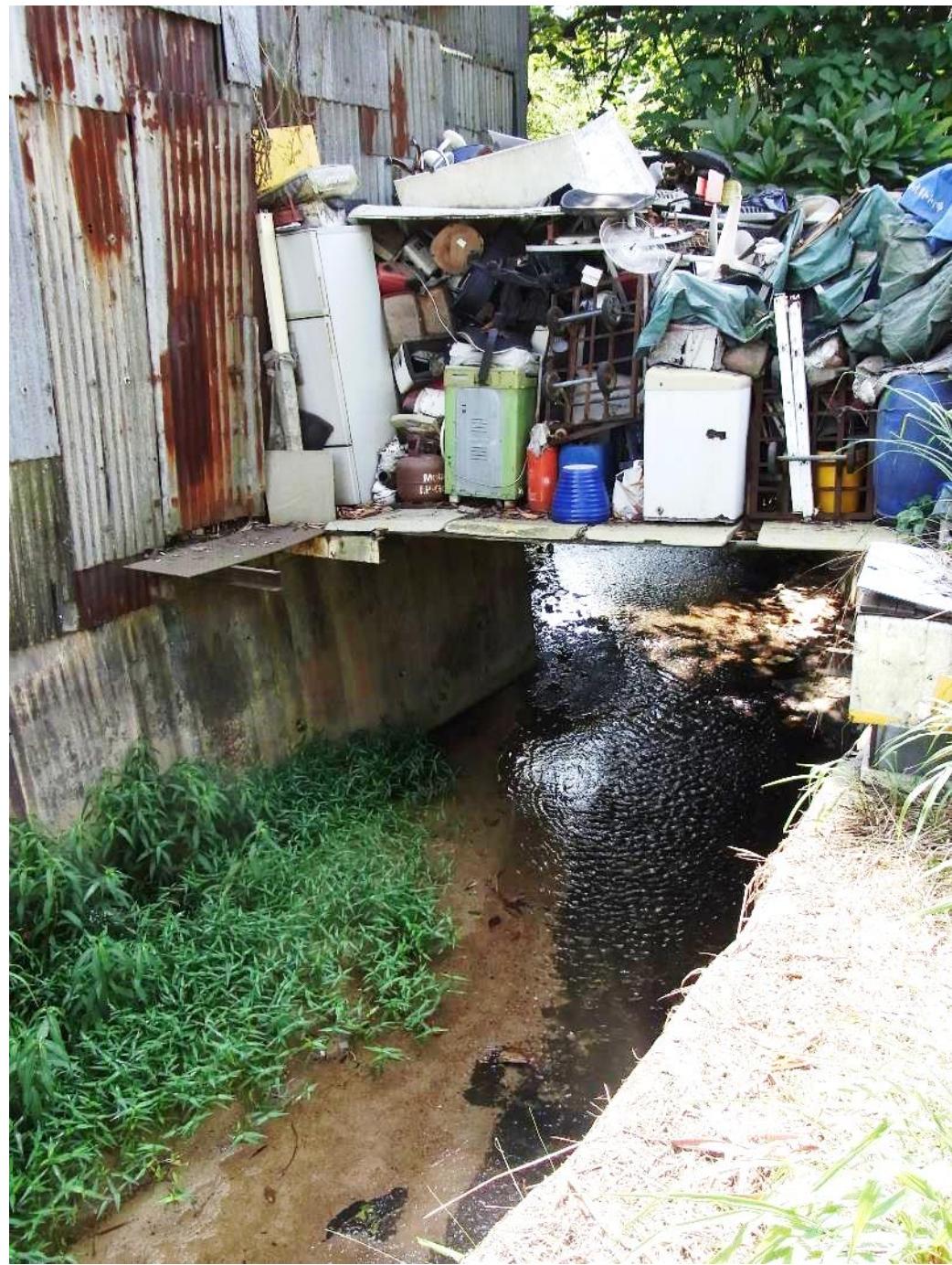
- 水中的重金屬被水生生物吸收後，濃度會在牠們體內生物放大，例如銅和鉛分別會在軟體動物及底棲生物體內積聚，使牠們體內重金屬的濃度比處身的河水還要高。
- Heavy metals, once absorbed by aquatic creatures, undergo biomagnification. For example, copper and lead will accumulate in molluscs and benthic organisms, respectively, and reach concentrations much higher than that in the water.



