

EPD - Beach Water Quality

Beach Water Quality in Hong Kong 2022

Our Mission:

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

[Photo: Beaches under blue sky and white cloud]

Introduction

Hong Kong has plentiful scenic beaches frequently visited by local residents and tourists. To safeguard the health of beachgoers, a pristine and safe swimming environment has to be maintained at these beaches.

The Environmental Protection Department (EPD) has implemented a comprehensive Beach Water Quality Monitoring Programme since its establishment in 1986. This report summarizes the beach monitoring data collected in the bathing season of 2022, and the corresponding bacteriological Water Quality Objective (WQO) compliance rate for bathing waters.

[Photo: Public enjoying sea bathing in a scorching summer day]

The prevailing COVID-19 pandemic in early 2022 had led to temporary beach closure between mid-March and April. As the epidemic situation had stabilised, the EPD immediately resumed the beach water quality

monitoring work once beaches reopened on 5 May 2022. During each field visit, the EPD staff would inspect the beach conditions, collect water samples for laboratory analysis of faecal bacteria indicator (*Escherichia coli* (*E. coli*)), and conduct in-situ measurement of physicochemical water quality parameters including dissolved oxygen, pH, salinity, temperature and turbidity.

[Photo: In-situ measurement and water sampling at Tai Po Lung Mei Beach]

[Photo: Analysis of beach water samples at EPD's Environmental Microbiology Laboratory]

The EPD has established a dual rating system for beach water quality, based on the measured *E. coli* level as an indicator for annual ranking and weekly grading of beaches. Each ranking or grading represents a defined risk level of contracting minor swimming-associated gastrointestinal and skin illnesses. The annual ranking reflects the overall water quality of the beach in the entire bathing season, while the weekly grading traces recent water quality changes. Under this system, the beaches are classified into one of the following four categories: “Good”, “Fair”, “Poor” or “Very Poor”. Beaches with annual ranking "Fair" or above meet the bacteriological WQO for bathing waters.

[Photo: Water quality information displayed at a gazetted beach]

Annual Beach Ranking in 2022

All 42 gazetted beaches complied with the bacteriological WQO for bathing beaches in 2022. When compared to 2021, the number of beaches ranked as “Good” has slightly decreased from 30 beaches (or 71%) to 27 (or 64%), and the number of beaches ranked as “Fair” has increased from 12

(or 29 %) to 15 (or 36%). No beaches were in the “Poor” or “Very Poor” ranking.

[Photo: The popular Repulse Bay Beach has maintained a “Good” annual ranking since 1990]

During heavy or consecutive rainstorms, the pollutants deposited on land could possibly be washed off to the sea, causing temporarily fluctuations in the bacteriological water quality of the beaches. While the total rainfall recorded during the 2022 bathing season (1876 mm) was 16% lower than that in 2021 (2220 mm) for the same period, there were frequent heavy rainstorms in the territory since early May, resulting in large fluctuations of *E. coli* at some beaches and hence a slight decrease in the number of “Good” beaches.

The 42 gazetted beaches in Hong Kong are distributed in 6 different districts, including Tuen Mun, Tsuen Wan, Southern (Hong Kong Island South), Islands, Sai Kung and Tai Po.

In 2022, beaches in the Sai Kung District continued to have better water quality when compared to other districts, with all its 6 beaches receiving a “Good” annual ranking. On the other hand, among the 12 beaches in the Southern District, 11 of them maintained as “Good” ranking, and Big Wave Bay Beach remained the same ranking of “Fair” as in last year. In the Islands District, the ranking for Lower Cheung Sha Beach changed from “Good” to “Fair, which was the same as Silver Mine Bay Beach. The remaining 7 beaches in the district continued to attain a “Good” ranking.

Of the 6 beaches in the Tuen Mun District, 4 received a “Fair” ranking, while 2 other beaches, namely Cafeteria New Beach and Golden Beach, maintained a “Good” ranking as in last year.

[Photo: Long coastline along Cafeteria Old Beach, Cafeteria New Beach and Golden Beach]

All the 8 beaches in the Tsuen Wan District maintained a “Fair” ranking as in last year. Since the gradual re-opening of the Tsuen Wan beaches between 2011 and 2014 due to the marked water quality improvement achieved after the completion of sewerage works in the beach hinterland and commissioning of the disinfection facilities of the Harbour Area Treatment Scheme in March 2010, relatively stable water quality suitable for swimming at these beaches has been observed.

