

香港泳灘水質 2015

Beach Water Quality in Hong Kong



為更佳泳灘水質而努力
Strive for better beach water quality



環境保護署

香港特別行政區政府

Environmental Protection Department

The Government of the Hong Kong Special Administrative Region

Our Mission :

To safeguard the health and welfare of the community and meet conservation goals by working to achieve and maintain the Water Quality Objective for bathing beaches



Beaches with white sands and clean water are popular places for both local people and tourists to swim and enjoy their leisure time



Introduction

Hong Kong has a long twisting coastline with many beautiful and attractive beaches. Each year, millions of beach-goers enjoy bathing in these beaches with white sands and clean water.

The objective of the Environmental Protection Department (EPD)'s Beach Water Quality Monitoring Programme is to monitor beach water quality and protect the health of bathers. The background and details of EPD's monitoring activities can be found at its [Hong Kong Water Quality Resource Centre \(HKWQRC\) thematic website \(http://wqrc.epd.gov.hk\)](http://wqrc.epd.gov.hk) or its [beach water quality thematic website \(http://www.beachwq.gov.hk\)](http://www.beachwq.gov.hk).



There are many great beaches in Hong Kong to swim, sunbathe and play



Beach Water Quality in Hong Kong 2015

This report summarises the beach monitoring data collected in 2015, the gradings of the beaches and their annual compliance with the Water Quality Objective (WQO) for bathing beaches. In 2015, the EPD monitored 41 gazetted beaches and three non-gazetted beaches in different parts of the territory. The gazetted beaches were monitored weekly during the bathing season from March to October, and EPD staff made field observations and collected samples for laboratory analyses of *Escherichia coli* (*E. coli*) as the bacteriological water quality indicator. EPD staff also took measurements of dissolved oxygen, pH, salinity, temperature and turbidity of beach water.



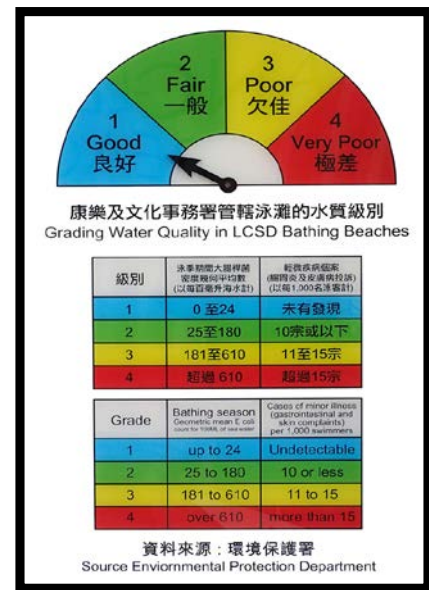
Bacteriological analysis of beach water at EPD's microbiology laboratory



EPD staff monitoring beach water quality



Hong Kong's beaches are assessed using a dual system: annual ranking and weekly grading which are both based on the *E. coli* level in beach water to indicate potential health risks associated with swimming. The annual ranking reflects the overall water quality of the beach over the entire bathing season, while the weekly grading denotes the recent water quality of the beach. Under the dual rating system, beaches are categorised into "Good", "Fair", "Poor" and "Very Poor". Those ranked "Good" and "Fair" meet the WQO for bathing waters.



Beach water quality
grading board

Annual Beach Ranking in 2015



Kwun Yam Beach - a favourite beach for
both Cheung Chau residents and visitors

All 41 gazetted beaches in Hong Kong complied with the WQO in 2015. Although the total rainfall (1703 mm) recorded during the bathing season in 2015 was 33% lower than that in 2014 (2523 mm) for the same period, there were frequent heavy rainstorms in the territory since May, and the total rainfall recorded in May, July and October were all higher than the normal amount recorded in the three months.

There were occasional increases in the *E. coli*

levels in beach water after heavy rainstorms, which were seen mostly for beaches in the western side of Hong Kong. Their *E. coli* levels were, however, still generally within the normal range of fluctuation of their bacteriological water quality. Compared with the ranking in 2014, the number of beaches ranked as "Good" has increased from 23 (or 56 %) to 25 (or 61 %) and the number of beaches ranked as "Fair" has changed from 18 (or 44%) to 16 (or 39%). No beach was ranked as "Poor" or "Very Poor" in 2015.



Beach Water Quality in Hong Kong 2015

The beaches with "Good" water quality ranking were largely located in the Southern District (Hong Kong Island South), Outlying Islands and Sai Kung. Ten of the 12 beaches in the Southern District were ranked as "Good" in 2015. The ranking of Big Wave Bay Beach had progressed from "Fair" to "Good", while Shek O Beach and Rocky Bay Beach (not open for swimming) had changed to "Fair", but the changes in *E. coli* levels were not statistically significant. Of the nine beaches on the Outlying Islands, eight were ranked as "Good". The ranking of Pui O Beach had progressed to "Good" while Silver Mine Bay Beach remained as "Fair". In the Sai Kung area, all six beaches were rated as "Good" in 2015 with Silverstrand Beach moved up to "Good". On the western side, Ma Wan Tung Wan Beach had progressed to "Good" while the other seven beaches in Tsuen Wan District and all six beaches along the Tuen Mun coast were all ranked as "Fair" in 2015.



Repulse Bay Beach - one of the most beautiful beaches in Hong Kong



Despite the occasional and temporary deterioration of water quality, largely due to heavy rain and substandard discharge from private treatment works which was later rectified, the water quality of the Tsuen Wan beaches has been stable in 2015, mainly owing to the smooth operation of the Advance Disinfection Facilities (ADF) of the Stonecutters Island Sewage Treatment Works since March 2010, and the completion of the sewerage works in the hinterland of the beaches.



Scenic Lido Beach

Since all the Tsuen Wan beaches have achieved the WQO for bathing, four previously closed beaches, namely Approach Beach, Casam Beach, Hoi Mei Wan Beach and Lido Beach, have been reopened to the public for swimming since June 2011. After the upgrading of beach facilities, Anglers' Beach and Ting Kau Beach have been reopened for swimming since September 2013 and April 2014 respectively. The Leisure and Cultural Services Department has also reopened Gemini Beaches for public use after the completion of the improvement works in 2014, but the beaches are not open for swimming since there is no lifeguard service.

EPD also monitored three non-gazetted beaches in Hong Kong: Discovery Bay (a popular beach on Lantau Island), a sandy beach adjacent to Kiu Tsui Beach in Sai Kung, and a planned artificial beach in Lung Mei, Tai Po. In 2015, Discovery Bay and the beach adjacent to Kiu Tsui Beach continued to be ranked as "Good", and Lung Mei as "Fair". Village houses in the Lung Mei area are being connected to the public sewerage network in phases. Together with the pollution abatement measures to be implemented, the water quality at Lung Mei will continue to improve after all the sewerage connection works are completed.



Weekly Beach Grading in 2015

The EPD issues weekly gradings of gazetted beaches which are open for swimming. The information is disseminated to the public through weekly press release, EPD's websites, the beach enquiry hotline, GeoInfo Map of the GovHK website and noticeboards at the beaches.



Clear water and fine sand makes St. Stephen's Beach an ideal bathing beach

In 2015, the water quality of beaches in the Southern District was largely satisfactory. All ten open gazetted beaches received mostly "Good" or "Fair" grading in the bathing season. Chung Hom Kok Beach, South Bay Beach and Turtle Cove Beach achieved "Good" grading over 80% of the rating occasions, while St. Stephen's Beach was rated as "Good" close to 100% of the time.

The beaches on the Outlying Islands were generally very suitable for swimming, with Hung Shing Yeh Beach, Tong Fuk Beach and Upper Cheung Sha Beach achieving "Good" grading on all rating occasions, while Lo So Shing Beach was graded as "Good" over 90% of the time. Cheung Chau Tung Wan Beach, Kwun Yam Beach and Silvermine Bay Beach were rated as "Very Poor" on one or two occasions after heavy rain.



Hung Shing Yeh Beach – white sands, turquoise waters and blue sky



The water quality of the Sai Kung beaches was also generally good with weekly grading of "Good" or "Fair". Hap Mun Bay Beach and Trio Beach had the best water quality achieving "Good" grading on all rating occasions.

The water quality of the beaches in Tuen Mun area was generally fine and nearly all graded as "Good" or "Fair" on most of the rating occasions. Cafeteria Old Beach and Castle Peak Beach were graded as "Very Poor" on one or two occasions after heavy rain.

The water quality of the beaches in Tsuen Wan was generally satisfactory with grading mostly at "Fair". Approach Beach, Hoi Mei Wan Beach and Ting Kau Beach were rated as "Very Poor" on several occasions after heavy rain, and Approach Beach was rated as "Poor" during the period of substandard discharge from private treatment works.



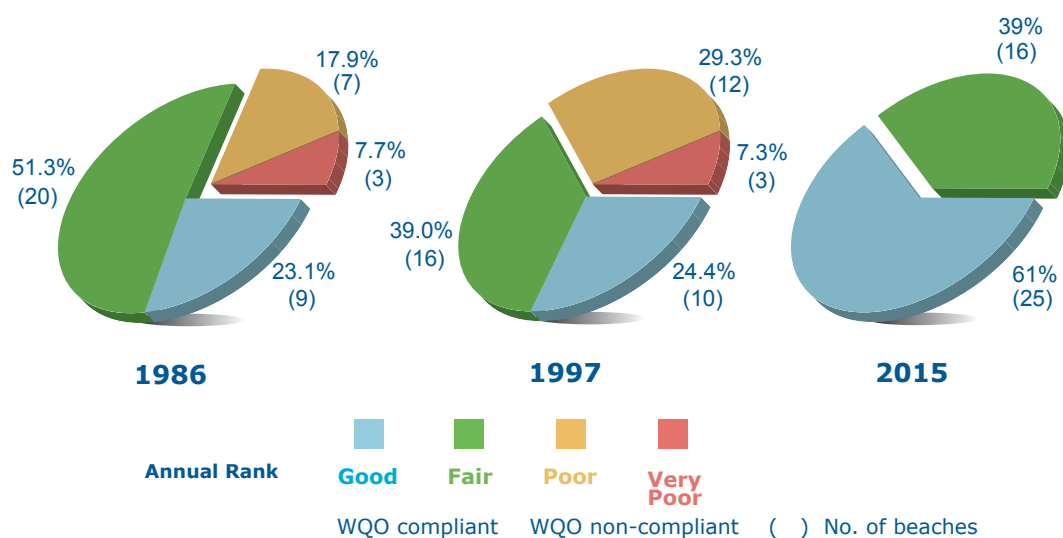
Golden Beach in summer time



Water Quality Trend

The beach water quality in Hong Kong is able to fully comply with the WQO for the last six years. The percentage of beaches complying with the WQO had changed from 74% in 1986 (29 of 39 beaches) to 63% (26 of 41 beaches) in 1997, and then improved to 100% since 2010 for all 41 gazetted beaches.

Comparison of annual beach ranking of gazetted beaches in 1986, 1997 and 2015



Note: Two beaches degazetted in 1995 were excluded from the calculation.

Back in the 1980s, many beaches were either closed, such as Cafeteria Old Beach, Castle Peak Beach and Silver Mine Bay Beach, or on the verge of being closed (e.g. Middle Bay Beach and Repulse Bay Beach) because of poor water quality.

There was a further drop in compliance rate in the mid-1990s due to population growth particularly in the new town areas. Since then, there has been progressive improvement in the last decade as a result of enforcement of environmental legislation, extension of the sewerage network and provision of new sewage treatment facilities across the territory including the beach hinterland. Major improvement measures implemented in the past are summarized in the following table.

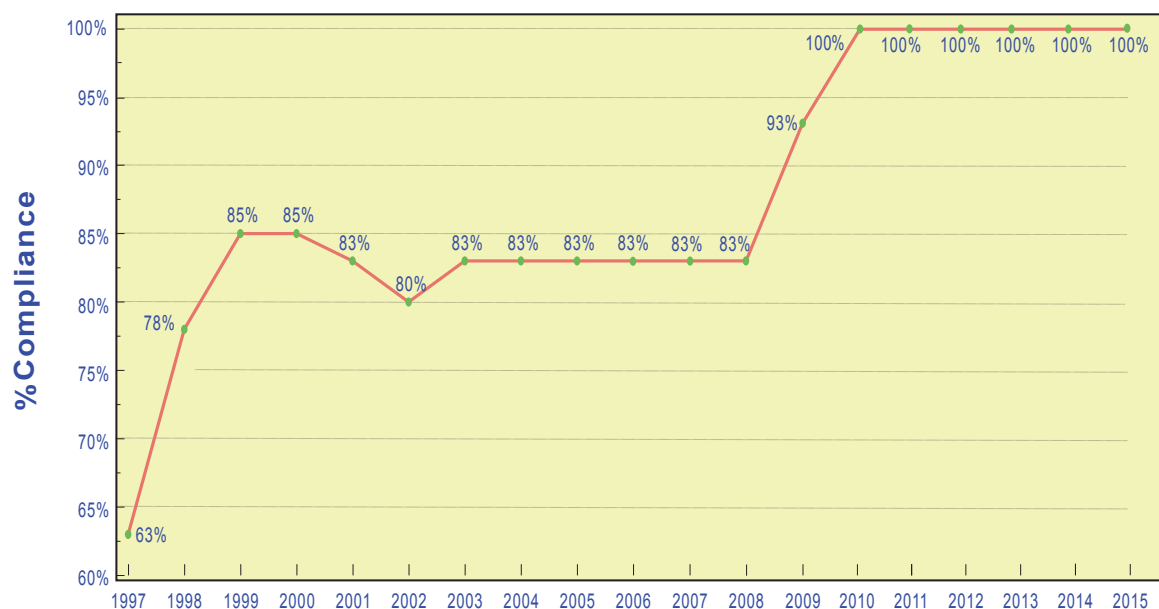
Major improvement measures for the beaches since the implementation of beach water quality monitoring programme in 1986	
1986 – 1990	
✳ Implementation of the Livestock Waste Control Scheme under the Waste Disposal (Livestock Waste) Regulation.	Most beaches, particularly Silver Mine Bay Beach
✳ Declaration of the Southern Water Control Zone (WCZ) under the Water Pollution Control Ordinance (WPCO) and legislative enforcement.	Southern beaches
✳ Interception and diversion of polluted storm drains at beaches in Southern District.	Southern beaches
1991 – 1995	
✳ Implementation of chemical waste control.	All beaches
✳ Declaration of the North Western WCZ under the WPCO and legislative enforcement.	Tuen Mun beaches
✳ Diversion of polluted storm water drains away from Castle Peak Beach.	
✳ Provision of public sewers for So Kwun Wat and Sam Shing Estate.	
✳ Commissioning of Stanley Sewage Treatment Works (STW).	Stanley Main Beach
1996 – 2000	
✳ Full implementation of the WPCO in all WCZs.	All beaches
✳ Commissioning of the Shek O Sewage Screening Plant and diversion of polluted storm water drains at Shek O Village .	Shek O Beach
✳ Completion of all major works under the Southern Sewerage Master Plan.	Southern beaches
✳ Commissioning of the new 2 km long Pillar Point sewage submarine outfall.	Tuen Mun beaches
2001 – 2005	
✳ Completion of Harbour Area Treatment Scheme Stage 1.	Big Wave Bay, Shek O, Rocky Bay Beaches
✳ Provision of public sewers in the Silverstrand area.	Silverstrand Beach
✳ Full operation of the Sham Tseng STW.	Beaches along the Tsuen Wan coast
2006 – 2015	
✳ Commissioning of the Advance Disinfection Facilities at the Stonecutters Island STW.	All Tsuen Wan beaches
✳ Extension of the public sewerage network to the beach hinterland along Castle Peak Road.	Beaches along the Tsuen Wan coast
✳ Upgrading of the Pillar Point STW to chemically enhanced primary treatment with disinfection facilities.	Tuen Mun beaches



Beach Water Quality in Hong Kong 2015

Through continuous efforts of the government to implement pollution abatement measures over the years, there was significant improvement at the beaches in various districts in the last few years. Improvement at Silver Mine Bay Beach, Castle Peak Beach and Repulse Bay Beach was most remarkable as the beaches have consistently complied with the WQO in recent years. All beaches in Tsuen Wan have met the WQO since 2010. To sum up, all of Hong Kong's gazetted beaches have now achieved the required standard for swimming for the sixth consecutive year.

Compliance with WQO at gazetted beaches, 1997 - 2015



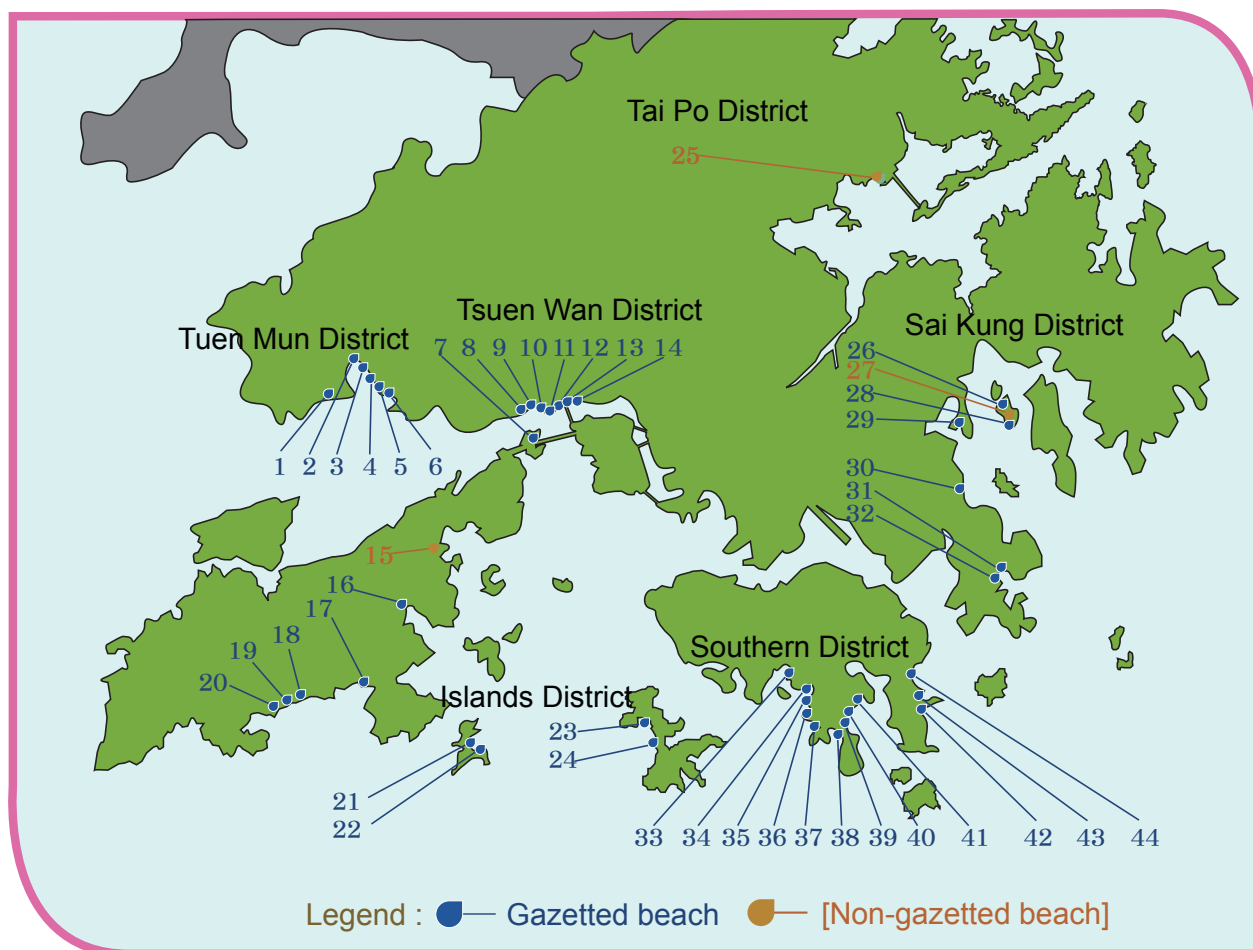
Water quality trend lines of gazetted beaches over the last 30 years are included in this report to show the changes over the years. More in-depth background and details of the beach monitoring programme are available at the EPD's [Hong Kong Water Quality Resource Centre \(HKWQRC\) thematic website \(http://wqrc.epd.gov.hk\)](http://wqrc.epd.gov.hk) or its [beach water quality thematic website \(http://www.beachwq.gov.hk\)](http://www.beachwq.gov.hk), which provides user-friendly access to the annual beach reports as well as data published since 2000.



Children enjoy playing at the beach



Beaches monitored by the EPD



Tuen Mun District

1. Butterfly
2. Castle Peak
3. Kadoorie
4. Cafeteria Old
5. Cafeteria New
6. Golden

Tsuen Wan District

7. Ma Wan Tung Wan
8. Anglers'
9. Gemini
10. Hoi Mei Wan
11. Casam
12. Lido
13. Ting Kau
14. Approach

Islands District

15. [Discovery Bay]
16. Silver Mine Bay
17. Pui O
18. Lower Cheung Sha
19. Upper Cheung Sha
20. Tong Fuk
21. Cheung Chau Tung Wan
22. Kwun Yam
23. Hung Shing Yeh
24. Lo So Shing

Tai Po District

25. [Lung Mei]

Sai Kung District

26. Kiu Tsui
27. [Kiu Tsui (New)]
28. Hap Mun Bay
29. Trio
30. Silverstrand
31. Clear Water Bay First
32. Clear Water Bay Second

Southern District

33. Deep Water Bay
34. Repulse Bay
35. Middle Bay
36. South Bay
37. Chung Hom Kok
38. St. Stephen's
39. Stanley Main
40. Hairpin
41. Turtle Cove
42. Shek O
43. Rocky Bay
44. Big Wave Bay



Beach monitoring frequency

Beach	Monitoring frequency per month	
	Bathing season*	Non-bathing season
Gazetted beaches open all year round **	at least 3 times	at least 3 times
Other gazetted beaches	at least 3 times	once
Non-gazetted beaches	at least 3 times	once

* March to October

** Clear Water Bay Second, Deep Water Bay, Golden and Silverstrand Beaches



Overview of various stages of the Beach Monitoring Programme



Hong Kong's annual beach ranking system

Rank	<i>E. coli</i> counts per 100 mL*	Minor illness rate** (Cases per 1,000 swimmers)	WQO Compliance
Good	≤24	Undetectable	Compliant
Fair	25-180	≤10	
Poor	181-610	11-15	Non-compliant
Very Poor	>610	>15	

* Geometric mean *E. coli* count calculated based on all data collected between March and October.

** Skin and gastrointestinal illnesses

Hong Kong's weekly beach grading system

Grade	Beach water quality	<i>E. coli</i> counts per 100 mL*	Minor illness rate** (Cases per 1,000 swimmers)
1	Good	≤24	Undetectable
2	Fair	25-180	≤10
3	Poor	181-610	11-15
4	Very Poor	>610 or last reading >1,600	>15

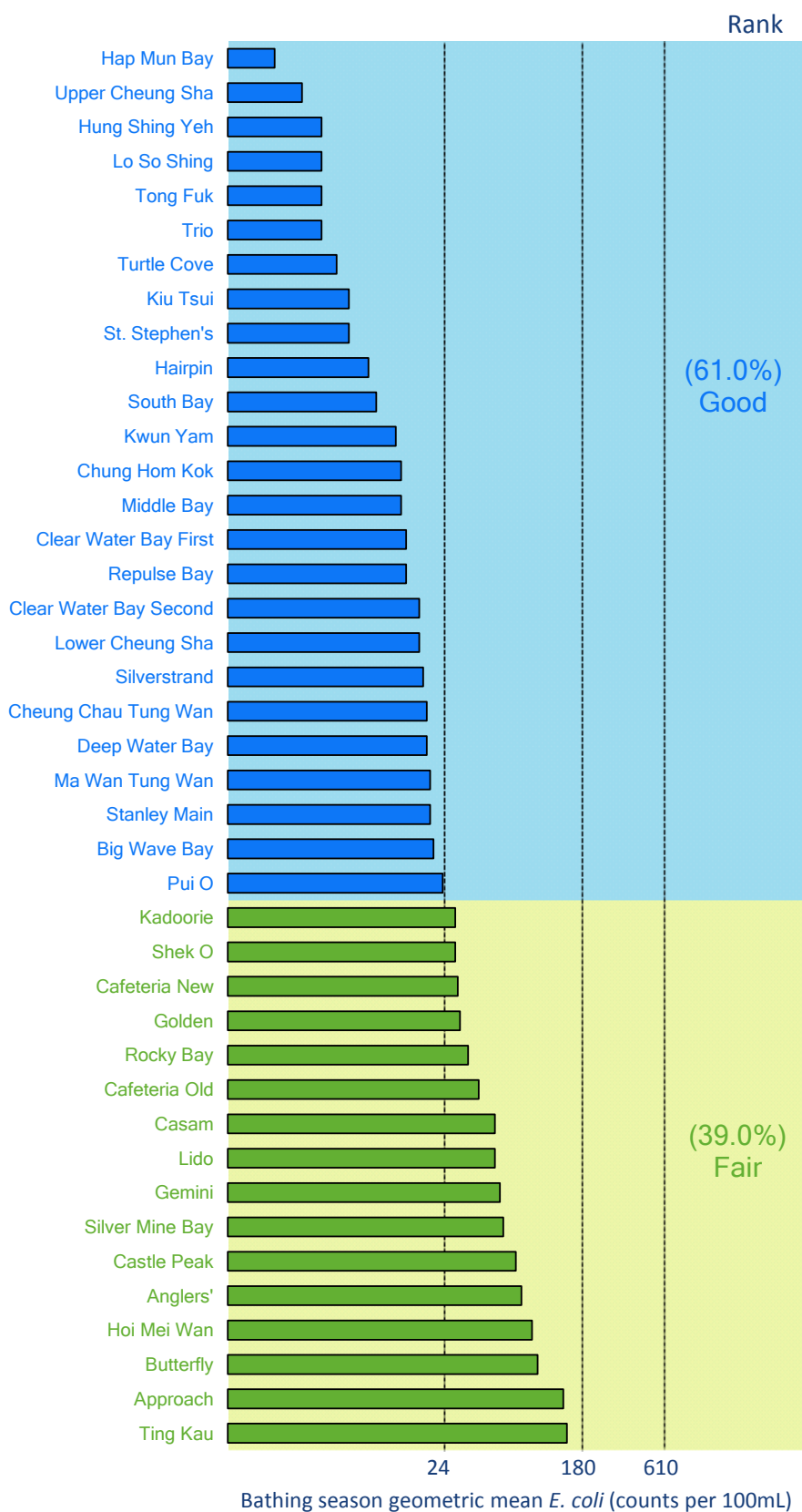
* Unless otherwise indicated, the *E. coli* count represents the geometric mean of the 5 most recent sampling occasions.