- 透過食物鏈作生物累積，例如：鎘和汞會使食物鏈上層生物（如：水鳥）體內的重金屬濃度比水中的高數十至數百倍。
- Bioaccumulation of heavy metals occurs in food chains.
- Levels of cadmium and mercury in the bodies of creatures higher in the food chain (e.g. waterfowl) have been found to be a dozen to a hundred-fold those in the water.

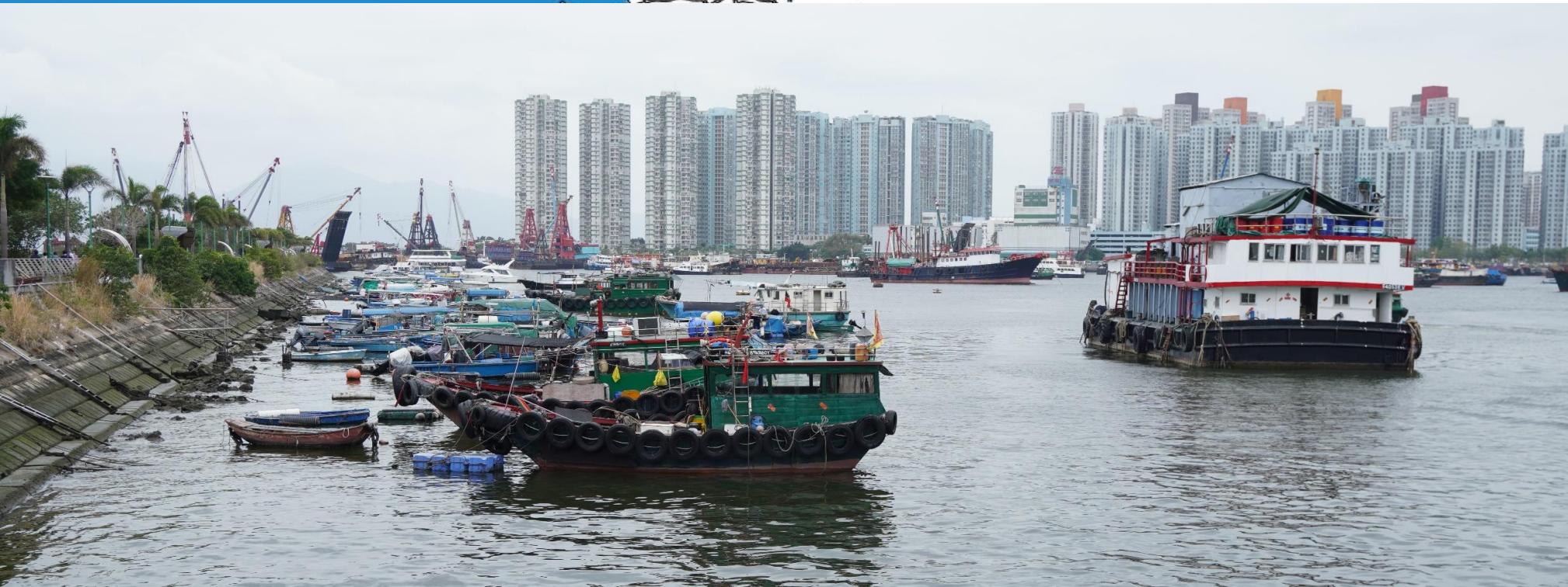