Tai Po Lung Mei Beach has been open for public use since June 2021, and is the only gazetted beach in the Tai Po District. This beach continued the “Good” ranking as in last year.

[Photo: Clear water and fine sand at Tai Po Lung Mei Beach]

In 2022, the EPD also monitored the water quality of 2 non-gazetted beaches, including the popular Discovery Bay in Lantau Island and the sandy New Kiu Tsui adjacent to Kiu Tsui Beach in Sai Kung. Both beaches continued to attain a “Good” ranking, on par with last year.

Weekly Beach Grading in 2022

In parallel with the annual ranking, the EPD also issues weekly grading of gazetted beaches during their usual opening periods to keep beachgoers informed of more recent changes in beach water quality. The latest weekly grading information is disseminated through different channels including press releases issued before every weekend, the EPD's beach thematic website, beach water quality hotline, GeoInfo Map of the GovHK website and noticeboards at the beaches. An overview of the weekly grading status of beaches in different districts in 2022 is provided below.

All the 6 beaches in the Sai Kung District continued to perform well in terms of their weekly grading, and on average attained a “Good” grading for 85% of time without a “Poor” or “Very Poor” grading recorded in the bathing season.

In 2022, the 10 beaches in the Southern District generally possessed decent water quality and achieved mostly “Good” or “Fair” weekly grading. Among them, 3 beaches (including South Bay Beach, St. Stephen’s Beach and Stanley Main Beach) maintained a “Good” grading for over 90% of time in the bathing season. Big Wave Bay Beach, Chung Hom Kok Beach and Middle Bay Beach were once rated as “Very Poor” on one or two occasions during and after heavy rainstorms.

[Photo: Big Wave Bay Beach is one of the hotspots for surfing]

[Photo: Golden Beach is one of the most popular beaches for family activities]

Most of the 9 gazetted beaches in the Islands District had pristine water quality. In particular,

Lo So Shing Beach and Upper Cheung Sha Beach maintained a “Good” weekly grading for the entire bathing season. No beaches in the district were graded “Very Poor” in the bathing season.

Between mid-May and early August when frequent heavy rainstorms were recorded, there was fluctuation of the beach water quality in Tuen Mun District and Tsuen Wan District. After

mid-August when the weather got better with less rainfall, relatively stable water quality with continuous improvement at these beaches could be observed, suggesting that the fluctuation in beach water quality was temporary and weather-associated.

Lung Mei Beach in the Tai Po District was mostly graded “Good”, with occasional “Fair” grading observed in between June and early July due to heavy rain.

Similar to last year, beaches in the Tsuen Wan District were graded “Fair” in most of the time in this bathing season. A certain degree of improvement could be seen at Approach Beach, Ting Kau Beach and Casam Beach, where “Good” grading was recorded during mid-late April with ample sunshine. Except Hoi Mei Wan Beach, all other open Tsuen Wan beaches were graded “Very Poor” for 1 to 2 times.

Tai Po Lung Mei Beach in the Tai Po District was generally graded “Good” and only temporarily changed to a “Fair” grading between late July and mid August due to heavy rain. The beach did not record any “Poor” or “Very Poor” grading in the entire 2021.

Water Quality Trend

The satisfying beach water quality in Hong Kong is the outcome of continuous efforts of the Government and stakeholders in the past two decades. The compliance rate of Hong Kong beaches with the bacteriological WQO had once deteriorated from 74% in 1986 (29 of 39 beaches) to 63% (26 of 41 beaches) in 1997, and thereafter improved gradually to 100% in 2010. Since then, the record of full compliance has already maintained for 13 consecutive years.

Comparison of annual beach ranking of gazetted beaches in 1986, 1997 and 2022

Year	WQO Compliant		WQO Non-compliant	
	Good	Fair	Poor	Very Poor
1986	23.1% (9)	51.3% (20)	17.9% (7)	7.7% (3)
1997	24.4% (10)	39.0% (16)	29.3% (12)	7.3% (3)
2022	64.3% (27)	35.7% (15)	-	-

() No. of beaches

Note: Two beaches degazetted in 1995 were excluded from all the statistics above.