** Skin and gastrointestinal illnesses

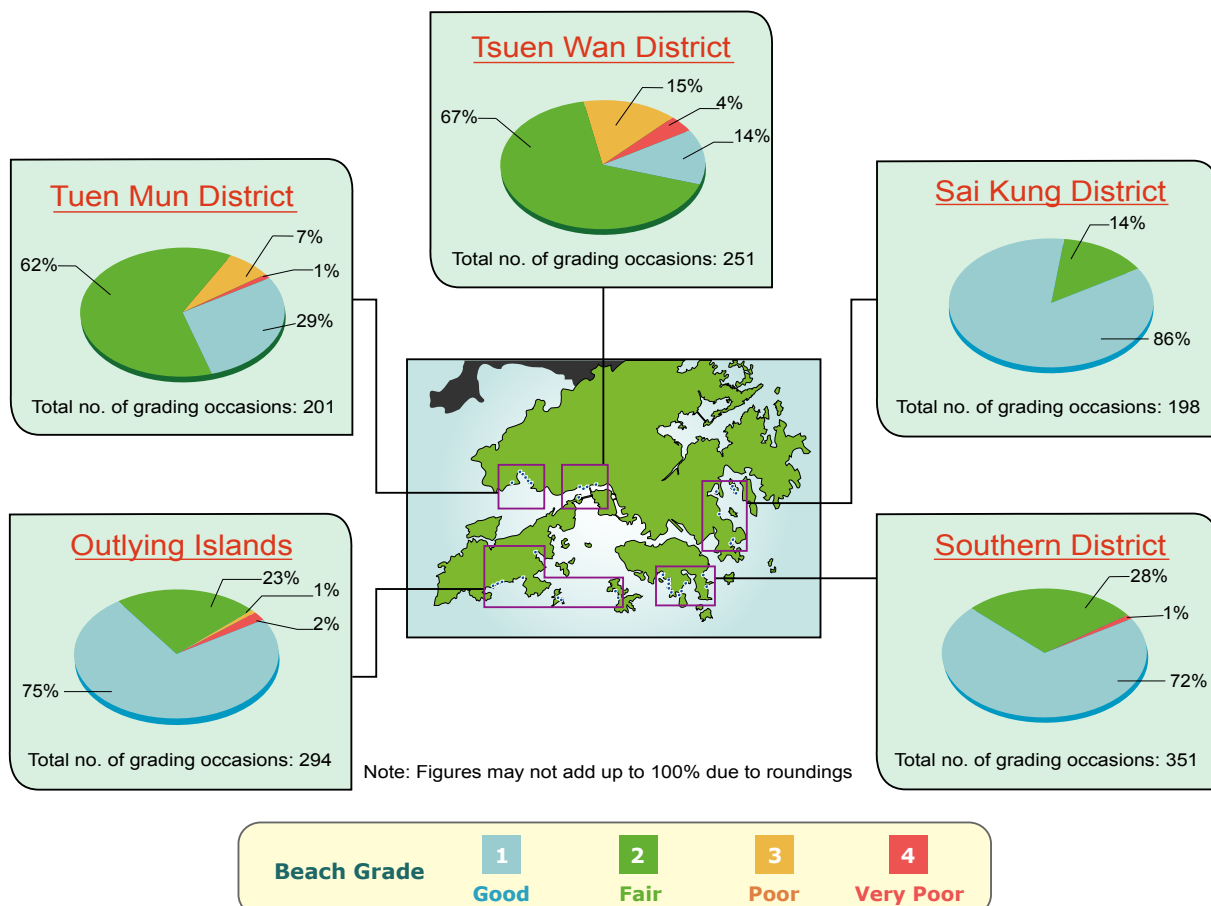


Hong Kong's gazetted beaches 2015 annual ranking

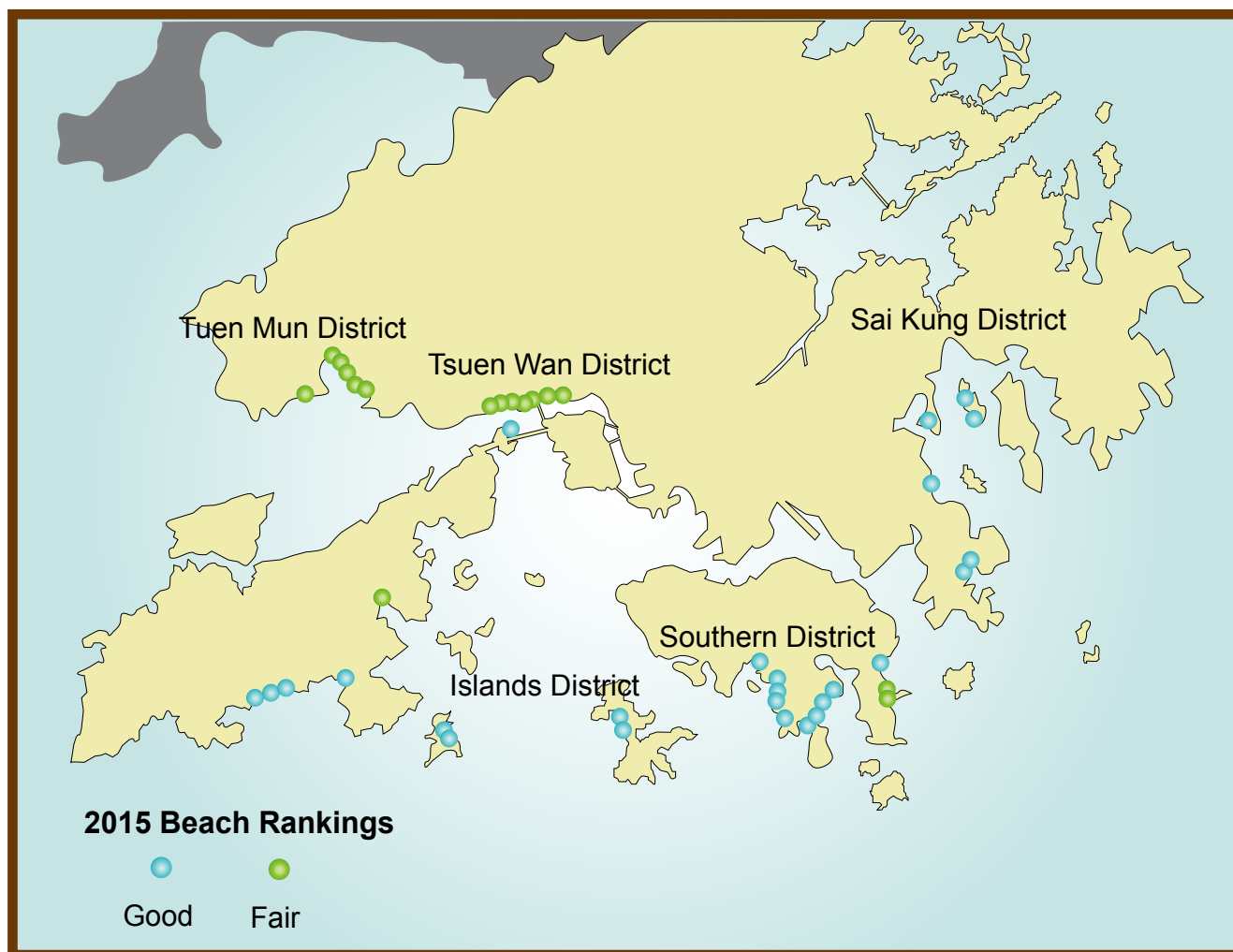
2015 Findings



Weekly beach grading summary of gazetted beaches by district in 2015

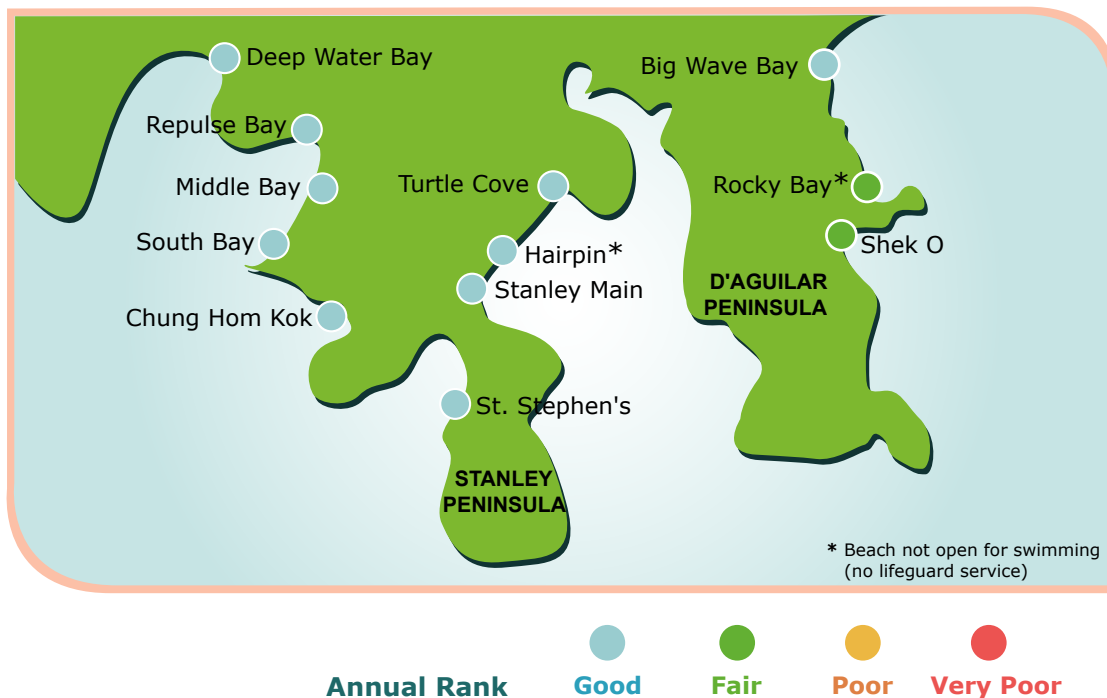


Annual ranking of gazetted beaches at a glance in 2015

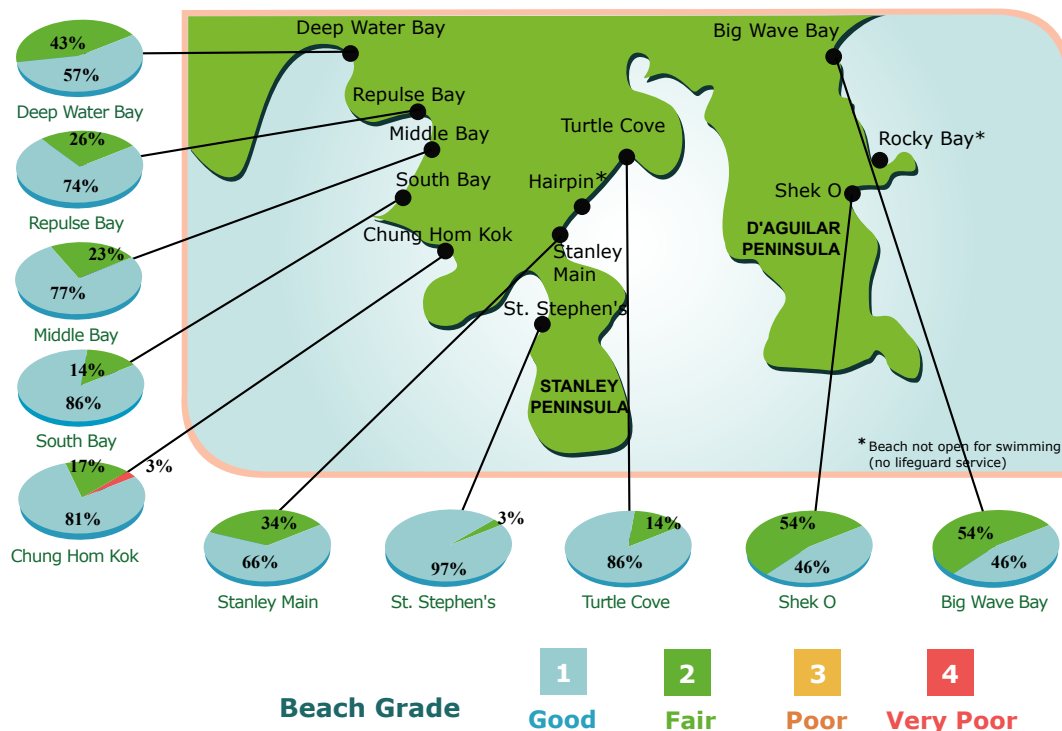


Southern District beaches

Annual ranking



Weekly grading

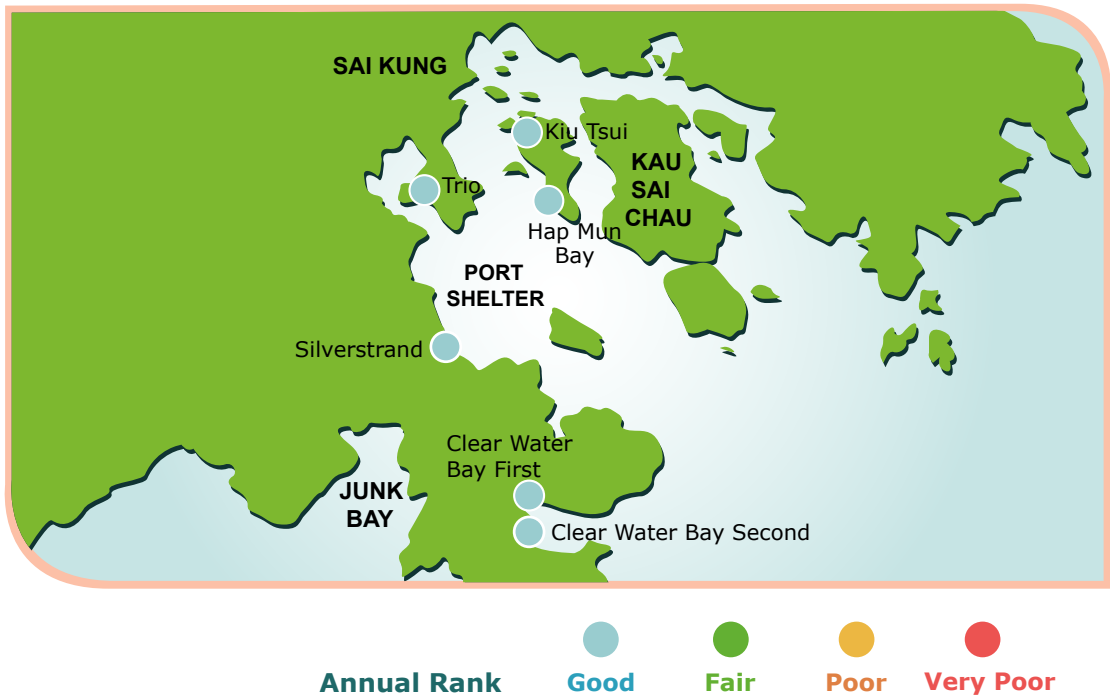


Note: Figures may not add up to 100% due to roundings; "*" Beach not open for swimming. No grading was made.

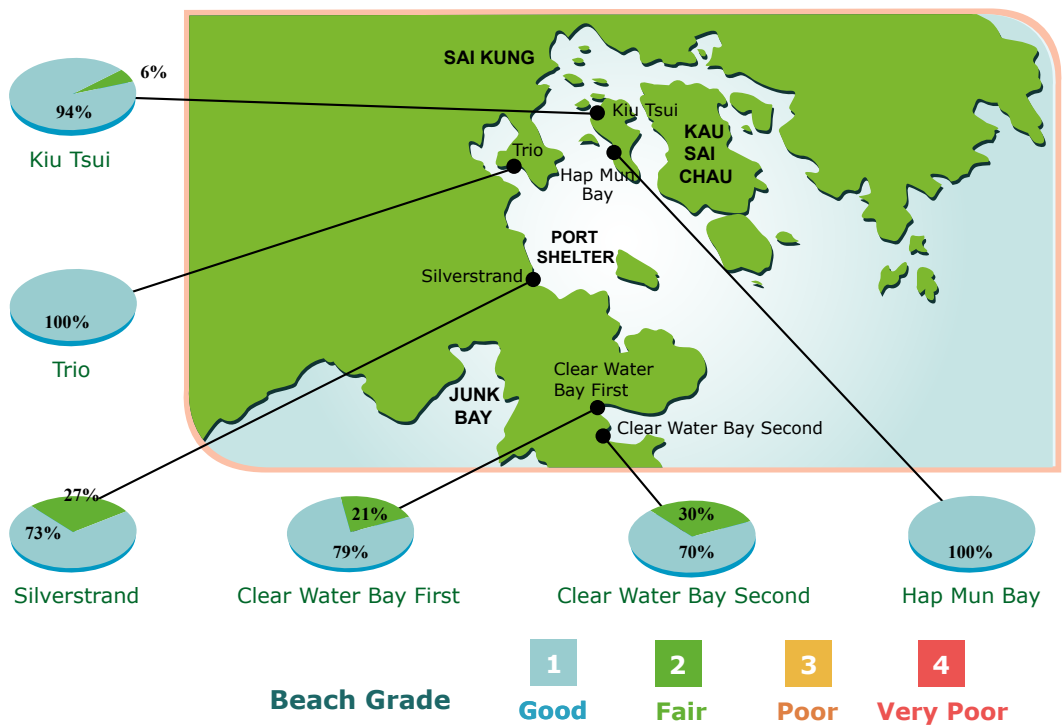


Sai Kung beaches

Annual ranking



Weekly grading

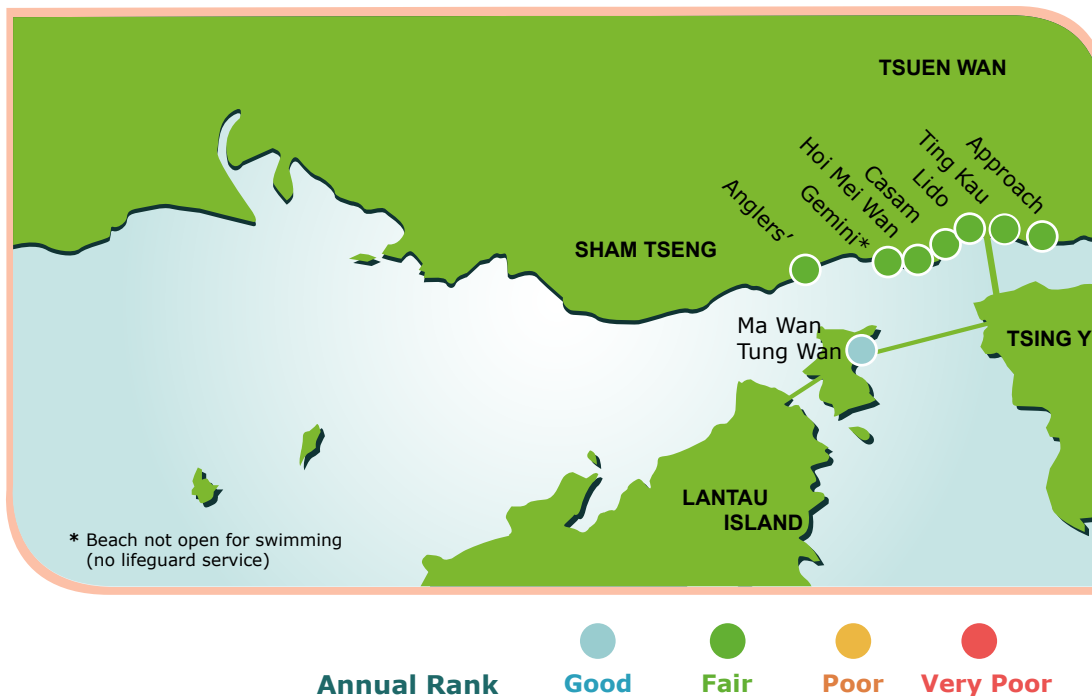


Note: Figures may not add up to 100% due to roundings

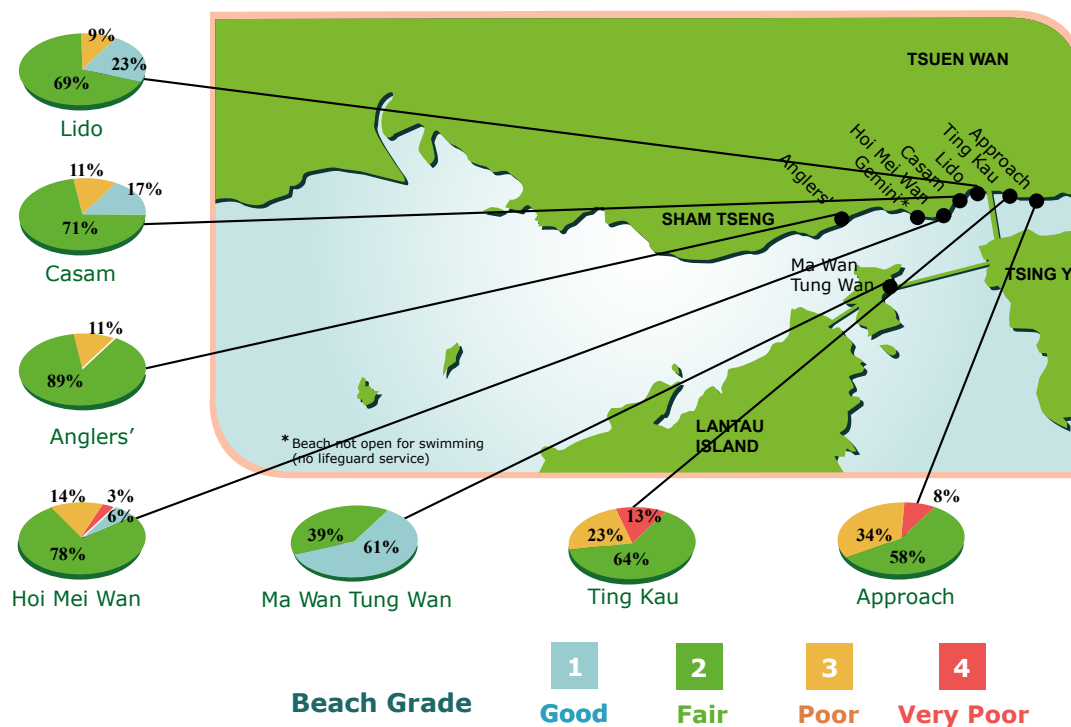


Tsuen Wan beaches

Annual ranking



Weekly grading

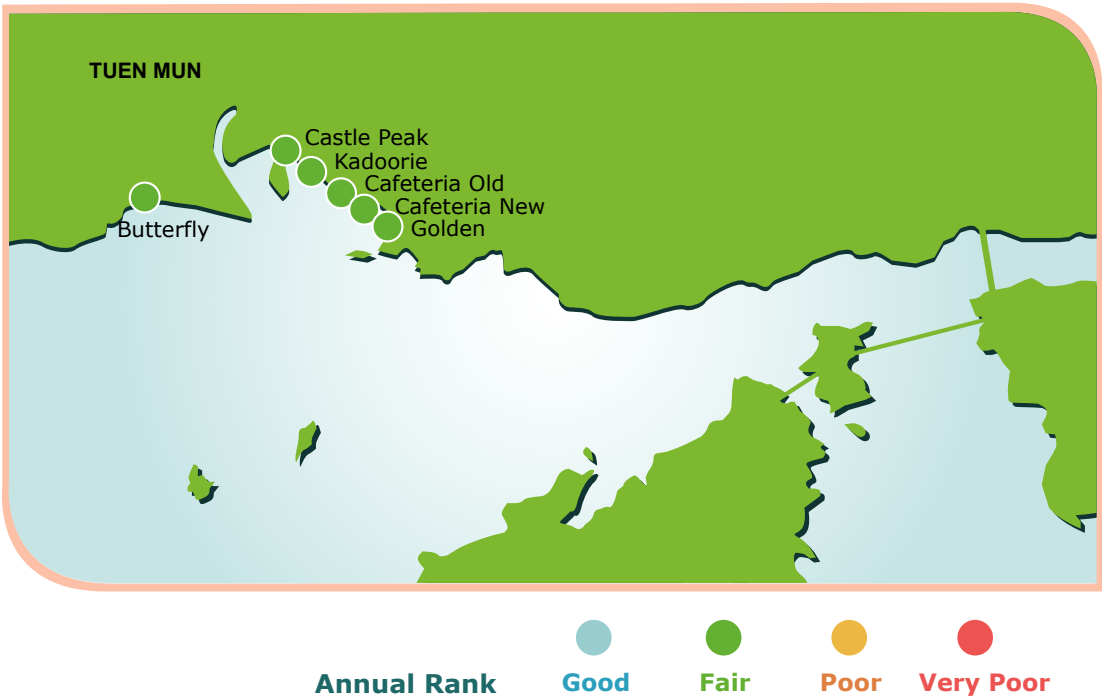


Note: Figures may not add up to 100% due to roundings; "*" Beach not open for swimming. No grading was made.