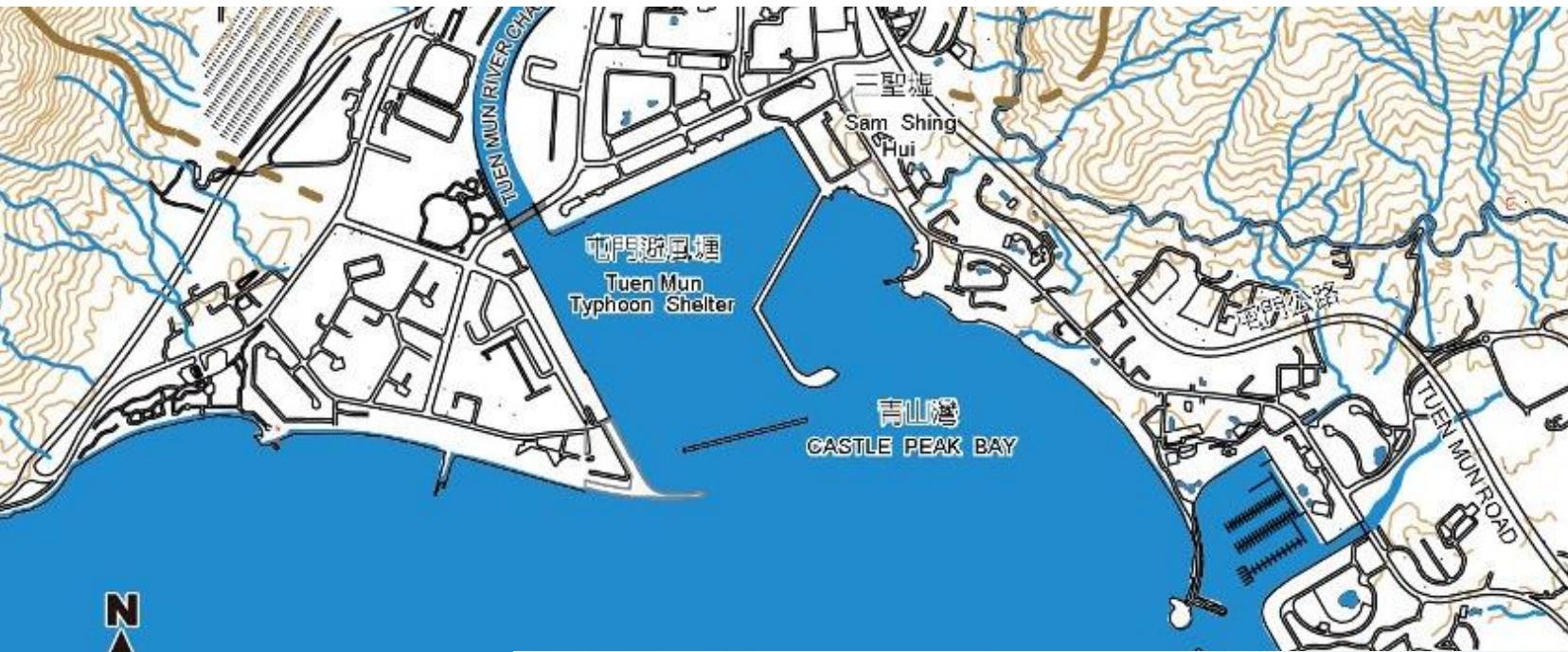












# 【泳客注意】屯門六個泳灘水質參差 水質最差係青山灣

撰文：李丹蕾

出版：2018-12-03 10:00 更新：2018-12-03 10:00



該泳灘曾關閉超過20年，  
自2005年起重開。

根據環保署最新提供的屯門泳灘水質等級資料，六個屯門泳灘之中，青山灣的水質最差，8月及9月分別被驗出大腸桿菌每月幾何平均數達164及192（每百毫升大腸桿菌數量），曾三次被評為第三級的「欠佳」。該泳灘曾關閉超過20年，自2005年起重開。而蝴蝶灣在八月亦兩次被評為水質「欠佳」，各個泳灘的水質於十月都有所改善。



22 Jan 2010