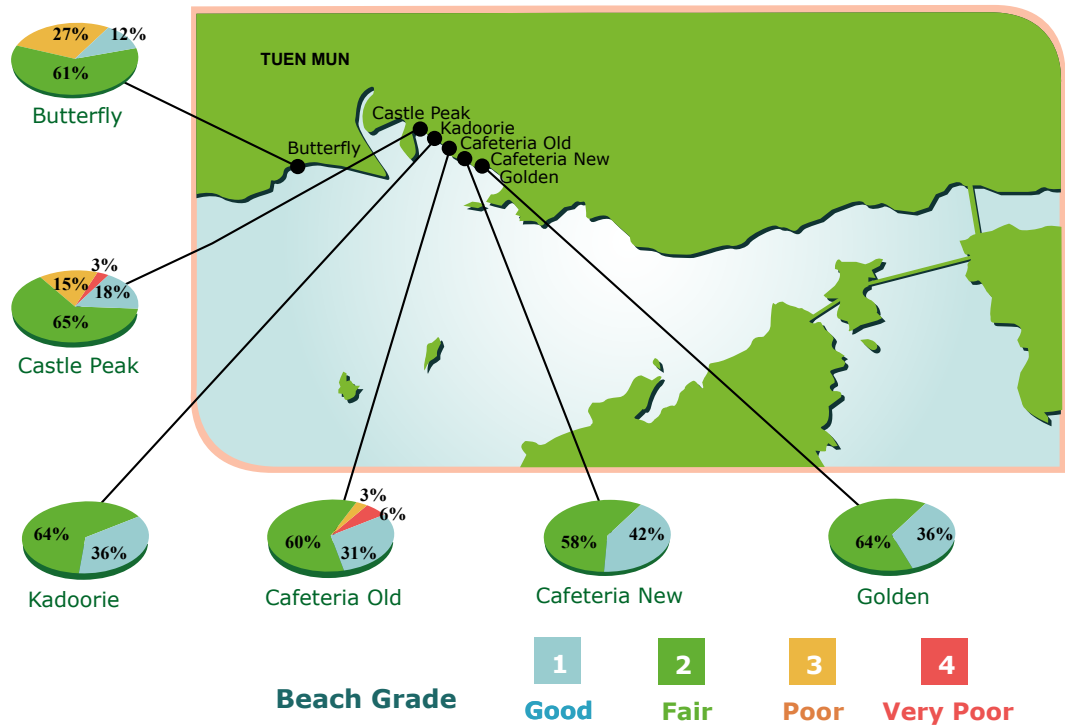


Tuen Mun beaches

Annual ranking



Weekly grading

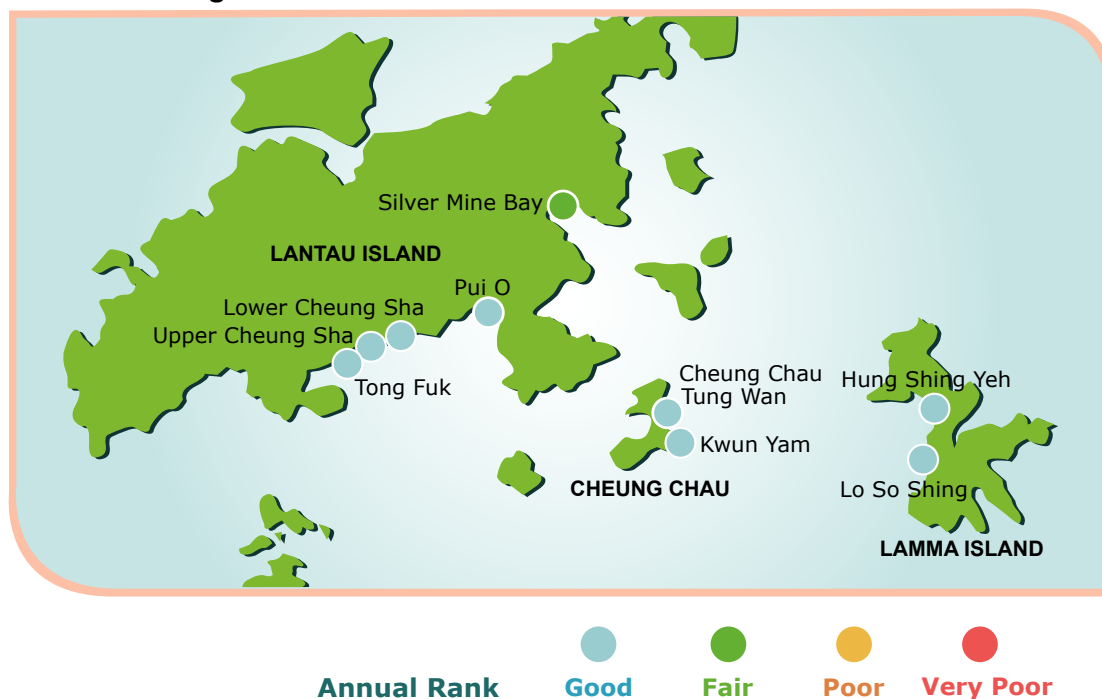


Note: Figures may not add up to 100% due to roundings

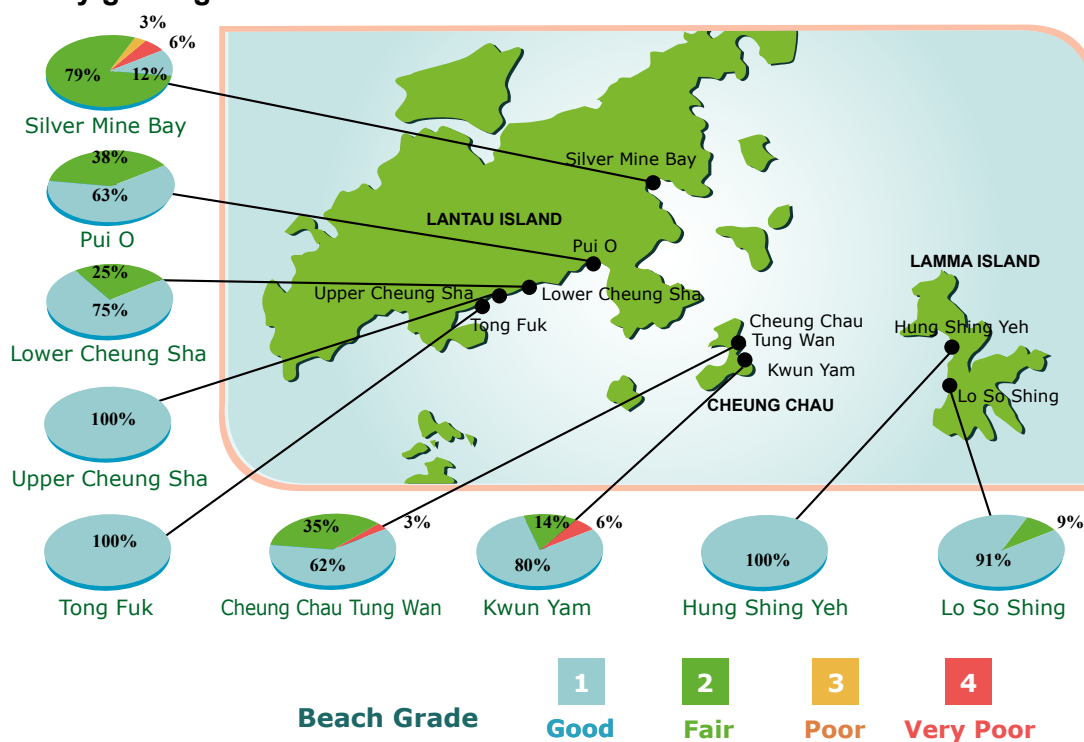


Outlying Islands beaches

Annual ranking



Weekly grading



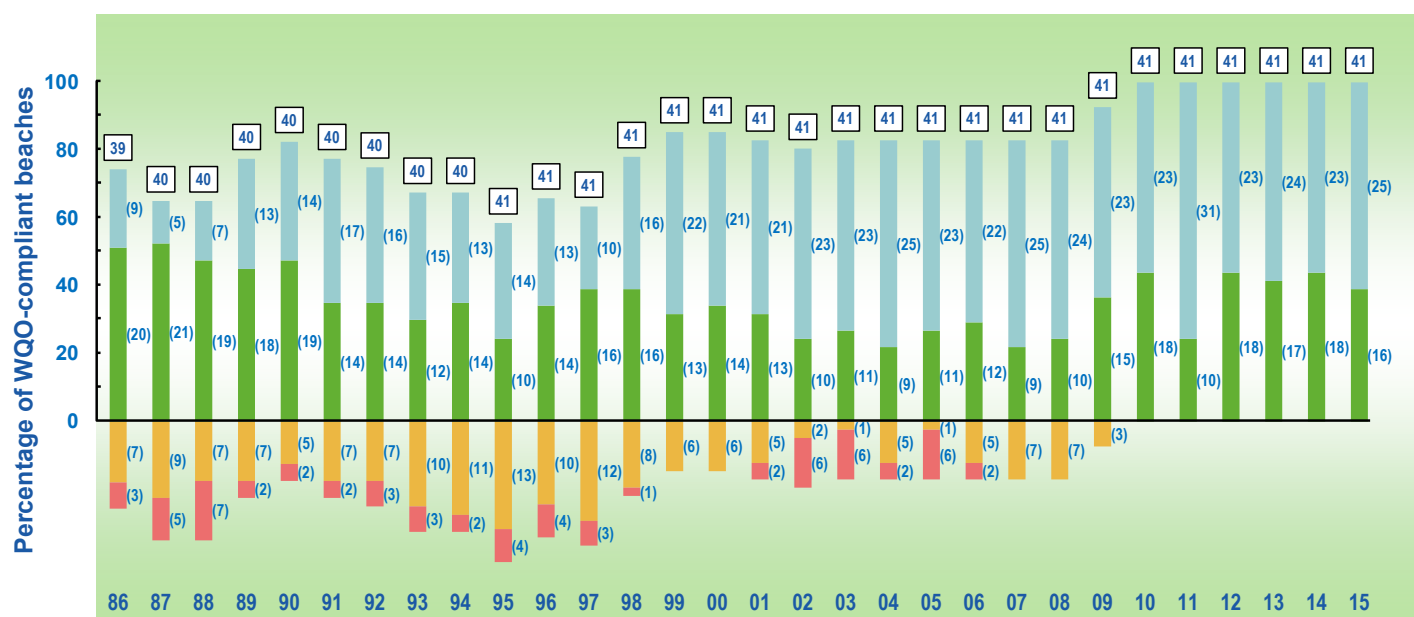
Note: Figures may not add up to 100% due to roundings



Beach Water Quality in Hong Kong 2015

Annual beach rankings of gazetted beaches from 1986 to 2015

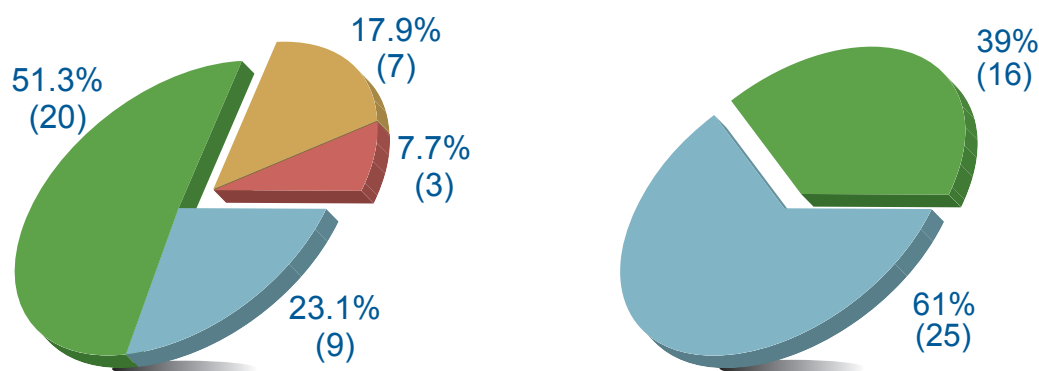
Water Quality Trend



Legend : () Number of beaches in each rank Total number of gazetted beaches
Note: Two beaches degazetted in 1995 were excluded from the calculation.



Comparison of annual beach ranking of gazetted beaches in 1986 and 2015



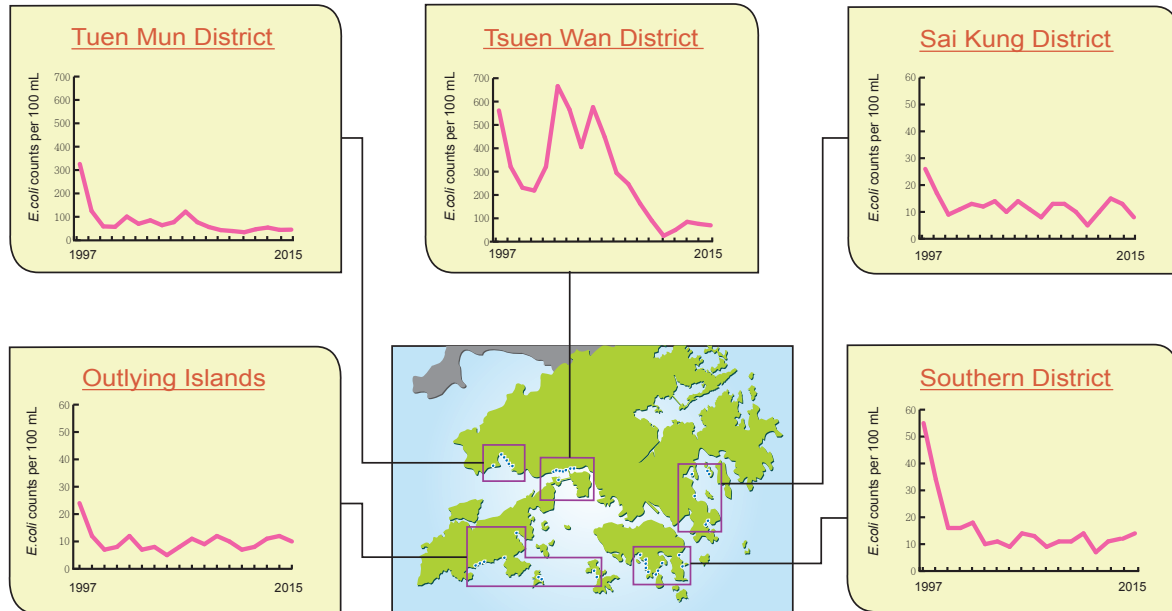
1986

2015



WQO compliant WQO non-compliant () No. of beaches
Note: Two beaches degazetted in 1995 were excluded from the calculation.

Annual geometric mean *E.coli* levels of gazetted beaches by district, 1997 - 2015



Appendix A - Annual geometric mean *E. coli* levels (1997-2015)

Southern District

Annual geometric mean *E.coli* levels

Beach	<i>E. coli</i> counts per 100mL								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Big Wave Bay	179	114	77	98	106	23	33	26	101
Chung Hom Kok	22	40	14	8	15	13	14	9	13
Deep Water Bay	55	46	14	16	18	9	9	7	8
Hairpin	44	72	17	18	10	6	7	7	13
Middle Bay	40	16	11	11	8	9	14	12	20
Repulse Bay	23	11	8	9	13	9	12	4	8
Rocky Bay	399	223	72	80	118	43	28	19	30
Shek O	102	70	32	29	31	13	11	16	19
South Bay	17	6	4	7	5	5	11	9	7
St. Stephen's	40	26	11	6	7	5	9	4	12
Stanley Main	72	24	13	12	9	8	6	5	7
Turtle Cove	40	14	12	11	15	8	4	5	8

Beach	<i>E. coli</i> counts per 100mL									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Big Wave Bay	50	17	31	46	149	17	31	21	40	21
Chung Hom Kok	10	9	13	14	9	5	5	8	13	13
Deep Water Bay	7	7	9	12	9	6	9	11	14	19
Hairpin	11	19	10	12	33	6	9	14	12	8
Middle Bay	18	9	11	12	12	6	15	14	13	13
Repulse Bay	12	7	14	11	7	6	7	10	11	14
Rocky Bay	33	17	15	13	50	23	30	22	16	35
Shek O	24	18	22	11	19	11	16	15	18	29
South Bay	7	5	5	4	4	4	5	4	5	9
St. Stephen's	11	6	9	6	4	4	4	10	5	6
Stanley Main	10	9	10	13	20	6	34	19	9	20
Turtle Cove	7	5	5	5	8	4	6	6	8	5

Note: Figure in red indicates that the beach was not opened for swimming that year



Sai Kung District Annual geometric mean *E.coli* levels

Beach	<i>E. coli</i> counts per 100mL								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Clear Water Bay First	62	41	11	16	28	28	17	9	16
Clear Water Bay Second	66	44	12	26	22	14	21	10	19
Hap Mun Bay	3	2	2	2	1	2	4	3	4
Kiu Tsui	5	4	4	5	5	4	5	17	14
Silverstrand	148	99	32	61	100	133	97	74	67
Trio	30	21	17	10	12	6	10	2	6

Beach	<i>E. coli</i> counts per 100mL									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Clear Water Bay First	20	14	11	15	10	7	8	24	15	14
Clear Water Bay Second	13	9	19	27	13	5	18	15	18	17
Hap Mun Bay	4	3	5	3	3	2	2	7	4	2
Kiu Tsui	11	6	13	16	13	9	10	13	11	6
Silverstrand	30	33	35	51	28	18	30	39	40	18
Trio	5	2	12	5	6	2	9	8	10	4

Tsuen Wan District Annual geometric mean *E.coli* levels

Beach	<i>E. coli</i> counts per 100mL								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Anglers'	691	502	442	326	621	1169	693	619	895
Approach	1009	435	387	316	411	696	762	470	663
Casam	609	239	231	209	233	741	702	594	716
Gemini	458	399	350	258	323	1155	875	1102	1042
Hoi Mei Wan	471	280	109	177	199	547	442	287	641
Lido	600	262	231	181	269	683	734	523	782
Ma Wan Tung Wan	110	92	51	39	133	201	159	101	132
Ting Kau	1583	1045	515	593	739	742	831	412	512

E. coli counts per 100mL										
Beach	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Anglers'	772	496	510	276	134	27	69	133	130	77
Approach	599	352	251	208	124	59	83	106	121	143
Casam	426	305	289	144	102	21	50	71	63	52
Gemini	853	566	481	410	137	19	40	135	110	56
Hoi Mei Wan	308	286	271	130	87	23	51	86	58	90
Lido	459	280	296	178	87	21	32	53	57	52
Ma Wan Tung Wan	171	78	53	60	17	10	24	41	31	20
Ting Kau	469	405	258	145	141	58	88	107	89	151

Note: Figure in red indicates that the beach was not opened for swimming that year



Beach Water Quality in Hong Kong 2015

Tuen Mun District

Annual geometric mean *E.coli* levels

Beach	<i>E. coli</i> counts per 100mL								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Butterfly	259	121	44	61	74	60	74	55	55
Cafeteria New	309	100	60	51	104	62	80	54	70
Cafeteria Old	435	138	58	57	125	74	76	61	81
Castle Peak	332	199	57	58	105	58	64	80	90
Golden	352	98	44	50	87	66	84	46	62
Kadoorie	290	130	109	68	120	114	160	98	117

	E. coli counts per 100mL									
Beach	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Butterfly	94	84	56	49	30	41	42	71	38	98
Cafeteria New	120	68	48	38	31	27	47	50	31	30
Cafeteria Old	150	67	45	46	34	29	48	39	45	41
Castle Peak	139	64	47	35	63	49	48	78	91	71
Golden	117	87	63	42	37	26	62	45	39	31
Kadoorie	118	101	87	48	45	37	40	52	37	29

Note: Figure in red indicates that the beach was not opened for swimming that year

Outlying Islands

Annual geometric mean *E.coli* levels

Beach	<i>E. coli</i> counts per 100mL								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Cheung Chau Tung Wan	24	19	11	12	16	17	11	12	14
Hung Shing Yeh	5	3	3	5	6	2	5	4	4
Kwun Yam	32	21	6	10	11	9	7	5	10
Lo So Shing	3	2	4	2	5	2	3	2	3
Lower Cheung Sha	85	23	10	12	22	10	14	7	12
Pui O	36	16	10	10	17	10	15	9	10
Silver Mine Bay	481	123	39	50	67	42	50	14	34
Tong Fuk	14	10	4	5	6	4	3	4	5
Upper Cheung Sha	8	3	2	3	5	3	3	3	3

Beach	E. coli counts per 100mL									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Cheung Chau Tung Wan	37	21	15	17	12	6	13	10	14	19
Hung Shing Yeh	4	6	4	6	4	3	4	4	5	4
Kwun Yam	13	9	10	9	8	5	5	9	8	12
Lo So Shing	4	3	5	7	3	3	4	5	5	4
Lower Cheung Sha	11	12	20	13	11	9	10	17	21	17
Pui O	16	30	24	12	14	13	22	51	60	24
Silver Mine Bay	52	22	43	45	31	28	38	39	51	59
Tong Fuk	5	4	10	5	5	4	4	7	4	4
Upper Cheung Sha	4	4	7	5	4	3	4	4	5	3



Appendix B - 2015 Beach visitor number

Southern District

Visitor numbers during the 2015 bathing season

Beach	Daily average		Peak day	Peak month	Total
	Weekdays	Weekends & public holidays			
Big Wave Bay	302	1,023	2,500	23,150	131,590
Chung Hom Kok	235	626	2,000	15,000	88,770
Deep Water Bay	910	4,428	15,000	115,800	504,400
Hairpin	147	266	500	7,550	45,510
Middle Bay	262	349	750	15,100	71,150
Repulse Bay	10,318	13,620	21,000	366,100	2,792,000
Rocky Bay	-	-	-	-	-
Shek O	2,858	7,166	23,000	343,600	1,044,800
South Bay	200	675	2,500	26,450	86,950
St. Stephen`s	155	378	800	10,500	55,700
Stanley Main	682	2,840	18,400	72,240	339,760
Turtle Cove	61	475	2,730	9,410	48,050

Note: Information provided by the Leisure and Cultural Services Department

Beach Water Quality in Hong Kong 2015

Sai Kung District

Visitor numbers during the 2015 bathing season

Beach	Daily average		Peak day	Peak month	Total
	Weekdays	Weekends & public holidays			
Clear Water Bay First	192	596	1,590	15,570	79,410
Clear Water Bay Second	1,964	4,540	22,000	200,600	687,190
Hap Mun Bay	332	1,170	5,400	44,940	148,370
Kiu Tsui	255	804	2,600	15,040	106,320
Silverstrand	195	1,086	7,600	28,970	119,000
Trio	322	1,019	3,610	33,540	134,670

Note: Information provided by the Leisure and Cultural Services Department

Tsuen Wan District

Visitor numbers during the 2015 bathing season

Beach	Daily average		Peak day	Peak month	Total
	Weekdays	Weekends & public holidays			
Anglers'	149	561	1,240	10,030	69,390
Approach	164	431	1,080	11,680	61,530
Casam	64	152	400	3,560	22,710
Gemini	9	31	50	620	4,010
Hoi Mei Wan	59	157	430	3,490	22,340
Lido	341	917	10,300	23,750	129,530
Ma Wan Tung Wan	518	2,427	4,500	51,380	279,670
Ting Kau	149	394	1,230	10,360	56,190

Note: Information provided by the Leisure and Cultural Services Department



Tuen Mun District

Visitor numbers during the 2015 bathing season

Beach	Daily average		Peak day	Peak month	Total
	Weekdays	Weekends & public holidays			
Butterfly	784	1,430	2,200	36,700	243,750
Cafeteria New	878	1,703	3,850	64,500	281,150
Cafeteria Old	847	1,293	3,320	39,300	243,250
Castle Peak	391	1,310	2,000	22,440	169,270
Golden	1,997	4,480	8,300	104,000	687,900
Kadoorie	653	973	1,550	32,090	185,495

Note: Information provided by the Leisure and Cultural Services Department

Outlying Islands

Visitor numbers during the 2015 bathing season

Beach	Daily average		Peak day	Peak month	Total
	Weekdays	Weekends & public holidays			
Cheung Chau Tung Wan	401	1,141	6,500	32,500	157,470
Hung Shing Yeh	459	1,136	2,020	30,900	166,640
Kwun Yam	105	485	1,040	11,500	56,090
Lo So Shing	100	318	630	6,770	41,900
Lower Cheung Sha	286	1,064	2,170	28,700	132,280
Pui O	843	2,357	7,100	71,050	327,630
Silver Mine Bay	478	1,294	4,800	34,900	182,440
Tong Fuk	280	513	1,610	19,280	87,260
Upper Cheung Sha	377	611	1,400	23,610	111,070

Note: Information provided by the Leisure and Cultural Services Department



Appendix C - Physicochemical water quality data for gazetted beaches, 2015

Southern District

Summary of physicochemical water quality data of gazetted beaches, 2015

Beach	pH	Salinity (psu) ¹	Turbidity (NTU) ²	Temperature (°C)	Dissolved Oxygen	
					(mg/L)	(% Saturation)
Big Wave Bay	8.31 (8.11 - 8.49)	30.6 (11.9 - 33.3)	3.03 (1.05 - 12.50)	25.8 (17.9 - 30.6)	6.8 (5.1 - 8.8)	96 (76 - 111)
Chung Hom Kok	8.35 (8.16 - 8.67)	30.5 (22.1 - 33.6)	3.81 (1.24 - 16.50)	26.4 (18.8 - 30.0)	6.8 (5.4 - 9.7)	97 (76 - 111)
Deep Water Bay	8.29 (8.03 - 8.72)	29.6 (19.3 - 33.5)	6.91 (1.89 - 29.10)	26.7 (18.1 - 30.4)	6.8 (5.5 - 8.1)	99 (86 - 118)
Hairpin*	8.37 (7.97 - 8.72)	30.4 (21.3 - 33.5)	2.14 (0.69 - 5.57)	26.8 (18.1 - 31.5)	7.1 (6.2 - 8.3)	101 (81 - 118)
Middle Bay	8.37 (8.18 - 8.78)	29.9 (21.1 - 33.4)	4.55 (1.06 - 16.90)	26.4 (18.5 - 29.8)	6.9 (5.5 - 8.8)	98 (85 - 116)
Repulse Bay	8.35 (8.13 - 8.74)	30.4 (21.5 - 33.6)	4.95 (1.33 - 26.20)	26.1 (18.5 - 29.9)	6.8 (5.3 - 8.6)	97 (83 - 110)
Rocky Bay*	8.27 (8.05 - 8.44)	31.6 (24.2 - 33.3)	2.80 (0.49 - 8.46)	25.7 (17.8 - 30.7)	6.7 (5.7 - 8.5)	95 (80 - 108)
Shek O	8.33 (8.19 - 8.67)	31.5 (21.9 - 33.4)	3.81 (0.93 - 13.60)	25.9 (17.9 - 30.7)	6.9 (6.1 - 8.0)	98 (77 - 120)
South Bay	8.36 (8.17 - 8.71)	30.3 (21.6 - 33.5)	3.44 (1.12 - 10.50)	26.5 (18.8 - 30.0)	6.7 (5.3 - 8.0)	98 (82 - 116)
St. Stephen's	8.33 (8.17 - 8.55)	30.2 (21.9 - 33.6)	3.41 (1.07 - 28.50)	26.4 (17.1 - 30.1)	6.9 (5.4 - 9.6)	99 (85 - 122)
Stanley Main	8.37 (8.14 - 8.72)	30.2 (21.6 - 33.1)	3.53 (0.69 - 13.40)	26.8 (18.3 - 30.9)	7.0 (6.1 - 8.7)	102 (77 - 130)
Turtle Cove	8.37 (8.09 - 8.74)	30.1 (20.4 - 33.6)	4.84 (0.86 - 15.90)	26.6 (18.3 - 31.3)	6.8 (5.9 - 8.6)	98 (76 - 122)

1. Practical Salinity Unit; 2. Nephelometric Turbidity Unit

Note: Data presented are arithmetic means; figures in brackets are ranges.

* Beach not open for swimming (no lifeguard service)



Sai Kung District

Summary of physicochemical water quality data of gazetted beaches, 2015

Beach	pH	Salinity (psu) ¹	Turbidity (NTU) ²	Temperature (°C)	Dissolved Oxygen	
					(mg/L)	(% Saturation)
Clear Water Bay First	8.37 (8.08 - 8.63)	31.4 (22.7 - 33.4)	5.16 (1.31 - 25.30)	26.8 (17.1 - 32.0)	6.9 (6.1 - 8.1)	99 (91 - 120)
Clear Water Bay Second	8.36 (8.15 - 8.59)	31.9 (24.5 - 33.4)	6.32 (1.43 - 25.20)	26.7 (17.1 - 32.0)	6.8 (6.0 - 7.4)	98 (90 - 112)
Hap Mun Bay	8.39 (8.21 - 8.64)	31.6 (24.1 - 33.4)	2.45 (0.40 - 11.10)	26.9 (17.7 - 32.3)	6.7 (5.6 - 8.6)	97 (75 - 123)
Kiu Tsui	8.40 (8.10 - 8.70)	31.4 (23.8 - 33.4)	1.96 (0.50 - 5.02)	27.0 (17.9 - 32.0)	6.8 (5.5 - 7.9)	98 (76 - 110)
Silverstrand	8.38 (8.15 - 8.65)	30.5 (24.3 - 32.7)	3.08 (0.77 - 9.18)	26.7 (17.7 - 32.0)	6.8 (5.9 - 7.9)	98 (91 - 105)
Trio	8.38 (8.21 - 8.66)	30.7 (16.8 - 33.2)	2.39 (0.76 - 5.13)	27.2 (17.9 - 33.5)	6.7 (5.5 - 8.0)	97 (73 - 116)

1. Practical Salinity Unit; 2. Nephelometric Turbidity Unit

Note: Data presented are arithmetic means; figures in brackets are ranges.

Tsuen Wan District

Summary of physicochemical water quality data of gazetted beaches, 2015

Beach	pH	Salinity (psu) ¹	Turbidity (NTU) ²	Temperature (°C)	Dissolved Oxygen	
					(mg/L)	(% Saturation)
Anglers'	8.19 (7.88 - 8.56)	26.1 (10.6 - 32.7)	4.81 (1.47 - 11.20)	26.1 (18.4 - 30.4)	6.6 (5.5 - 9.1)	93 (75 - 113)
Approach	8.19 (7.94 - 8.43)	24.9 (15.0 - 32.3)	4.48 (1.69 - 13.90)	26.4 (18.5 - 29.8)	6.7 (5.1 - 9.2)	94 (72 - 122)
Casam	8.22 (8.05 - 8.51)	25.9 (17.0 - 32.4)	3.42 (1.59 - 7.37)	26.0 (15.5 - 29.5)	6.6 (5.5 - 9.3)	93 (73 - 117)
Gemini*	8.19 (7.91 - 8.56)	26.3 (13.1 - 32.7)	3.99 (1.47 - 11.80)	26.2 (18.4 - 29.8)	6.6 (5.5 - 7.9)	94 (70 - 115)
Hoi Mei Wan	8.18 (7.96 - 8.49)	25.6 (15.9 - 32.5)	3.62 (1.72 - 8.15)	26.5 (18.4 - 30.4)	6.5 (5.4 - 8.8)	93 (77 - 117)
Lido	8.19 (7.97 - 8.55)	25.9 (16.5 - 32.6)	3.84 (1.61 - 9.62)	26.3 (18.5 - 29.8)	6.5 (5.5 - 8.0)	93 (70 - 115)
Ma Wan Tung Wan	8.18 (8.00 - 8.32)	28.0 (18.1 - 32.7)	5.60 (2.52 - 12.40)	26.0 (18.5 - 31.0)	6.5 (5.5 - 7.7)	93 (76 - 100)
Ting Kau	8.22 (7.93 - 8.48)	24.7 (15.1 - 32.3)	3.79 (1.61 - 7.96)	26.5 (18.4 - 29.4)	6.5 (5.0 - 8.6)	92 (70 - 119)

1. Practical Salinity Unit; 2. Nephelometric Turbidity Unit

Note: Data presented are arithmetic means; figures in brackets are ranges.

* Beach not open for swimming (no lifeguard service)

Beach Water Quality in Hong Kong 2015

Tuen Mun District

Summary of physicochemical water quality data of gazetted beaches, 2015

Beach	pH	Salinity (psu) ¹	Turbidity (NTU) ²	Temperature (°C)	Dissolved Oxygen	
					(mg/L)	(% Saturation)
Butterfly	8.19 (7.95 - 8.52)	23.3 (9.1 - 31.3)	9.57 (2.89 - 22.30)	27.1 (18.5 - 30.9)	6.7 (5.2 - 8.8)	96 (70 - 129)
Cafeteria New	8.22 (7.92 - 8.60)	22.7 (7.6 - 31.4)	9.99 (4.35 - 16.70)	26.7 (18.8 - 30.8)	6.6 (5.3 - 7.8)	94 (71 - 114)
Cafeteria Old	8.21 (7.97 - 8.53)	22.2 (7.6 - 31.5)	10.27 (2.62 - 27.20)	26.9 (18.7 - 30.6)	6.6 (5.3 - 8.4)	95 (70 - 115)
Castle Peak	8.23 (7.98 - 8.56)	22.3 (5.9 - 31.7)	6.36 (2.62 - 24.10)	27.2 (18.7 - 31.3)	6.8 (5.8 - 9.2)	97 (77 - 125)
Golden	8.20 (7.96 - 8.51)	22.8 (7.7 - 31.6)	11.59 (4.98 - 26.60)	26.7 (18.8 - 30.8)	6.6 (5.2 - 8.0)	95 (71 - 117)
Kadoorie	8.20 (7.98 - 8.46)	22.6 (7.1 - 31.6)	6.40 (2.43 - 12.50)	26.9 (18.8 - 30.8)	6.7 (5.4 - 8.3)	94 (71 - 114)

1. Practical Salinity Unit; 2. Nephelometric Turbidity Unit

Note: Data presented are arithmetic means; figures in brackets are ranges.

Outlying Islands

Summary of physicochemical water quality data of gazetted beaches, 2015

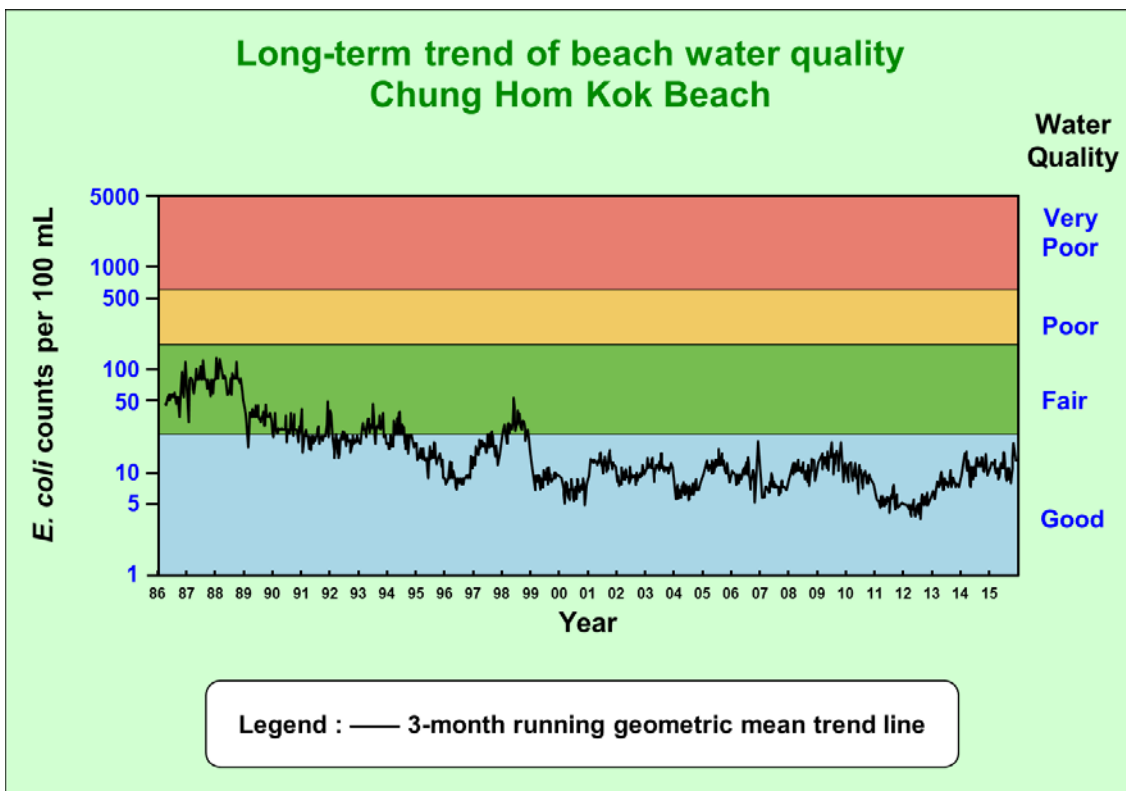
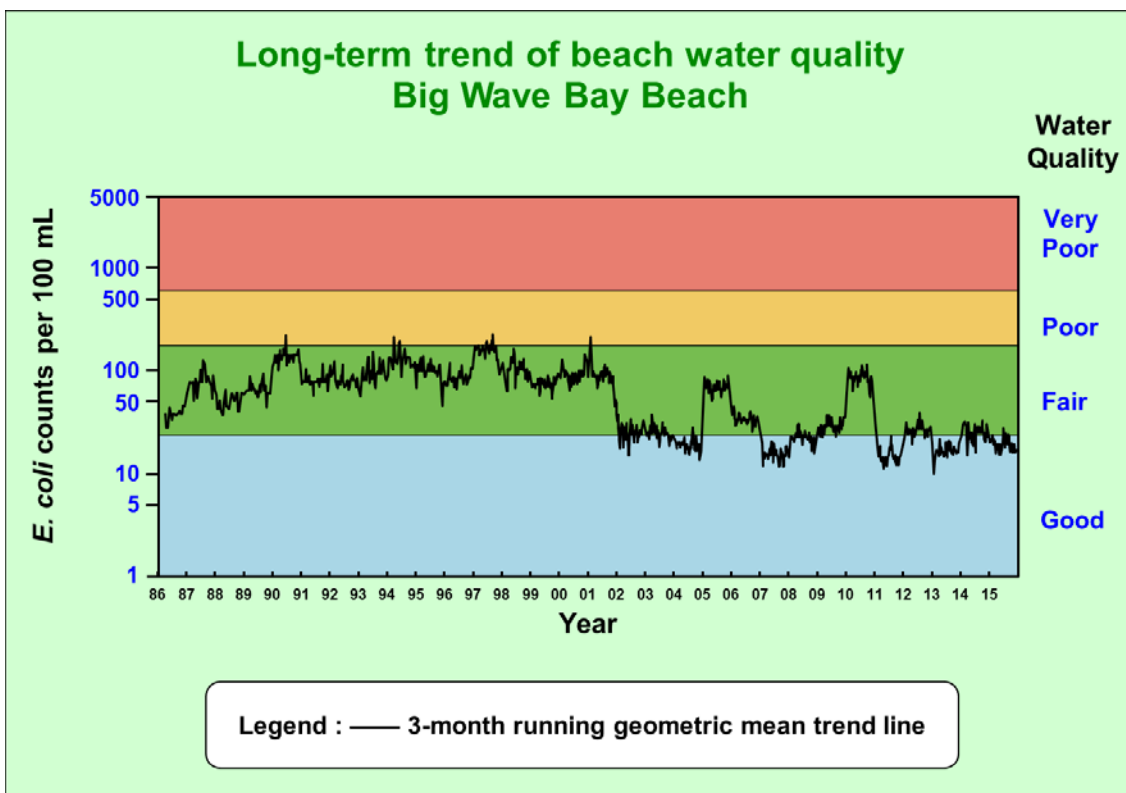
Beach	pH	Salinity (psu) ¹	Turbidity (NTU) ²	Temperature (°C)	Dissolved Oxygen	
					(mg/L)	(% Saturation)
Cheung Chau Tung Wan	8.28 (8.03 - 8.53)	28.8 (22.4 - 32.8)	3.62 (1.30 - 14.40)	26.5 (18.4 - 30.6)	6.7 (5.6 - 8.5)	95 (75 - 121)
Hung Shing Yeh	8.28 (8.13 - 8.68)	28.6 (17.2 - 33.1)	5.15 (1.18 - 17.30)	26.5 (17.7 - 30.4)	6.8 (6.0 - 8.7)	96 (83 - 114)
Kwun Yam	8.27 (7.99 - 8.57)	28.4 (21.0 - 32.7)	4.26 (1.41 - 17.20)	26.5 (18.3 - 29.9)	6.9 (5.3 - 8.7)	96 (75 - 120)
Lo So Shing	8.29 (8.10 - 8.60)	29.2 (13.9 - 33.3)	3.80 (1.33 - 25.20)	26.6 (18.9 - 31.2)	6.9 (6.0 - 8.9)	96 (82 - 113)
Lower Cheung Sha	8.35 (8.15 - 8.78)	28.2 (17.2 - 32.5)	9.94 (3.52 - 38.60)	26.9 (18.3 - 31.6)	6.8 (5.6 - 8.1)	96 (81 - 117)
Pui O	8.35 (8.15 - 8.83)	27.8 (13.2 - 32.8)	12.06 (4.13 - 36.20)	27.5 (18.6 - 32.2)	6.7 (5.3 - 7.8)	96 (78 - 111)
Silver Mine Bay	8.27 (8.01 - 8.67)	26.0 (9.8 - 31.6)	10.41 (2.28 - 23.20)	27.4 (18.1 - 32.0)	6.8 (5.1 - 8.0)	96 (77 - 121)
Tong Fuk	8.37 (8.12 - 8.81)	28.5 (18.0 - 32.6)	7.20 (1.75 - 19.50)	26.7 (18.4 - 30.5)	6.8 (6.0 - 7.7)	96 (77 - 104)
Upper Cheung Sha	8.37 (8.16 - 8.82)	28.6 (17.4 - 32.9)	8.51 (2.06 - 56.60)	26.6 (18.5 - 30.4)	6.8 (6.0 - 8.5)	96 (84 - 104)

1. Practical Salinity Unit; 2. Nephelometric Turbidity Unit

Note: Data presented are arithmetic means; figures in brackets are ranges.

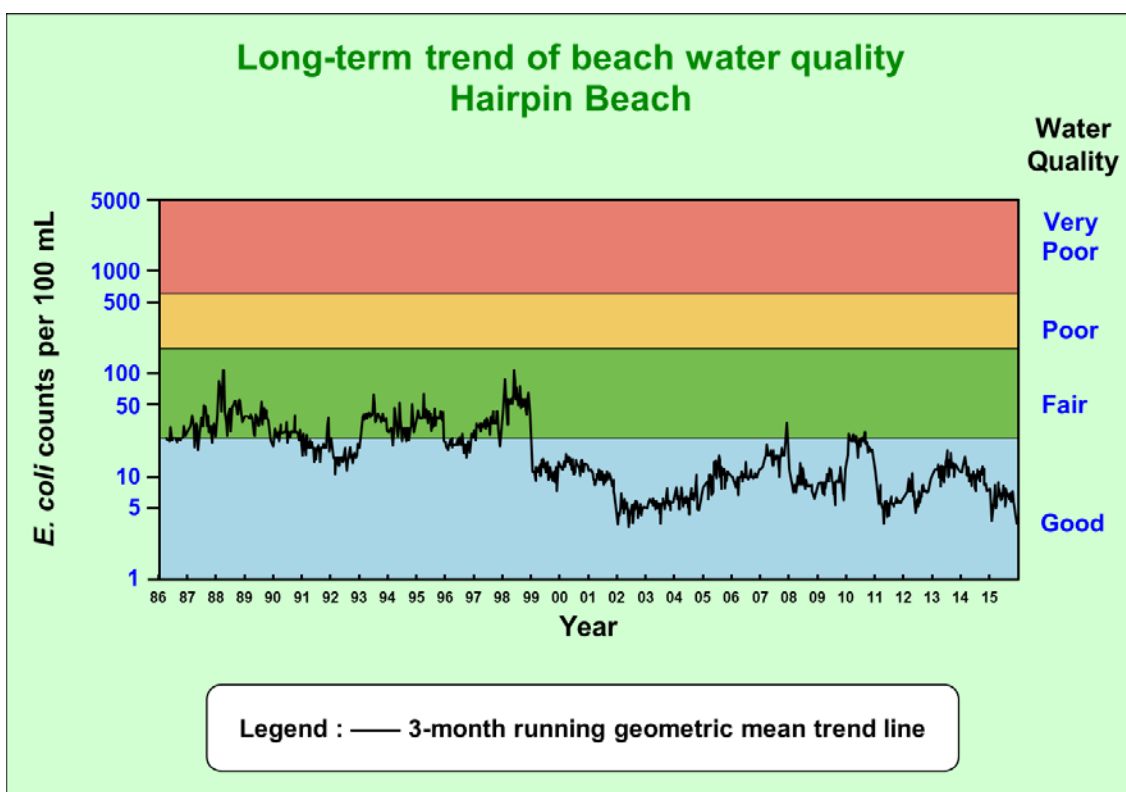
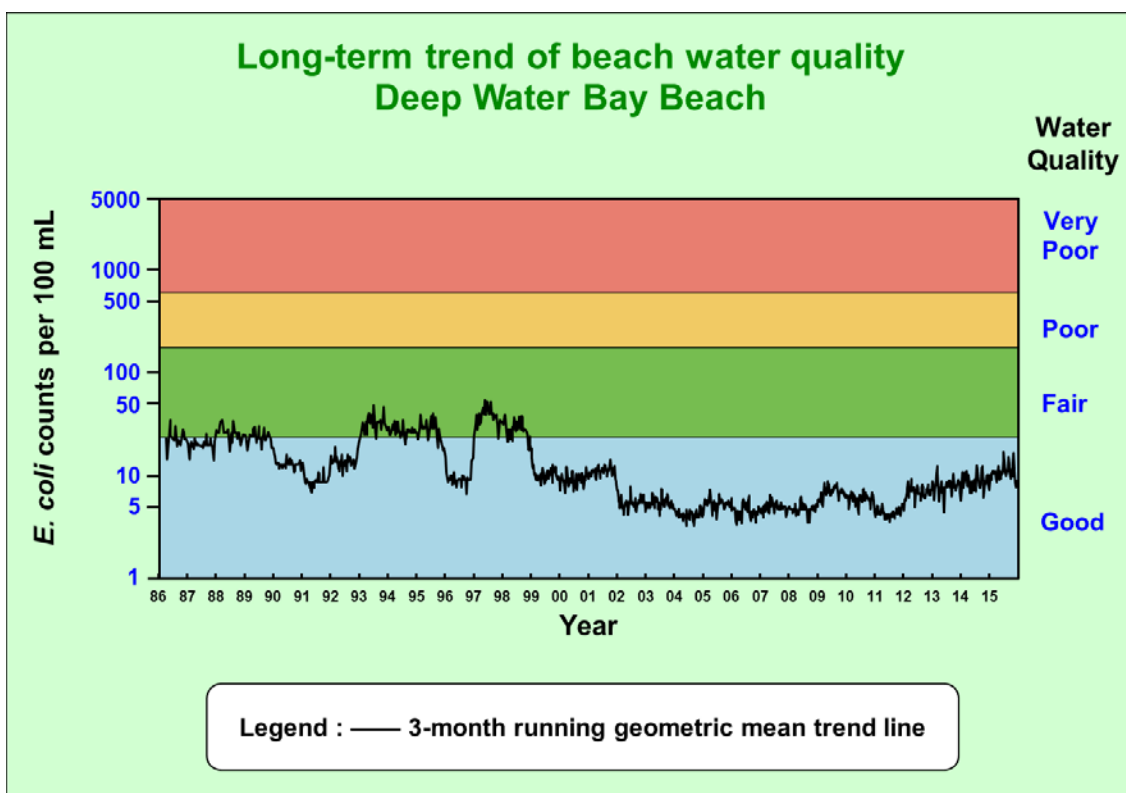


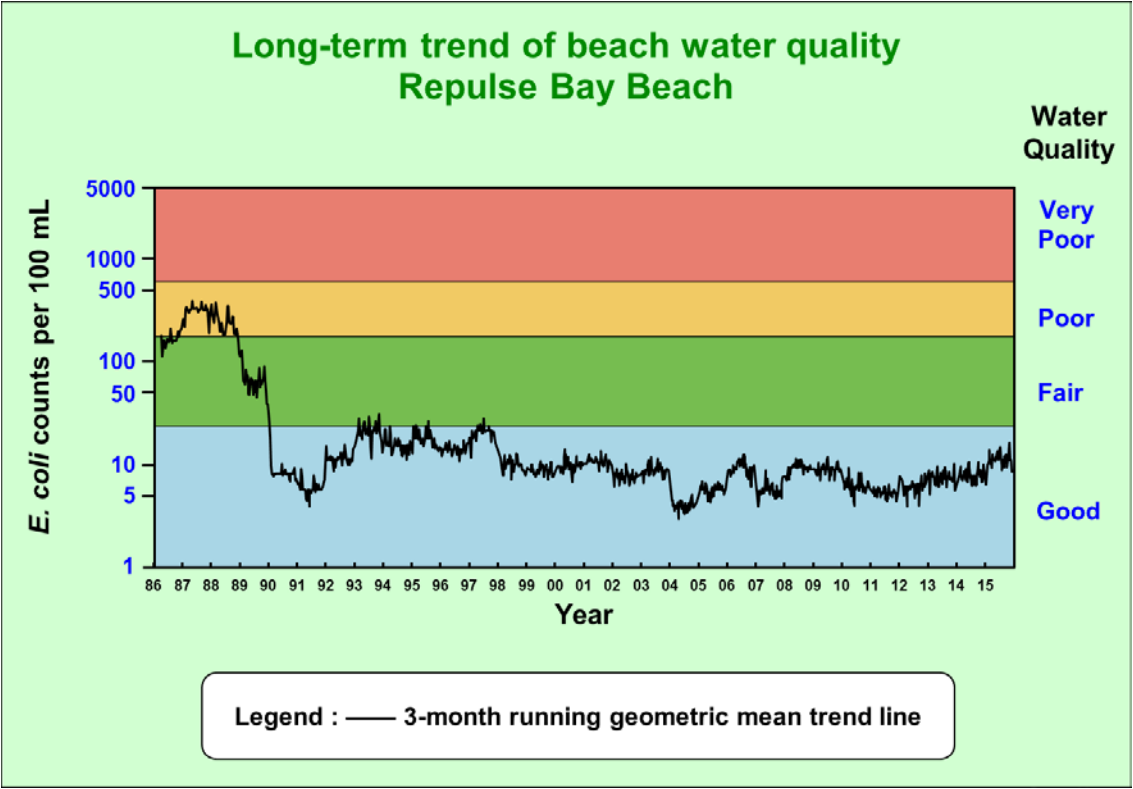
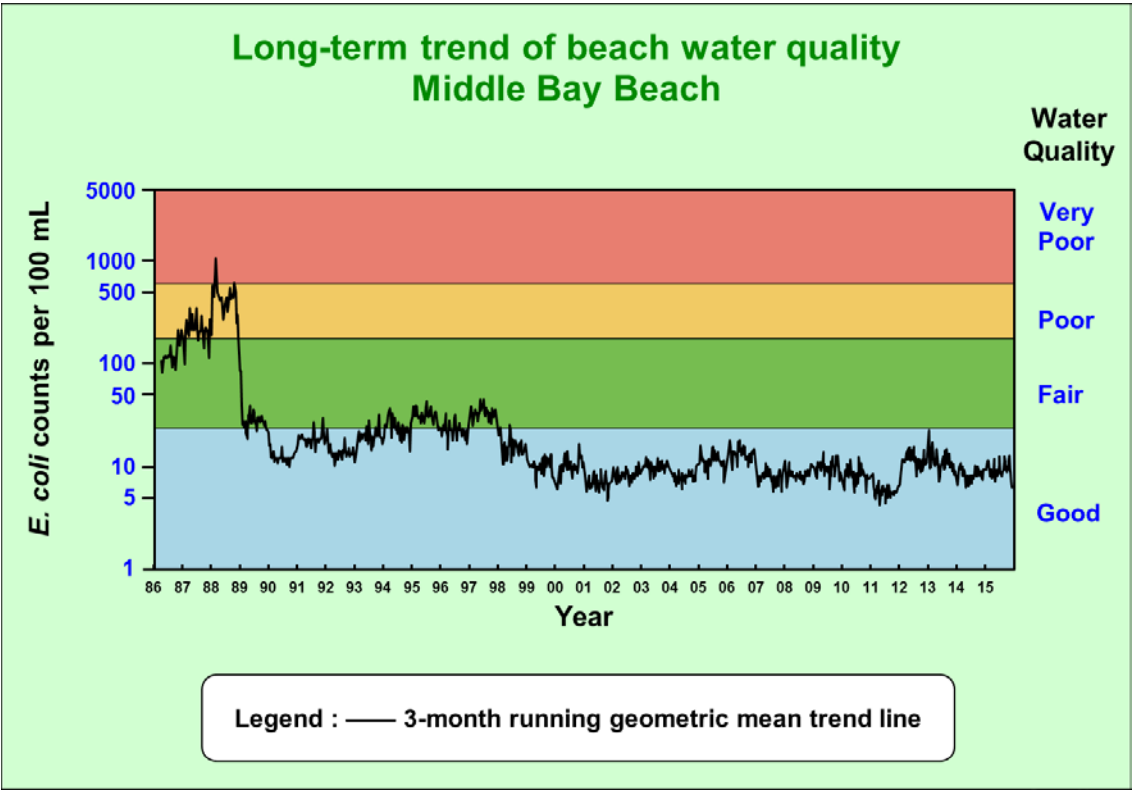
Appendix D - Long-term trend of beach water quality (1986 - 2015) Southern District



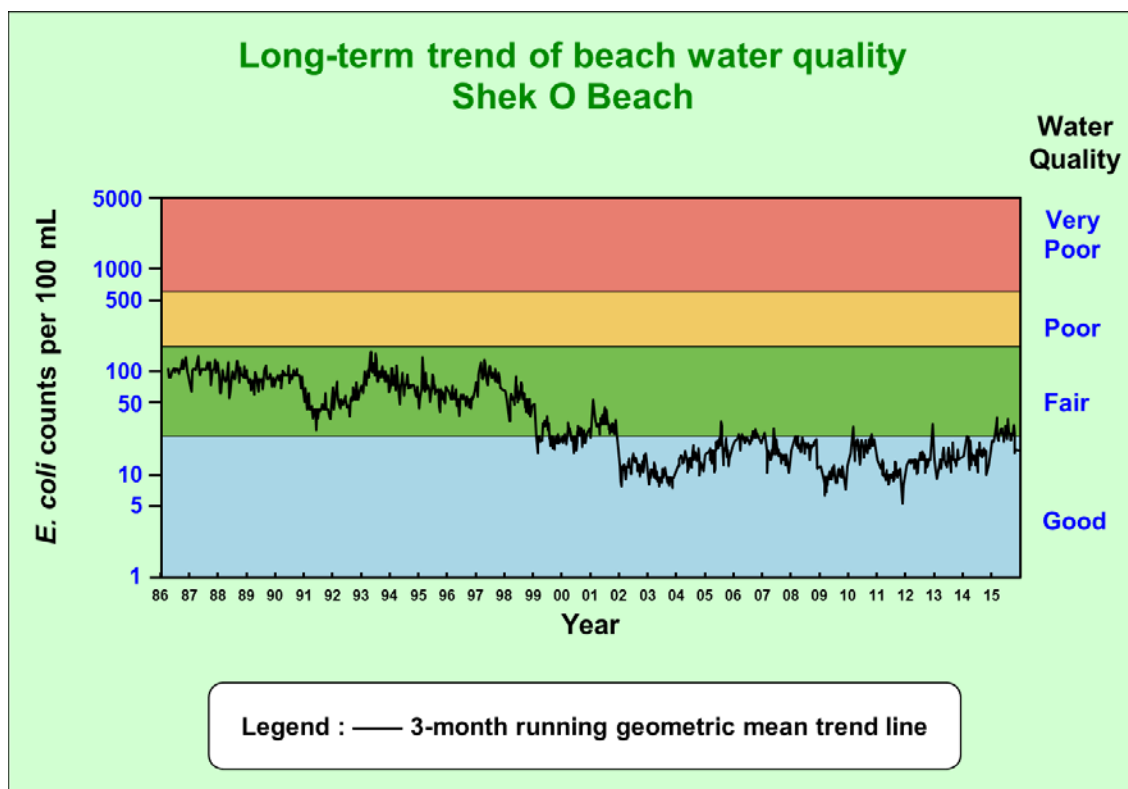
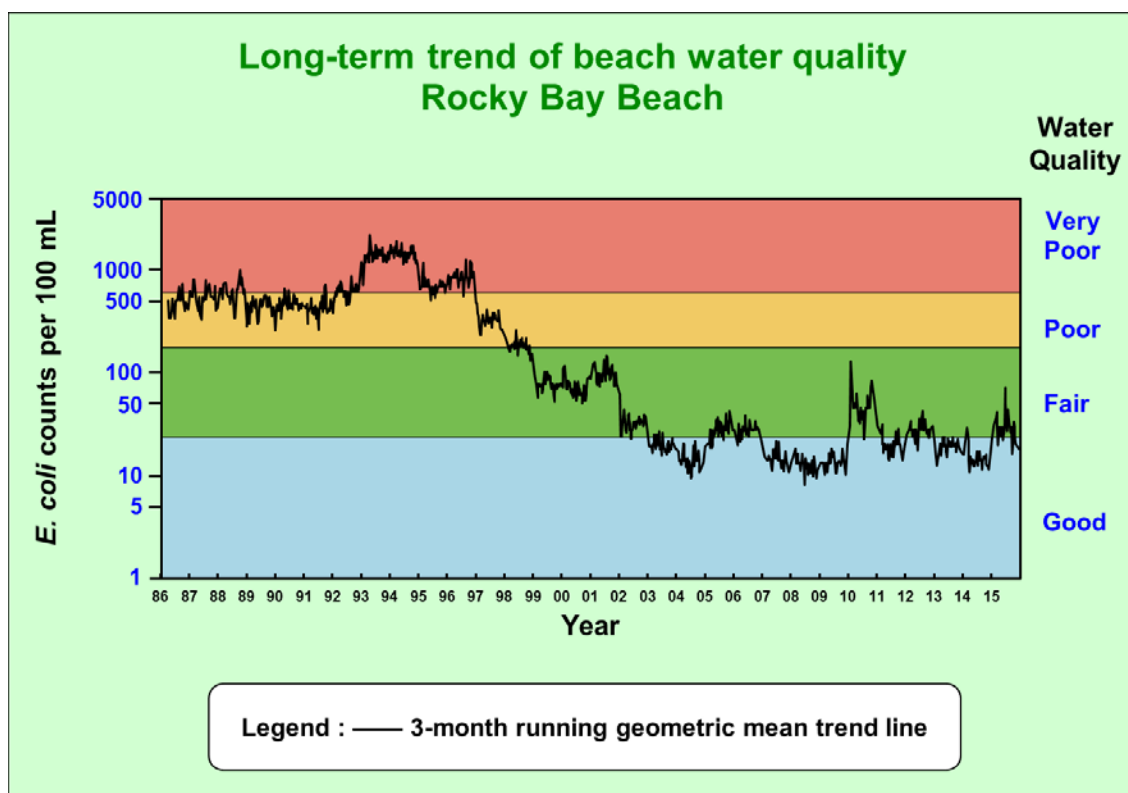
Beach Water Quality in Hong Kong 2015

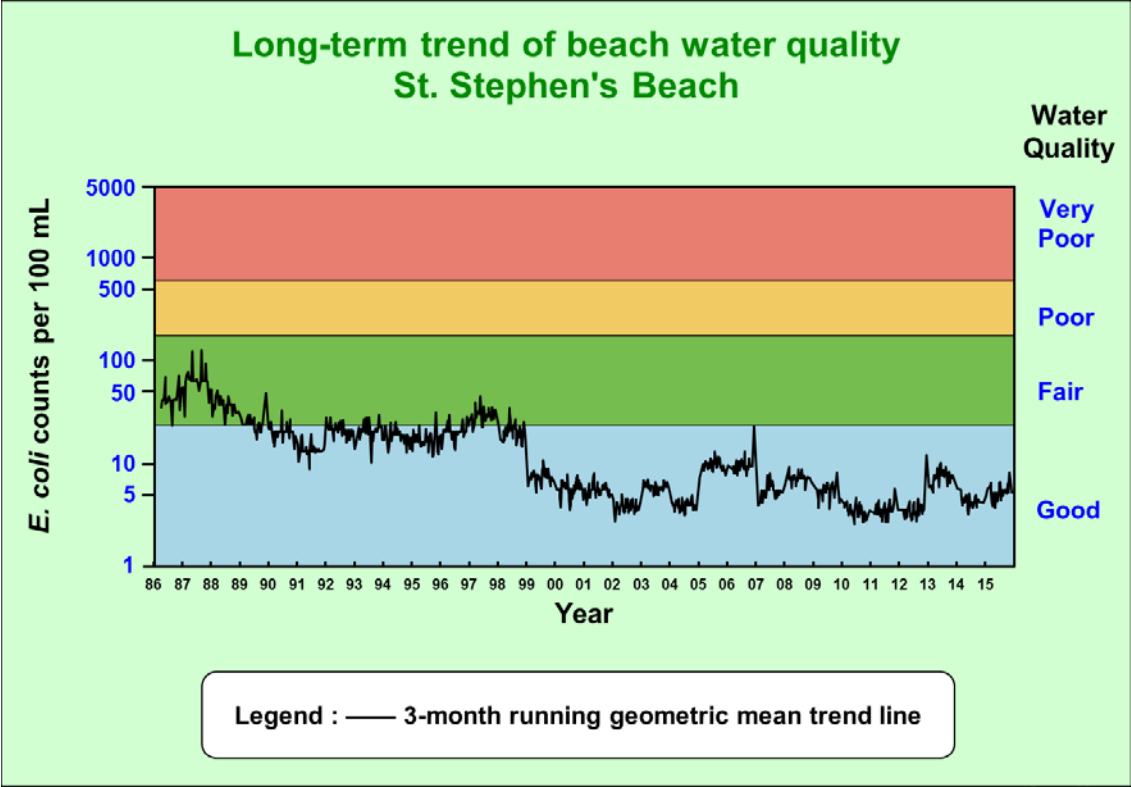
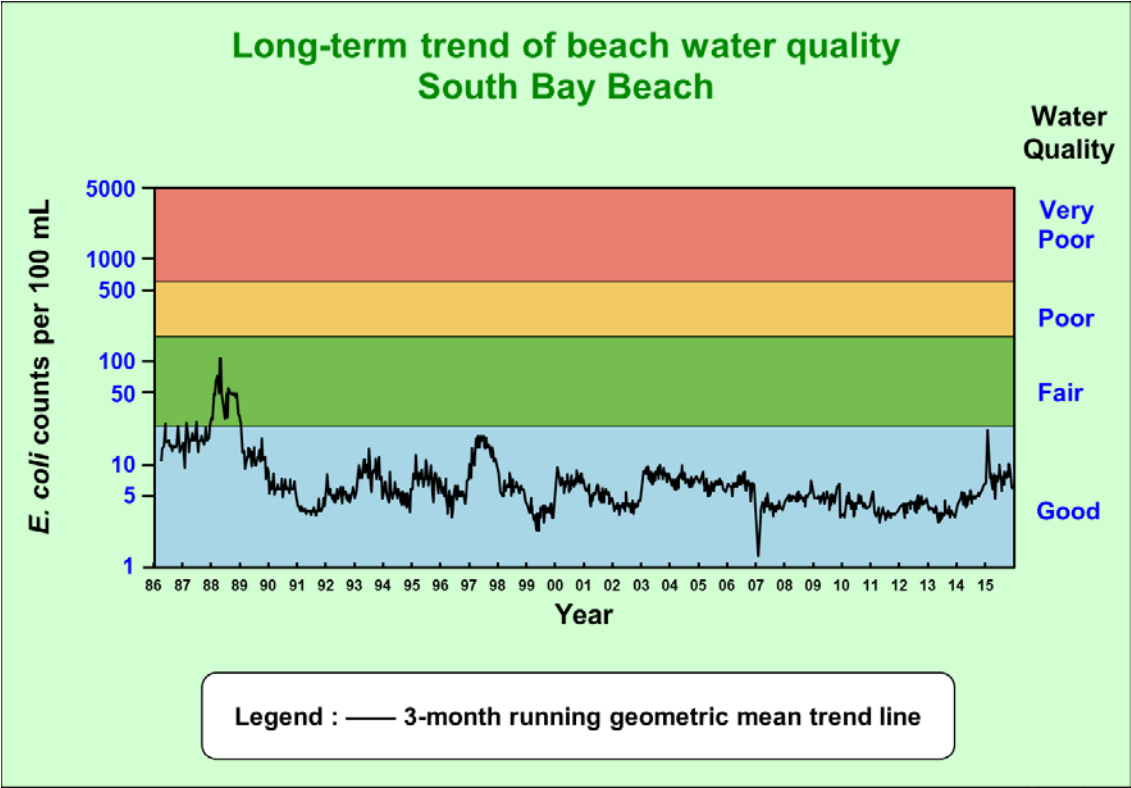
Appendix D

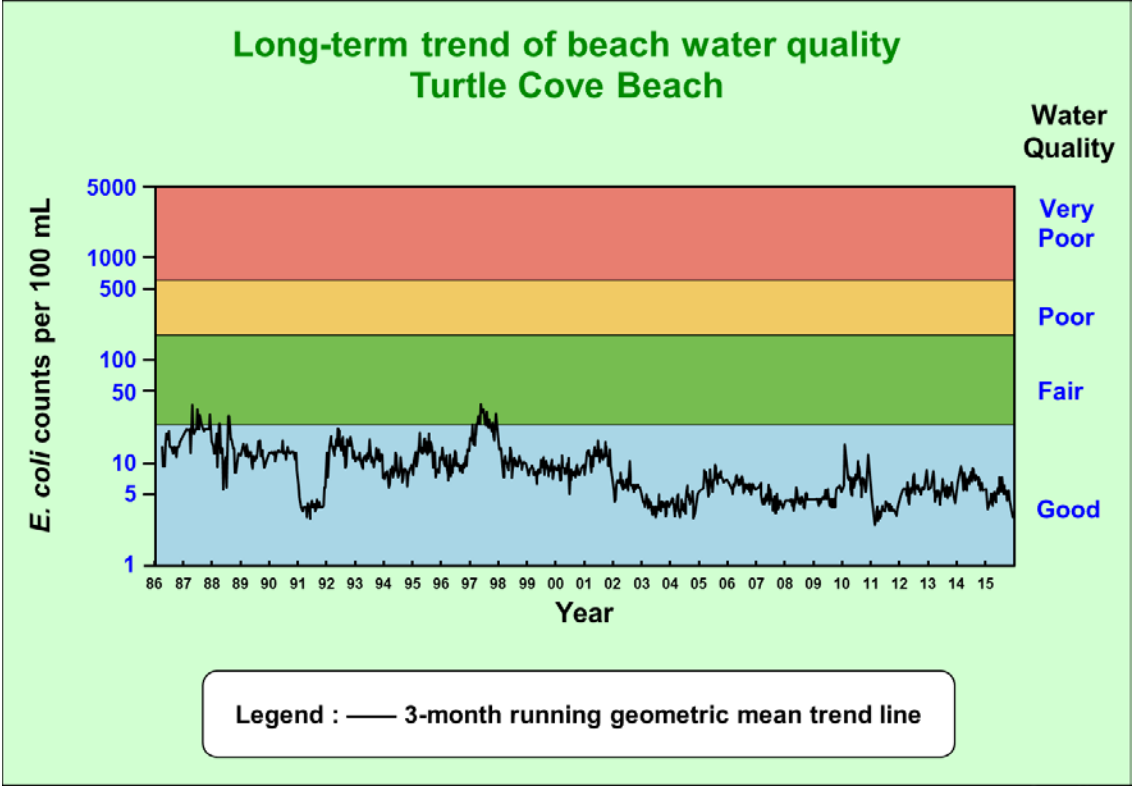
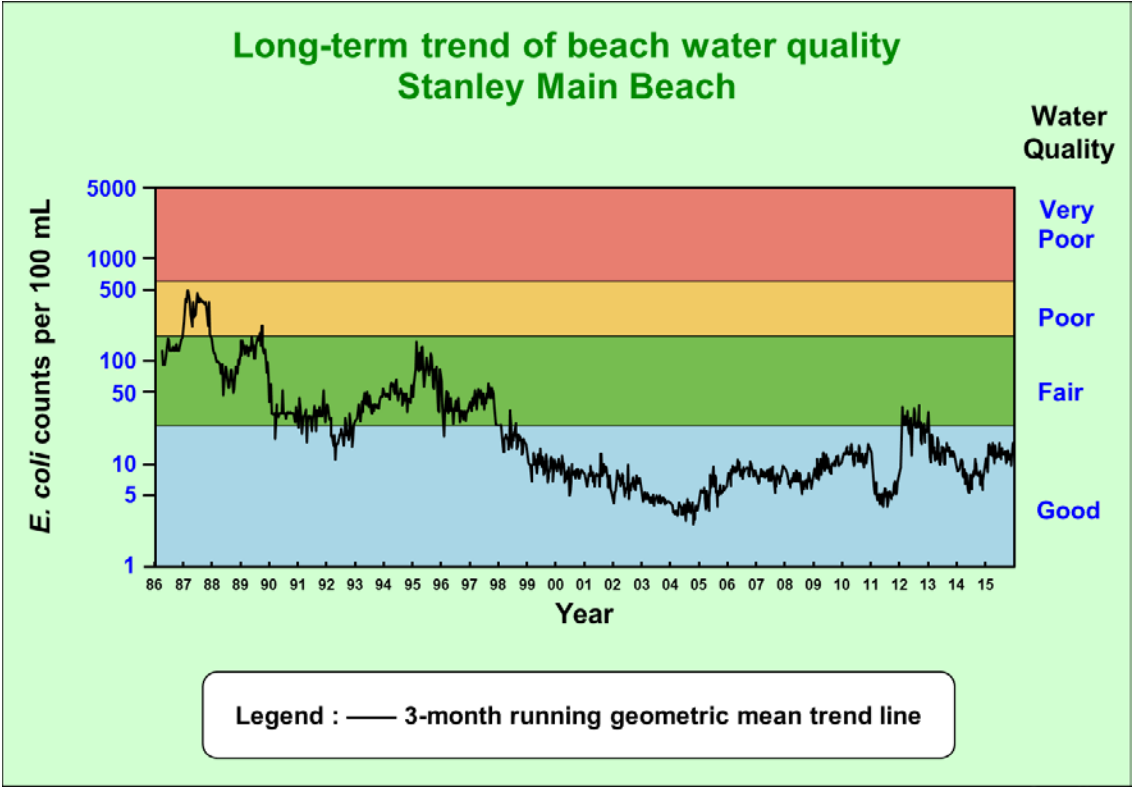




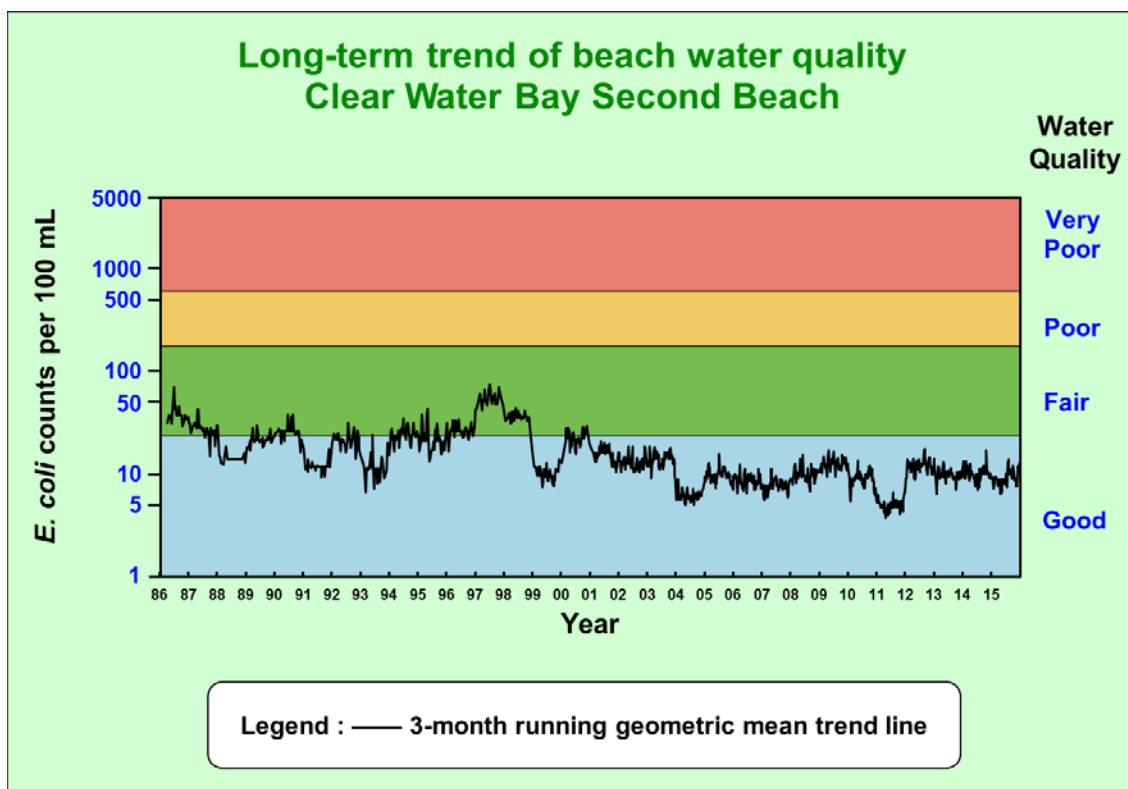
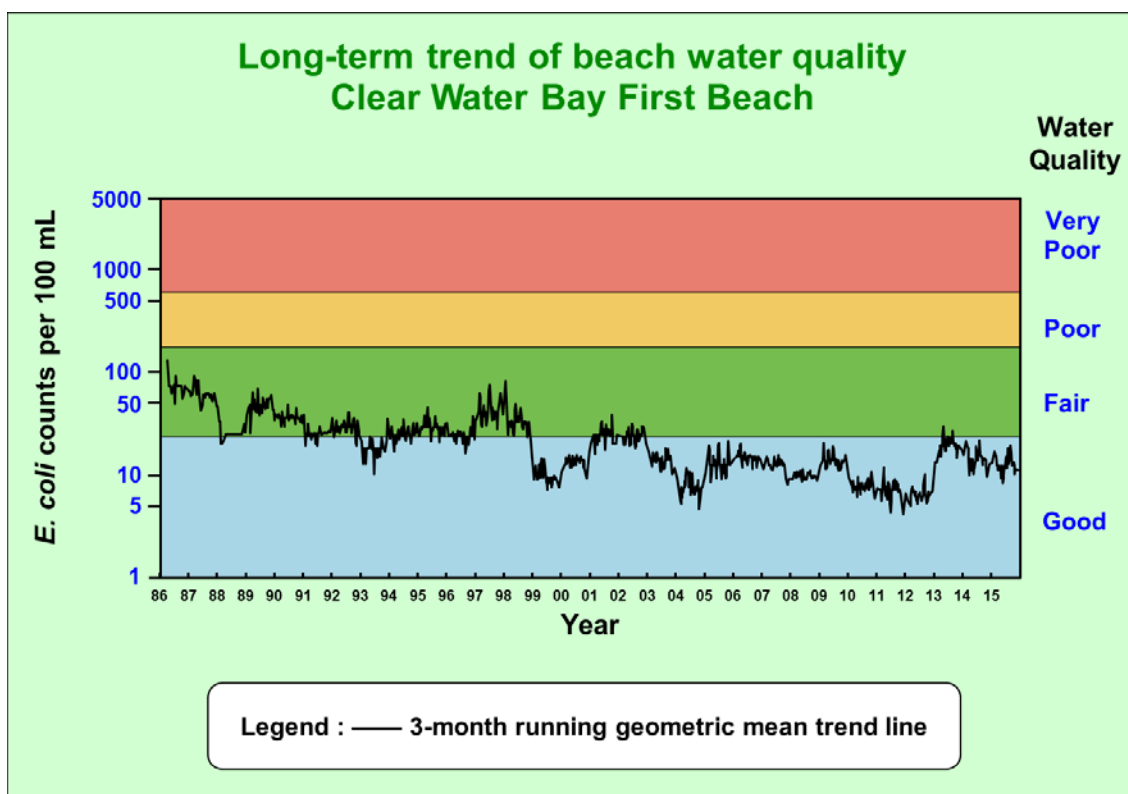
Beach Water Quality in Hong Kong 2015

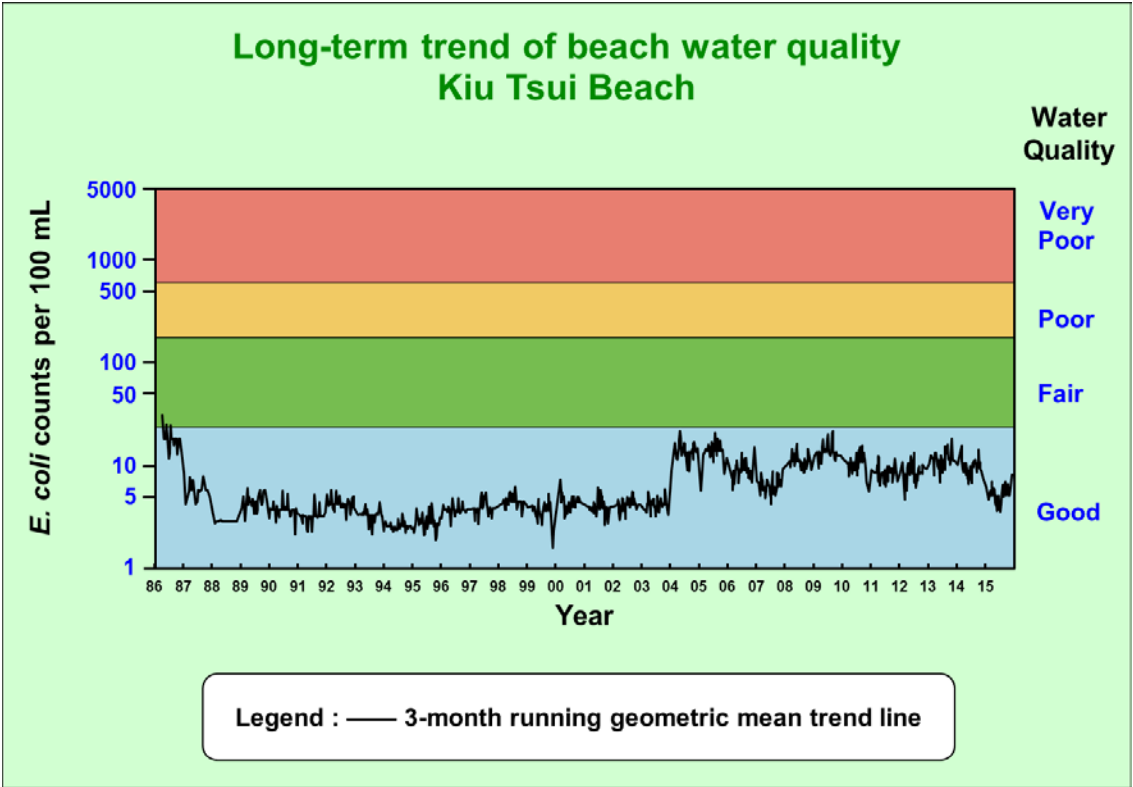
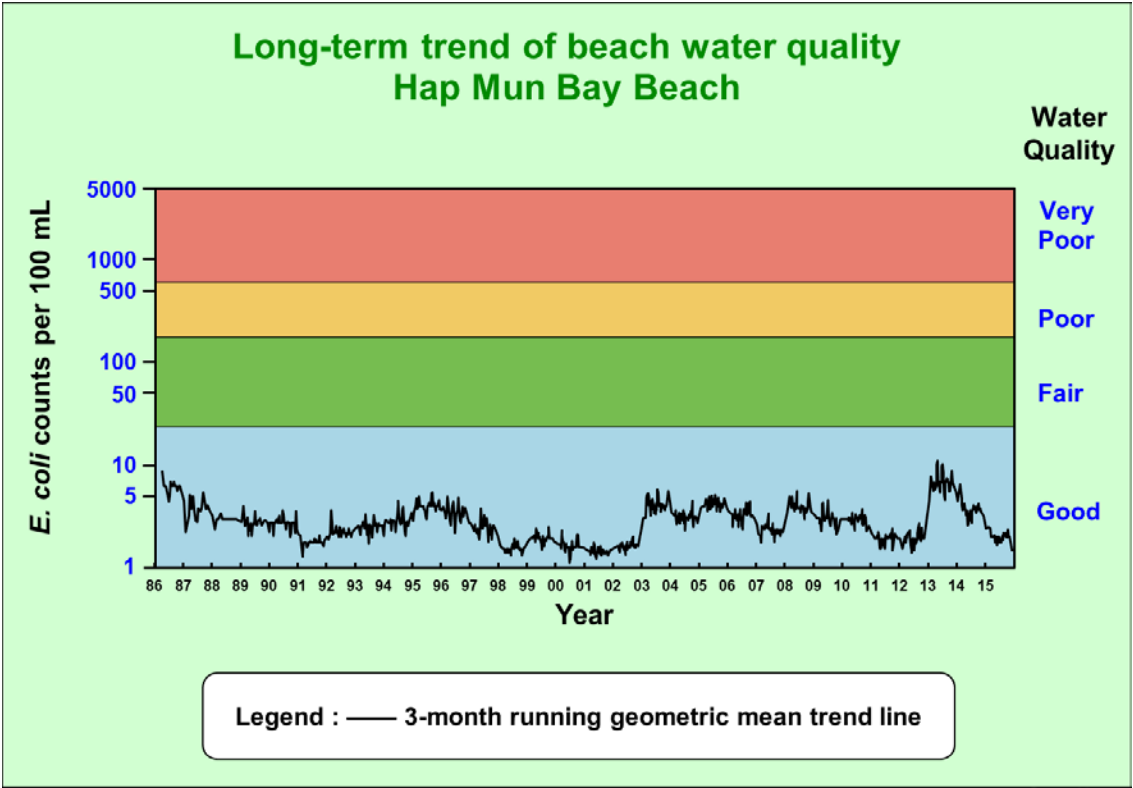


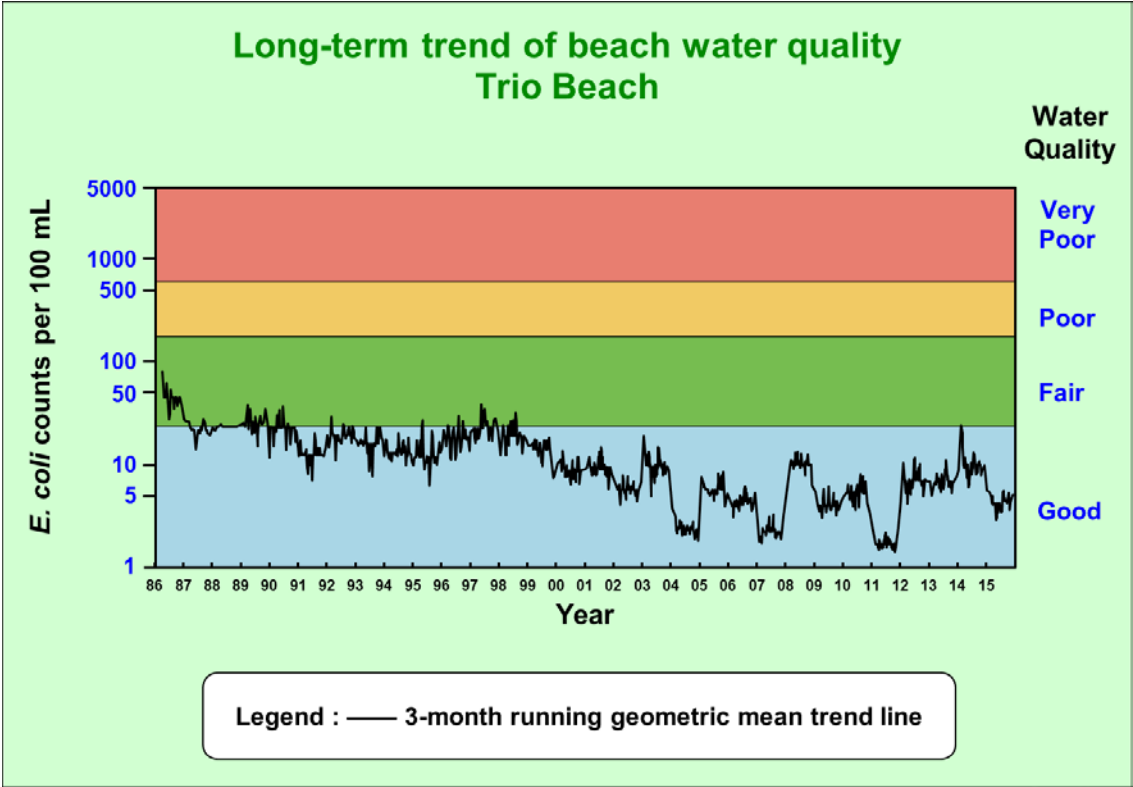
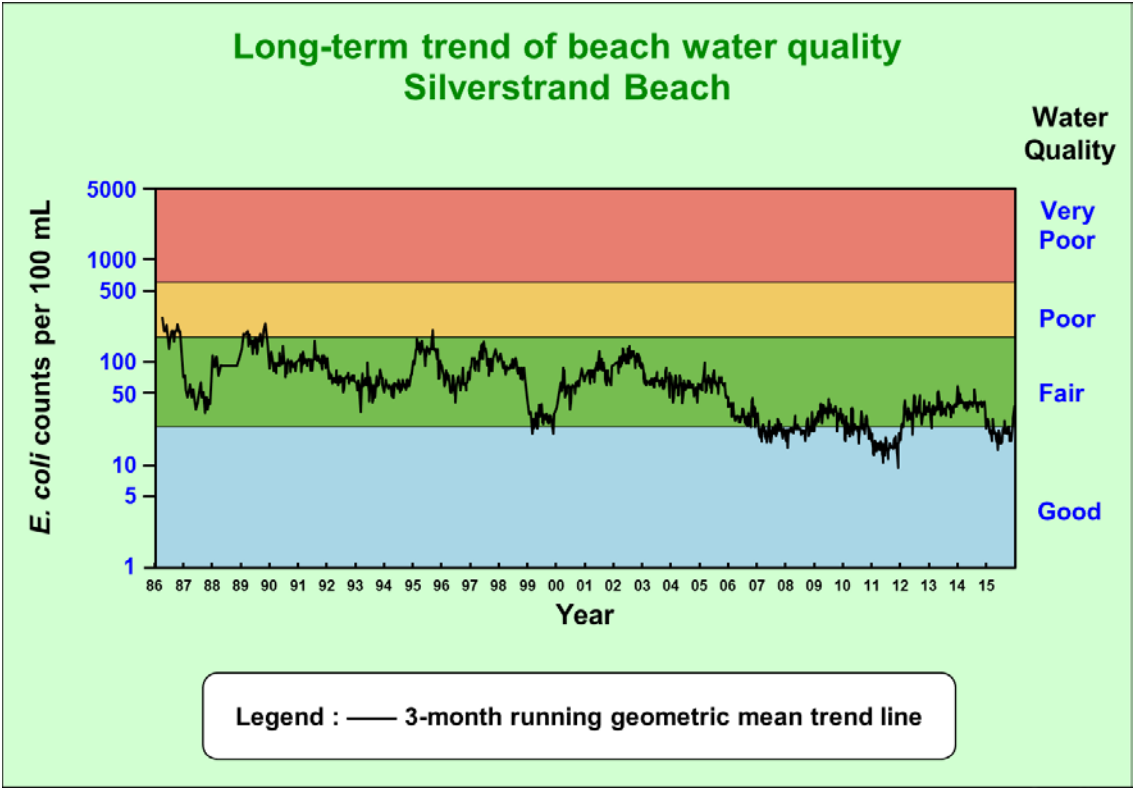




Sai Kung District



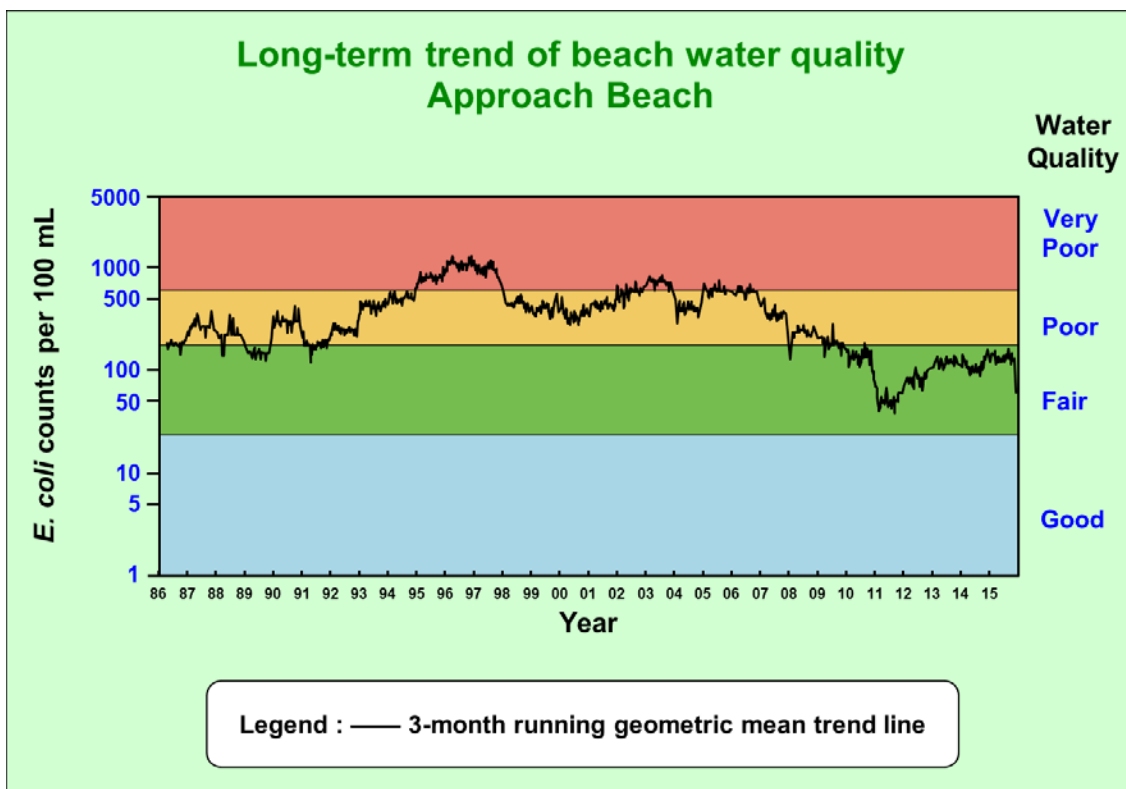
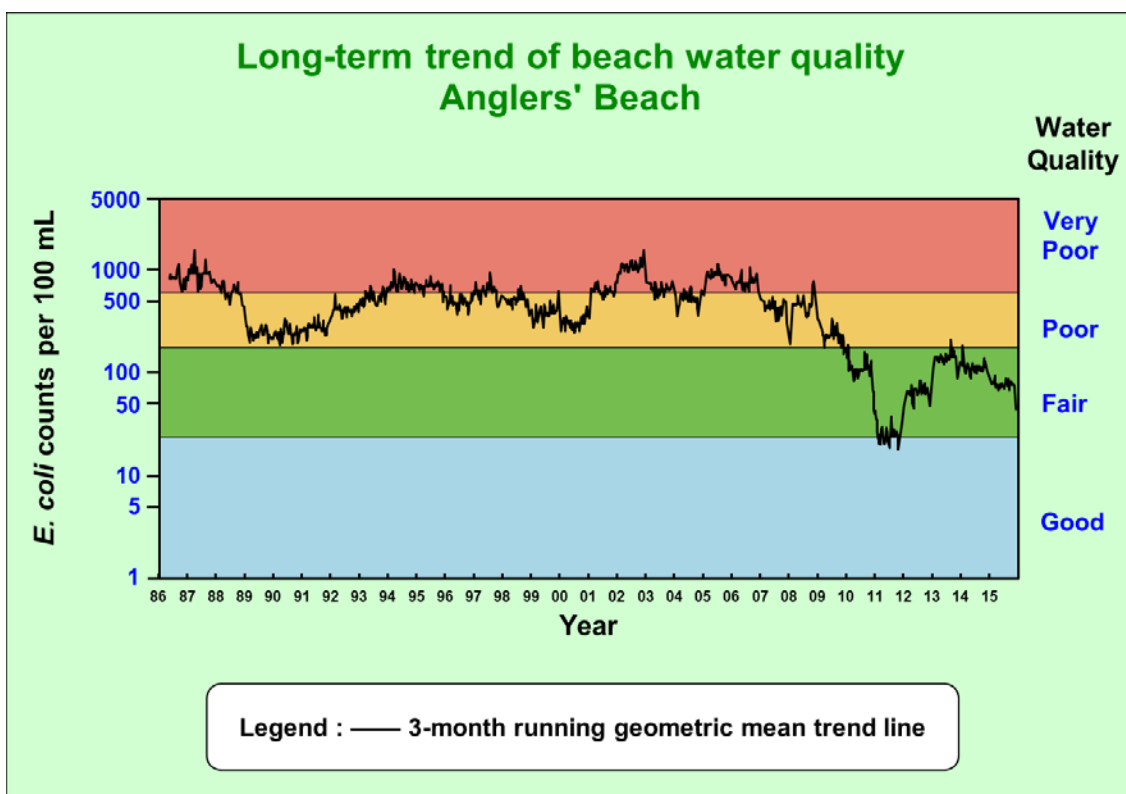


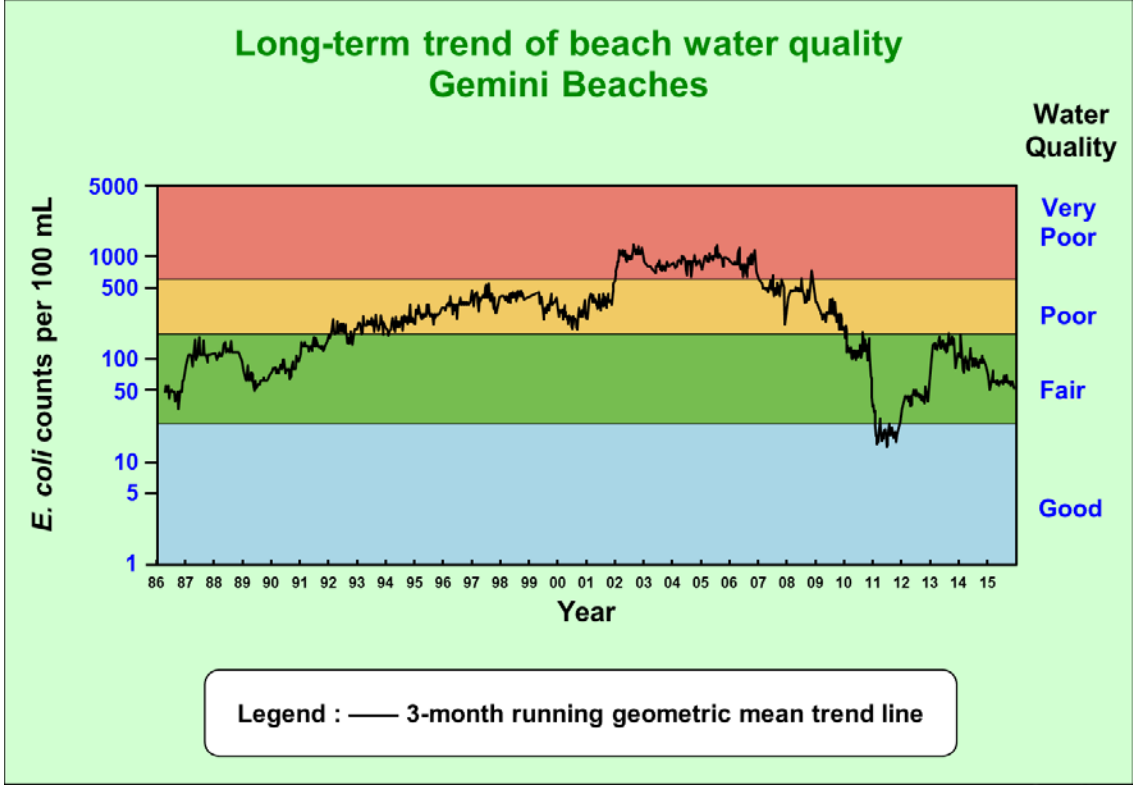
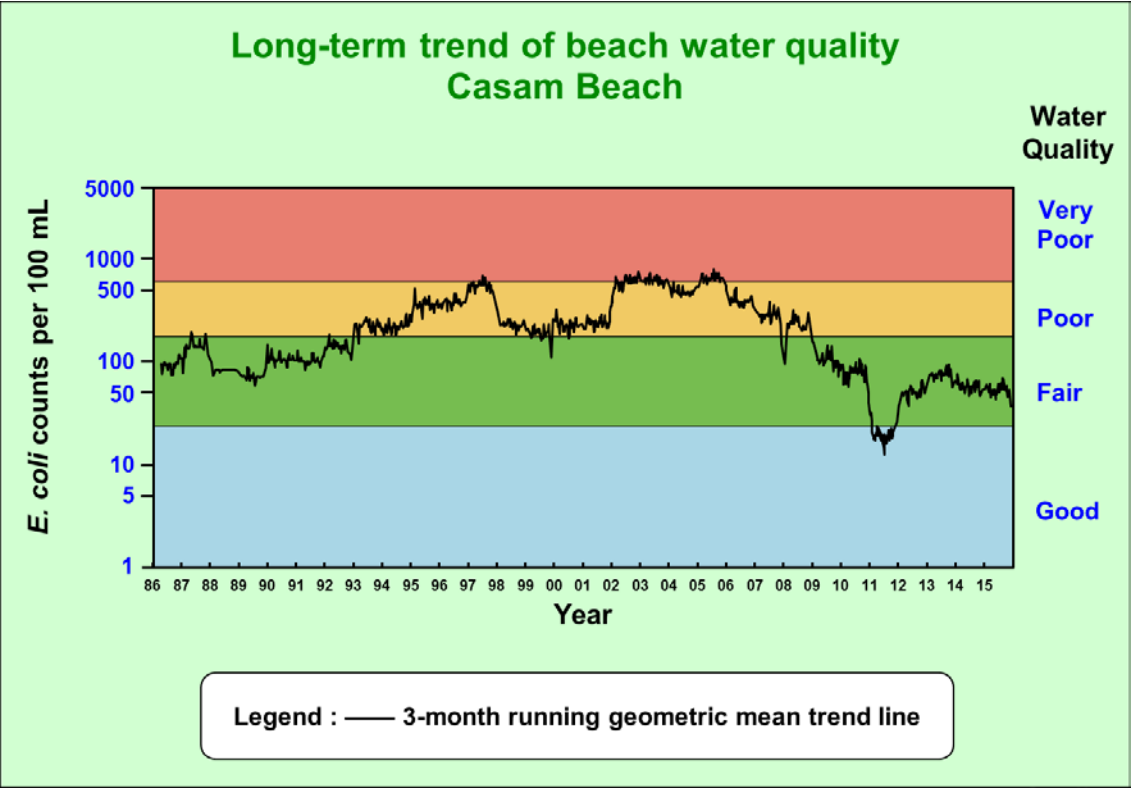


Beach Water Quality in Hong Kong 2015

Tsuen Wan District

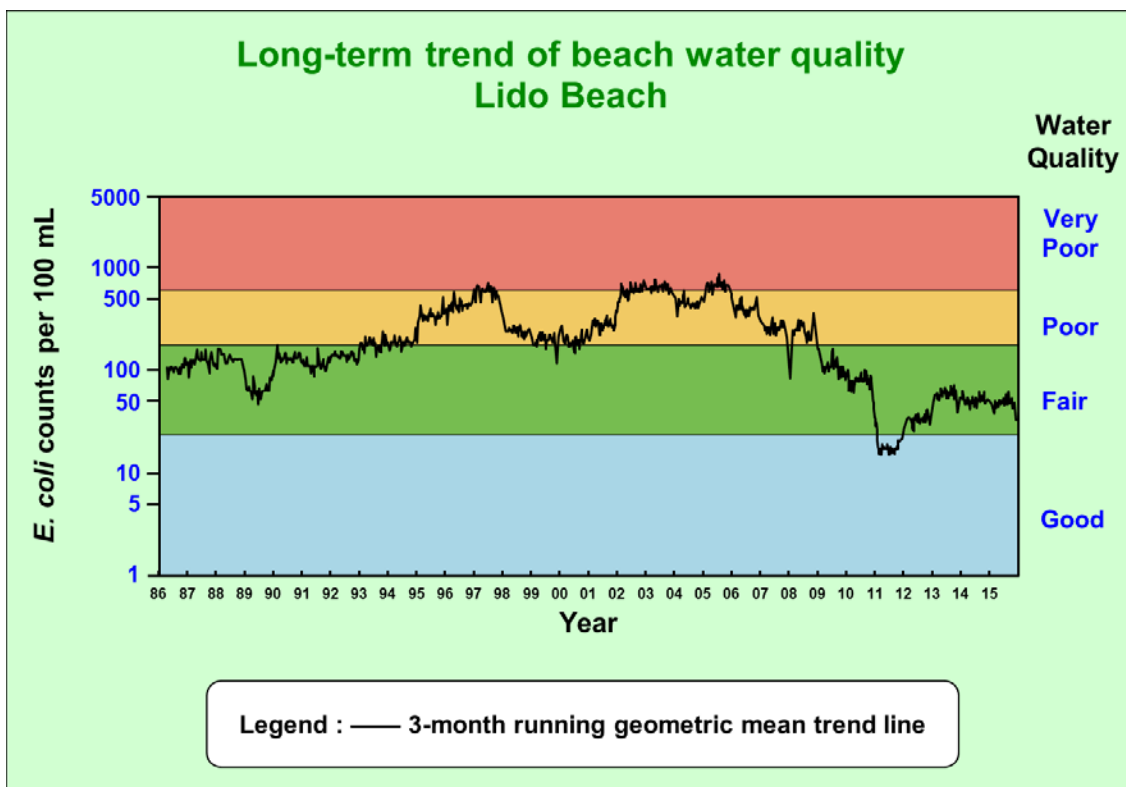
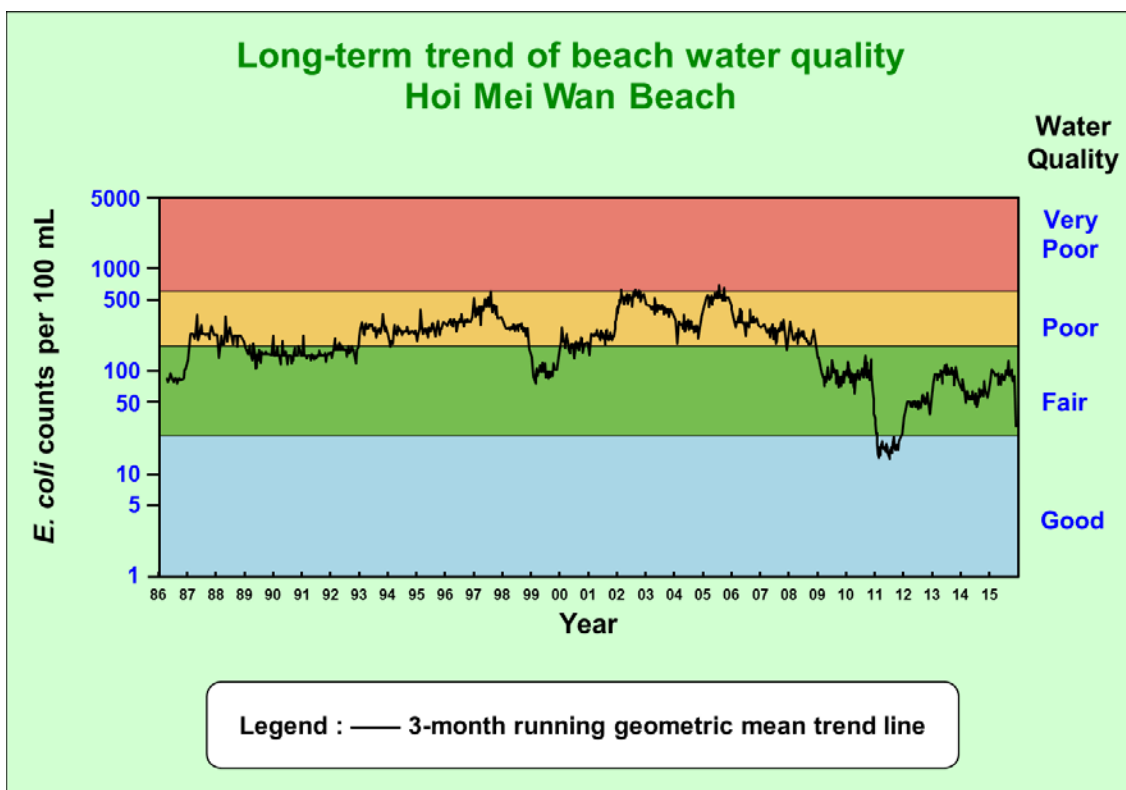
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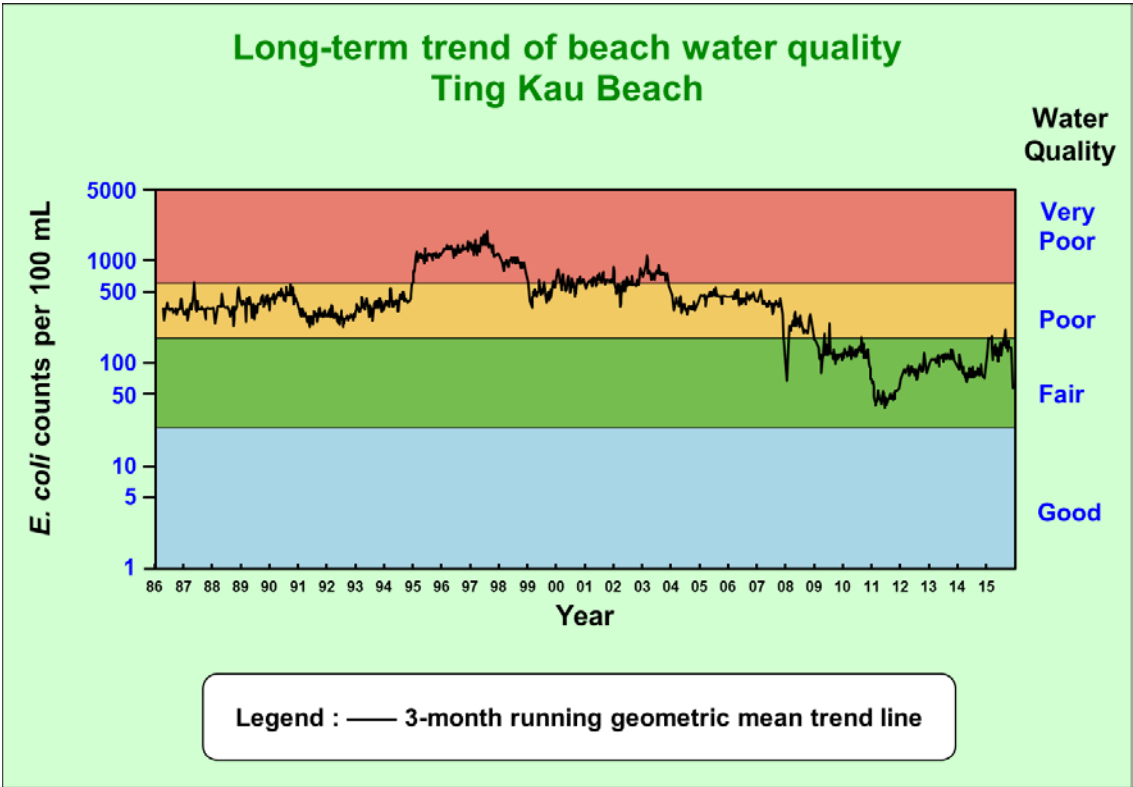
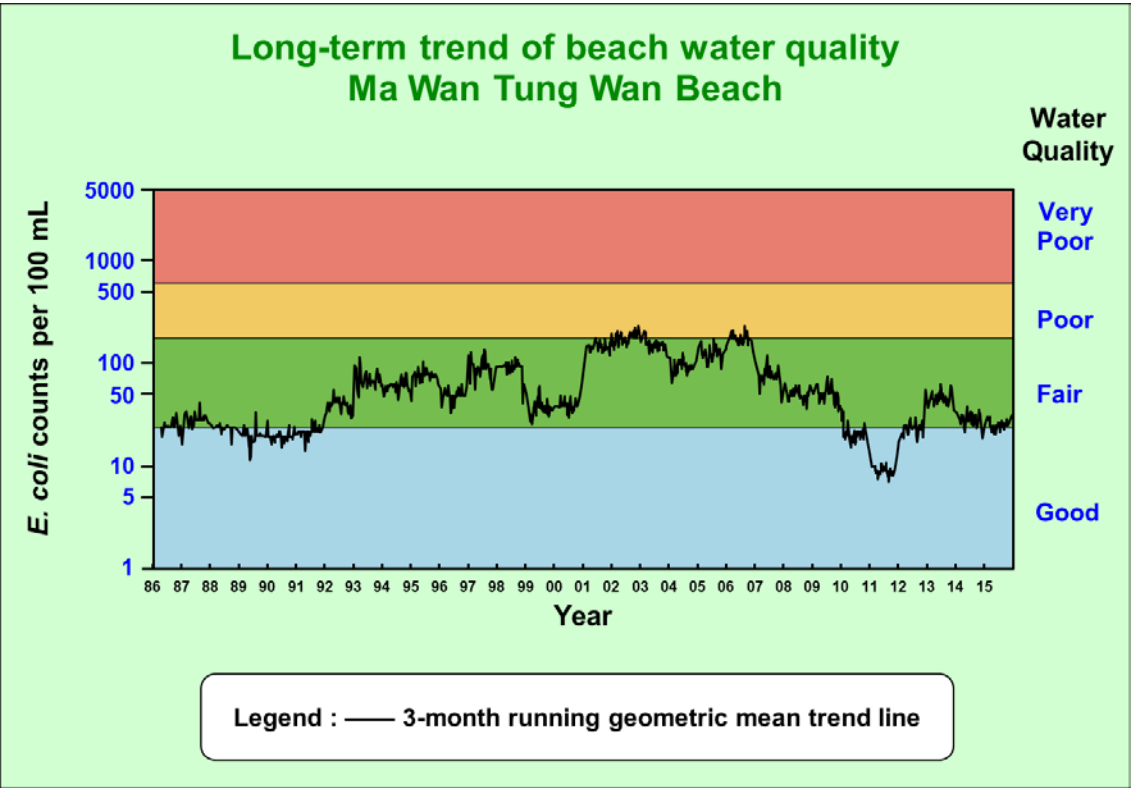




Beach Water Quality in Hong Kong 2015

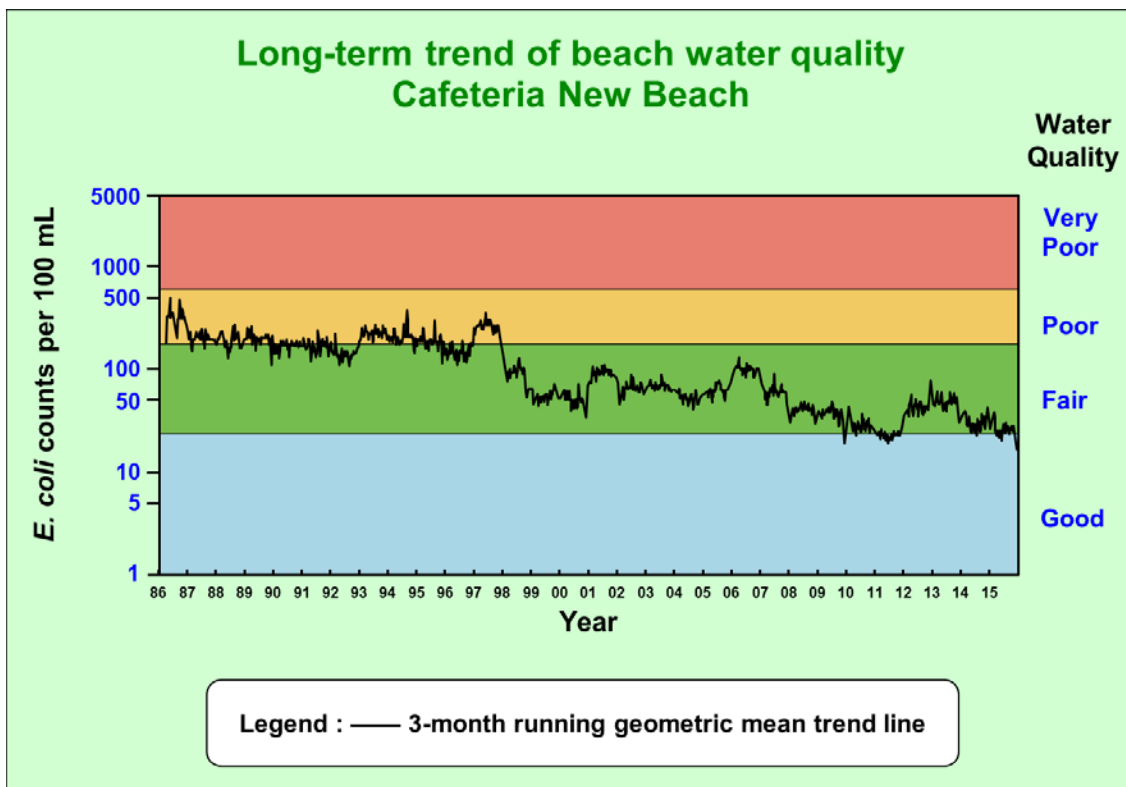
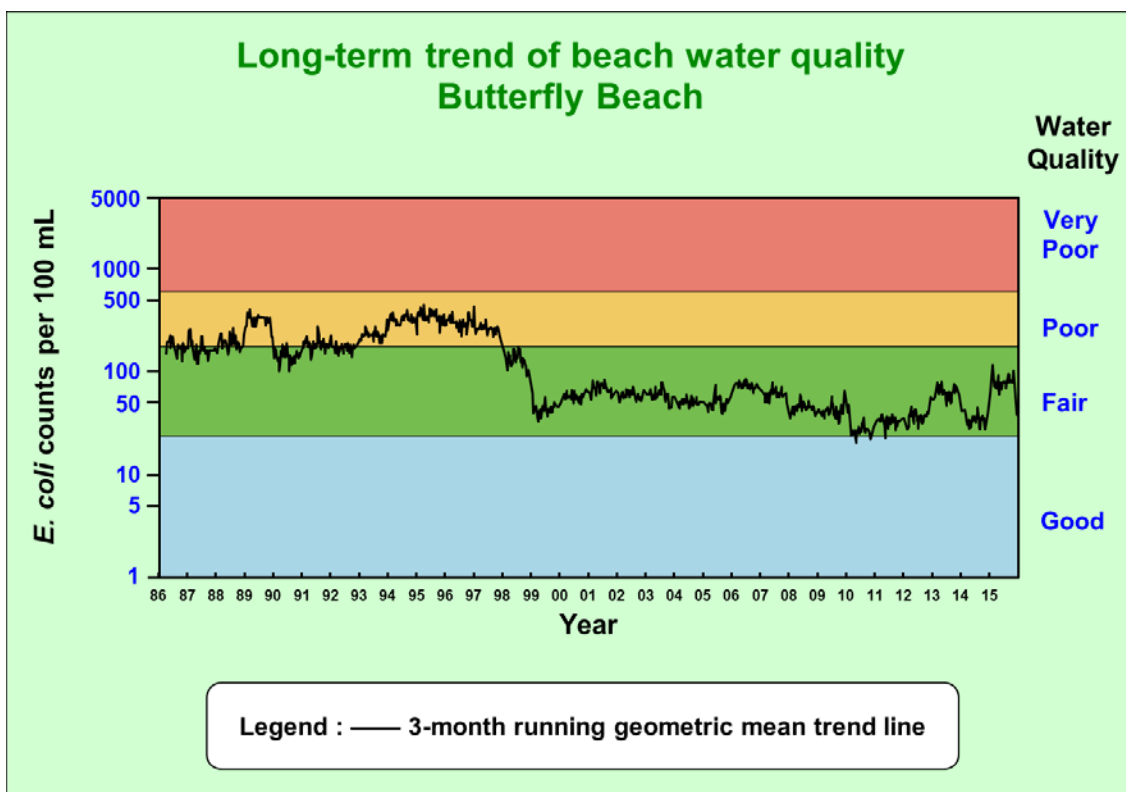
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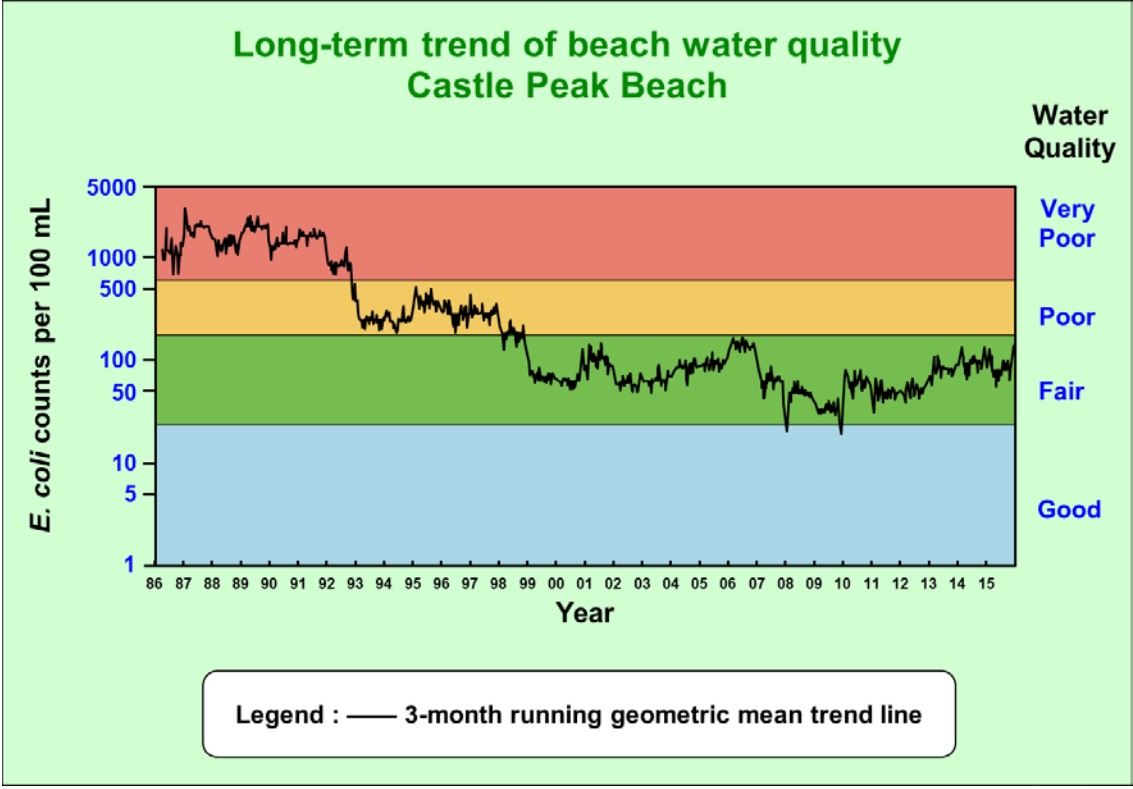
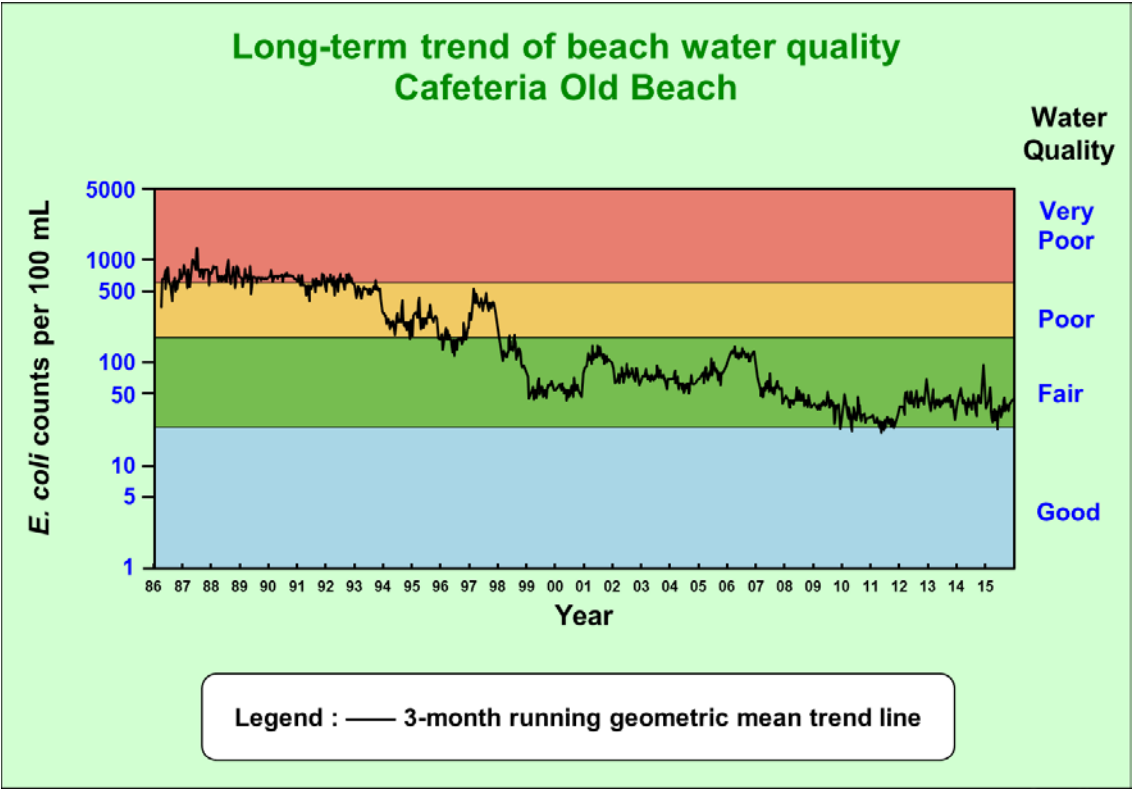


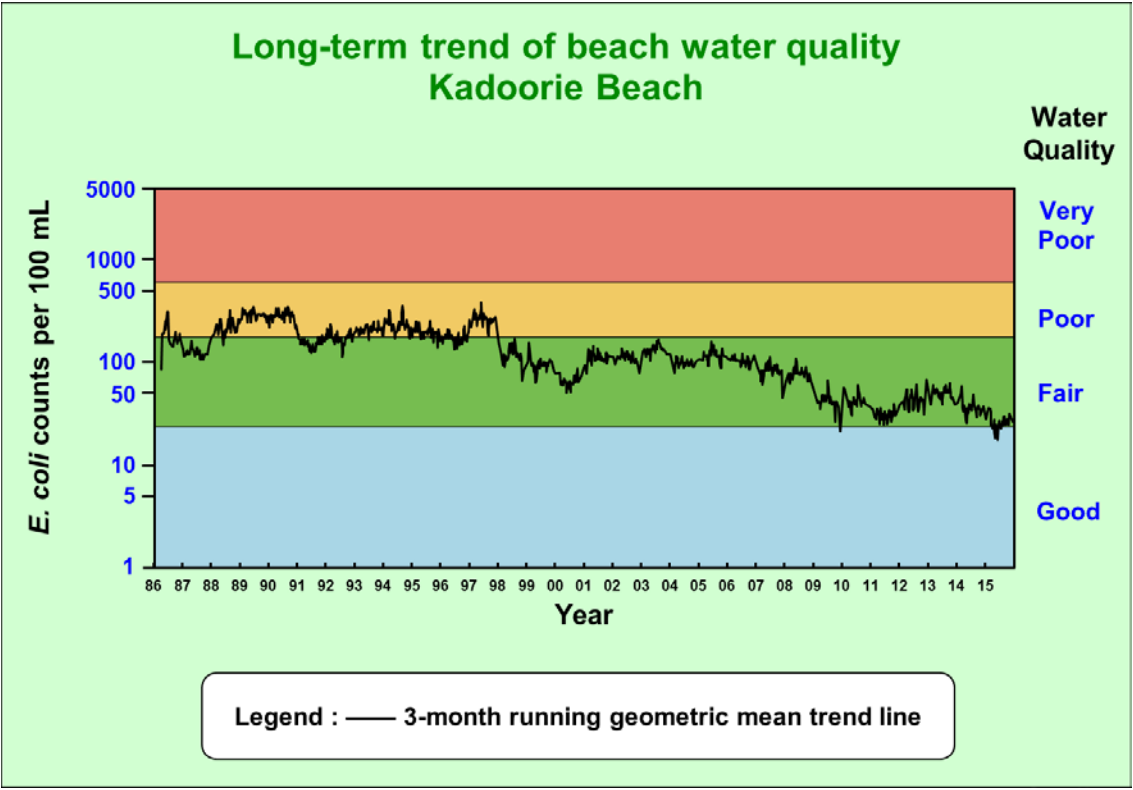
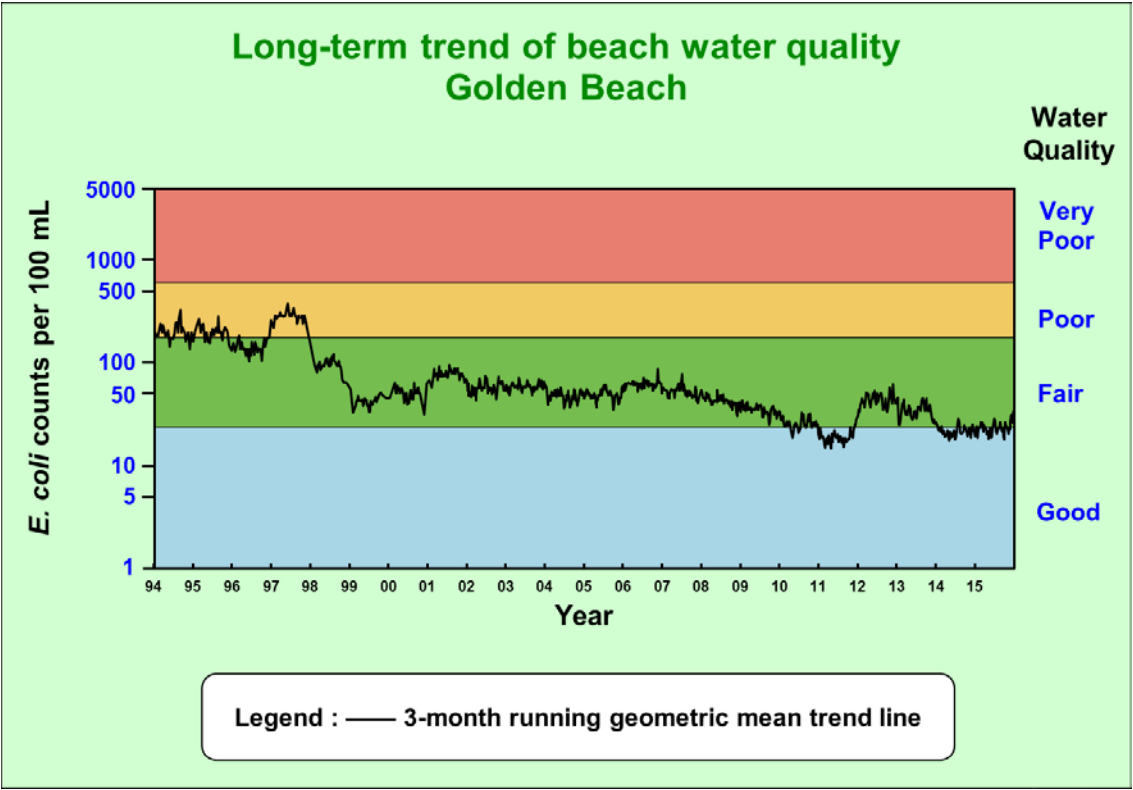


Beach Water Quality in Hong Kong 2015

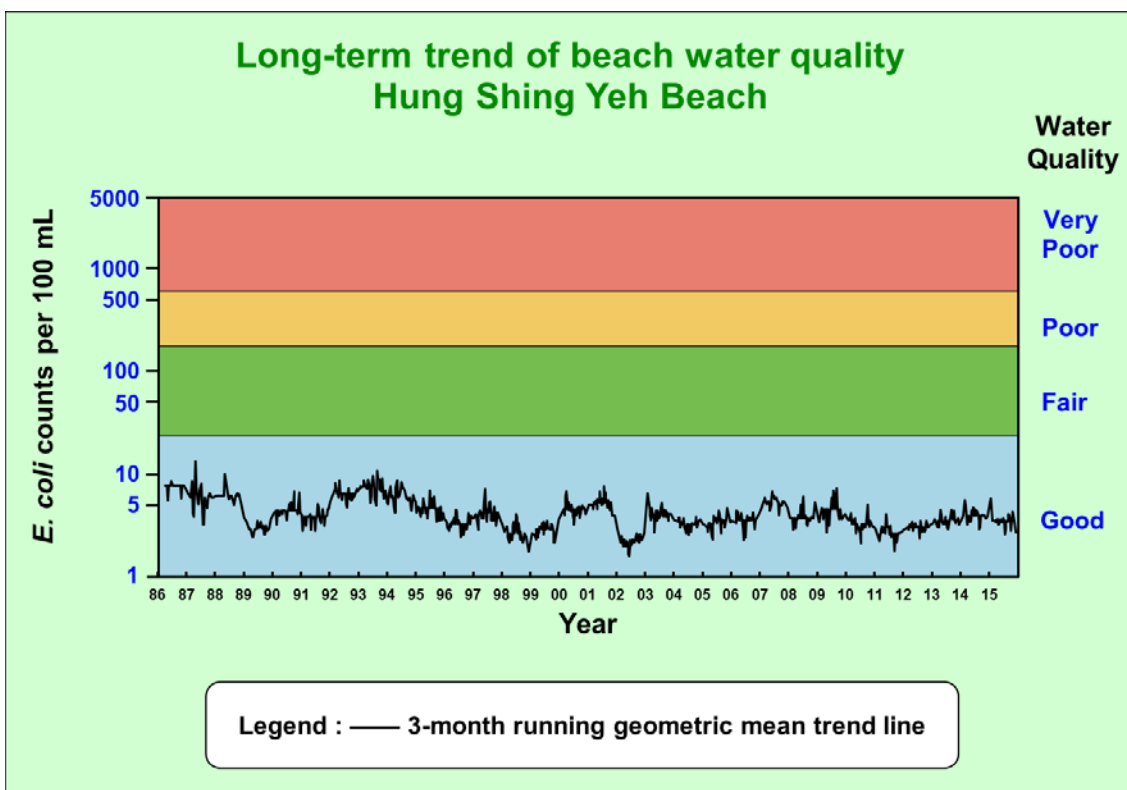
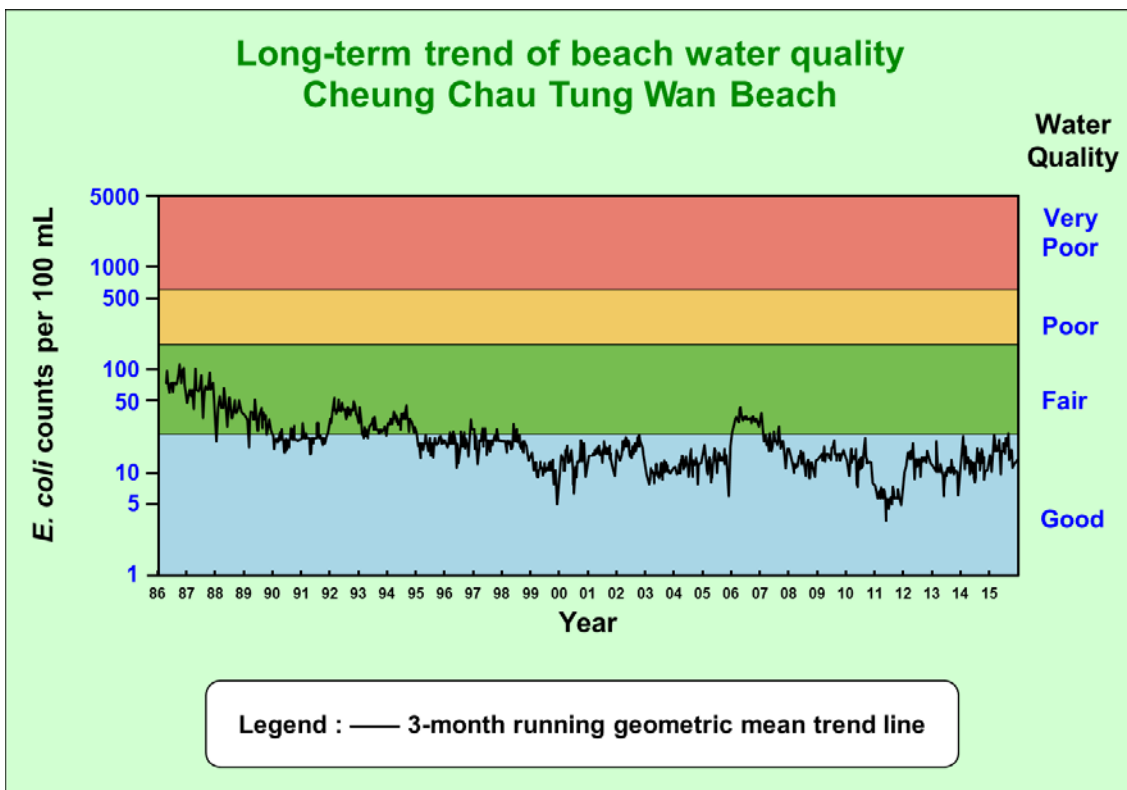
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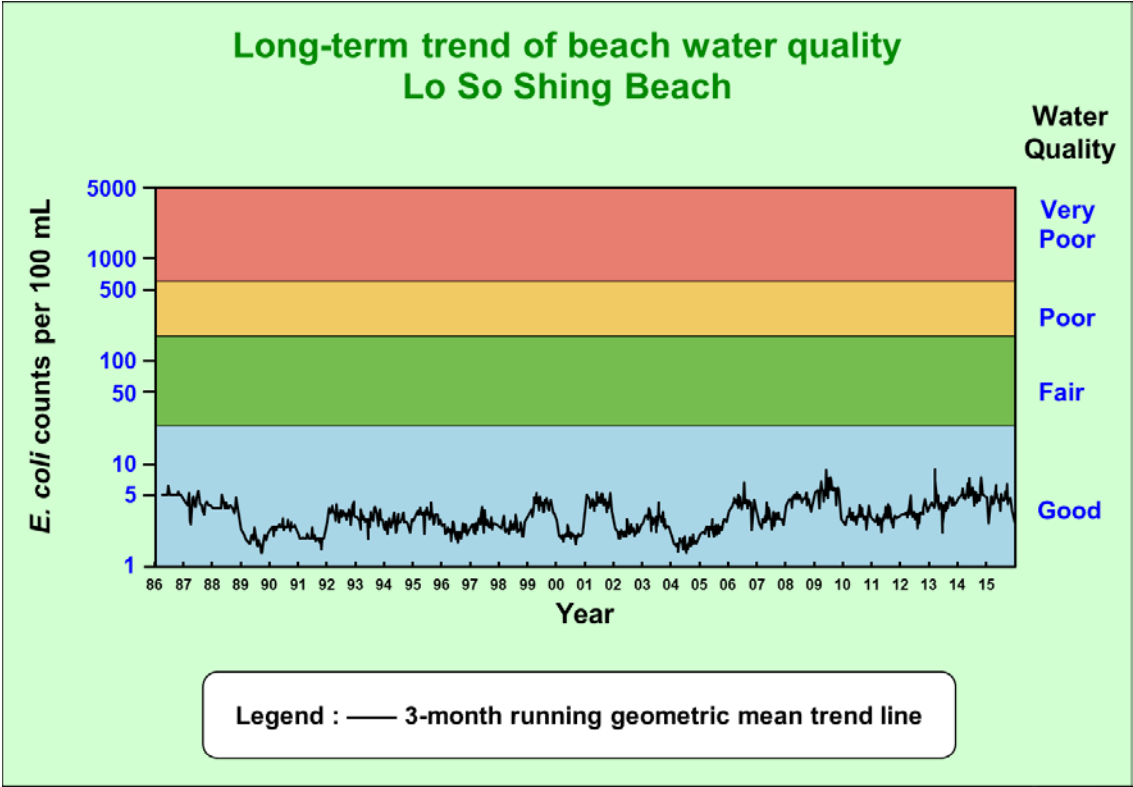
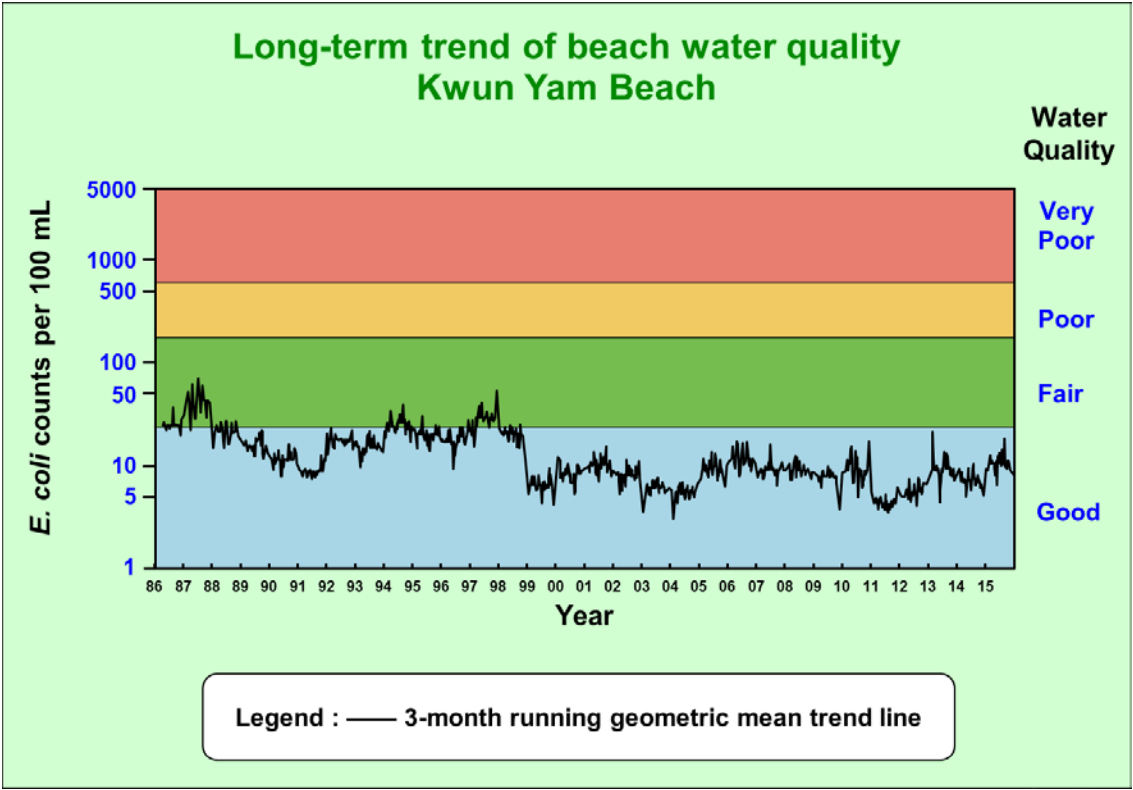


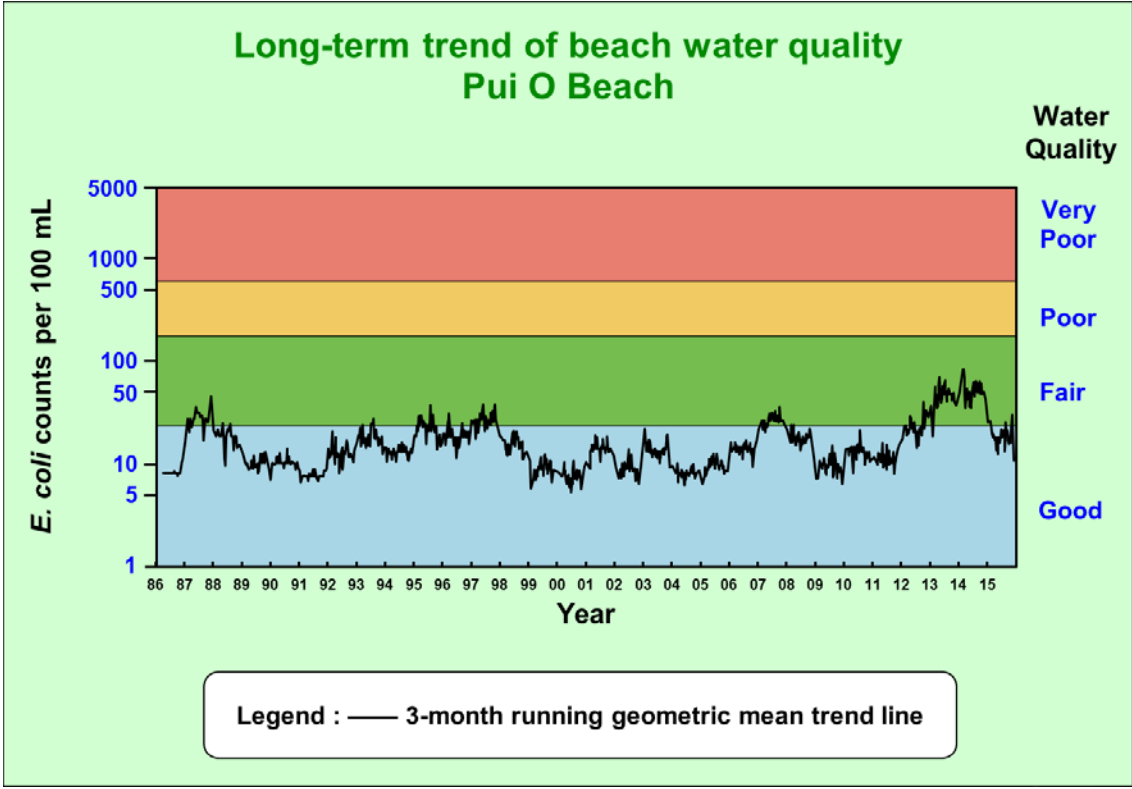
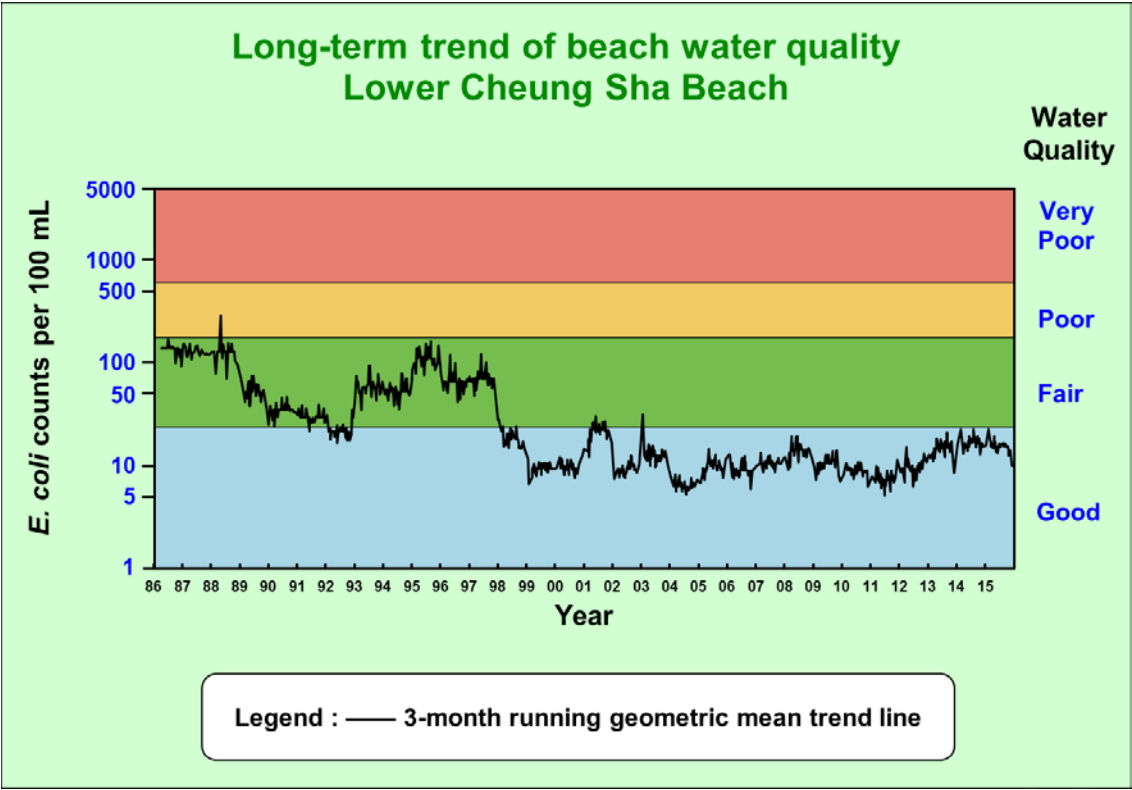


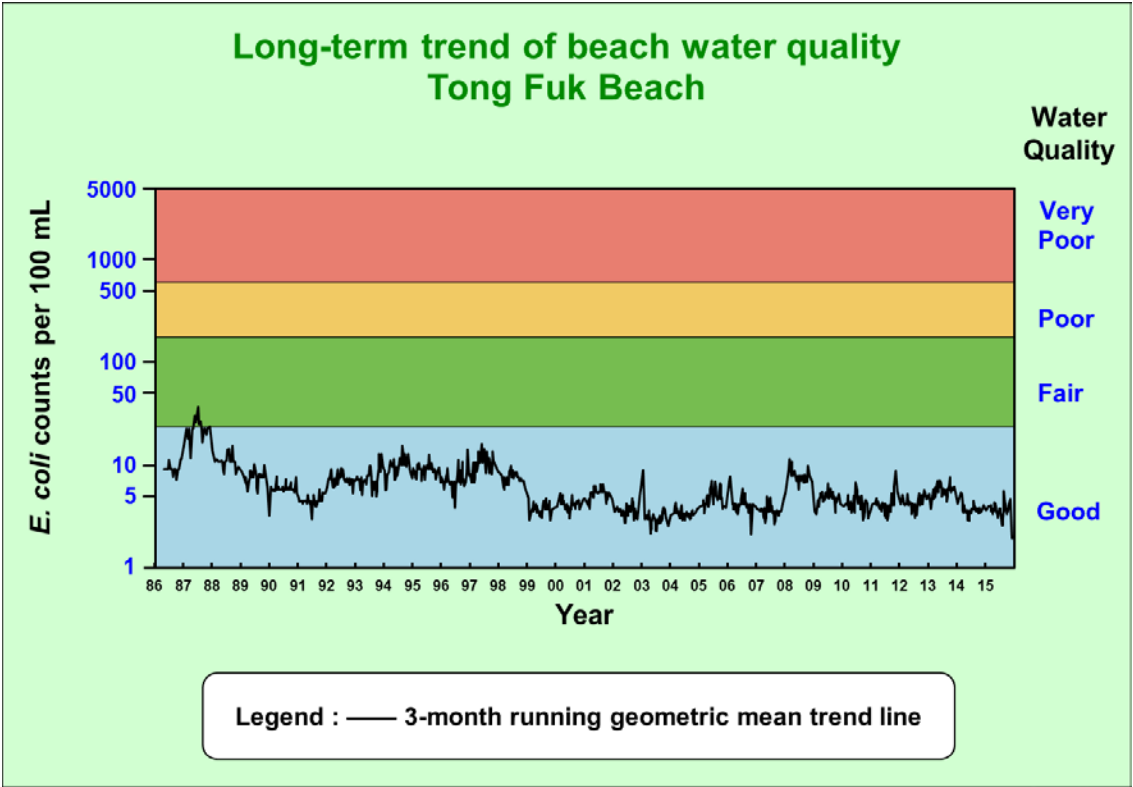
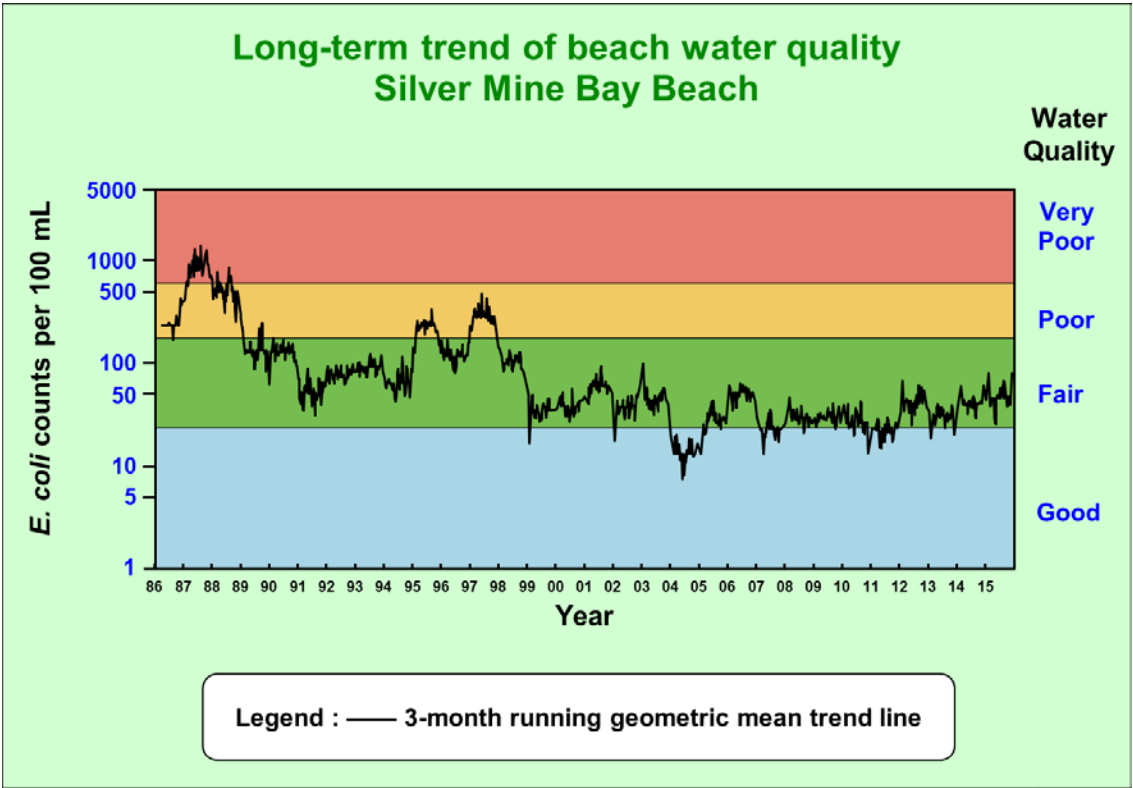


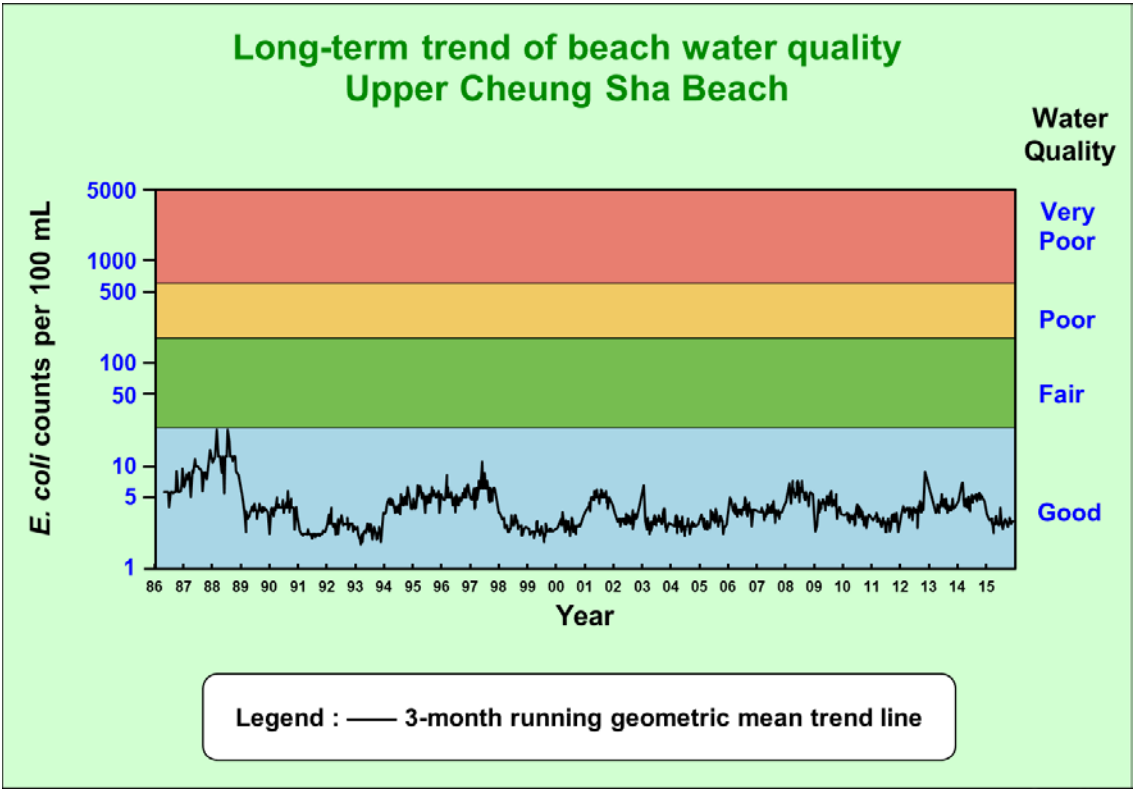
Outlying Islands











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