Looking back, many beaches were closed in the 1980s (e.g. 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) due to poor water quality. There was a further drop in the WQO compliance rate in the mid-1990s due to population growth associated with new town development. To solve the problem, the Government invested extensive resources to implement various pollution abatement measures, including enforcement of environmental legislation (e.g. Water Pollution Control Ordinance and Livestock Waste Control Scheme), extension of sewerage network, provision of new sewage treatment facilities and upgrading of existing facilities. In particular the Harbour Area Treatment Scheme, a core sewerage infrastructure project in Hong Kong, has brought marked improvement in beach water quality. The major water quality 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	Beaches with Water Quality Improvement
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) for legislative enforcement.	Southern beaches
Interception and diversion of polluted storm drains at beaches in Southern District.	Southern beaches
1991- 1995	
Declaration of the North Western WCZ under the WPCO for legislative enforcement.	Tuen Mun beaches
Diversion of polluted storm water drains away from Castle Peak Beach.	Castle Peak Beach
Provision of public sewers for So Kwun Wat and Sam Shing Estate.	Tuen Mun Beaches
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 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 - 2022	
Commissioning of the Advance Disinfection Facilities at 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
Full commissioning of all facilities of the Harbour Area Treatment Scheme (HATS) Stage 2A.	Beaches along the Tsuen Wan coast

Beach Water Quality Forecast System – New Development

All gazetted beaches in Hong Kong have consistently complied with the bacteriological WQO established based on swimming-associated health risk. To further enhance its service for the general public, the EPD also proactively develops and makes use of advanced smart technology to supplement the conventional beach water quality monitoring. To this end, the EPD is going to launch a new Beach Water Quality Forecast System in the bathing season of 2023. With the new system and service, the public could handily acquire the latest daily beach water quality forecast through the EPD's thematic website and a user-friendly mobile app,

facilitating early itinerary planning of water activities. Details of the forecast system and the roll out schedule will be announced in the second quarter of 2023.

[Figure: Bacteriological WQO compliance rate of gazetted beaches (1997 – 2022)]

Graphs of water quality trend of all gazetted beaches are provided in Appendix D of this report. The public can also visit the EPD's thematic website on beach water quality (<https://www.epd.gov.hk/epd/beach>) to obtain more details of the beach monitoring, as well as annual beach water quality reports and data published since 2000.

[Photos: Fun at beaches]

The Monitoring Programme

Beaches monitored by the EPD

Southern District	Sai Kung District	Tsuen Wan District	Tuen Mun District	Islands District	Tai Po District
Deep Water Bay	Kiu Tsui	Ma Wan Tung Wan	Butterfly	Silver Mine Bay	Tai Po Lung Mei
Repulse Bay	Hap Mun Bay	Anglers'	Castle Peak	Pui O	
Middle Bay	Trio	Gemini	Kadoorie	Lower Cheung Sha	
South Bay	Silverstrand	Hoi Mei Wan	Cafeteria Old	Upper Cheung Sha	
Chung Hom Kok	Clear Water Bay First	Casam	Cafeteria New	Tong Fuk	
St. Stephen's	Clear Water Bay Second	Lido	Golden	Cheung Chau Tung Wan	
Stanley Main	Kiu Tsui (New)**	Ting Kau		Kwun Yam	
Hairpin		Approach		Hung Shing Yeh	
Turtle Cove				Lo So Shing	
Shek O				Discovery Bay**	
Rocky Bay					
Big Wave Bay					

** Non-gazetted beaches

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

Overview of various stages of the Beach Monitoring Programme

[Image of 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

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2022 Annual ranking and bathing season geometric mean *E. coli* levels of Hong Kong's gazetted beaches

Annual Ranking	Beach	<i>E. coli</i> (counts/100ml)
Good	Hap Mun Bay	3
	Lo So Shing	3
	St. Stephen's	3
	Hung Shing Yeh	4
	South Bay	4
	Upper Cheung Sha	4
	Hairpin*	5
	Repulse Bay	6
	Tong Fuk	6
	Trio	6
	Kiu Tsui	7
	Stanley Main	7
	Turtle Cove	7
	Clear Water Bay Second	9
	Tai Po Lung Mei Beach	9
	Deep Water Bay	11
	Kwun Yam	11
	Cheung Chau Tung Wan	12
	Pui O	15
	Rocky Bay*	15
	Chung Hom Kok	18
	Clear Water Bay First	18
	Silverstrand	19
	Cafeteria New	20
	Shek O	23
	Golden	24
	Middle Bay	24
Fair	Big Wave Bay	27
	Kadoorie	31
	Lower Cheung Sha	31
	Cafeteria Old	34
	Butterfly	50
	Silver Mine Bay	51
	Ma Wan Tung Wan	54
	Hoi Mei Wan	75
	Approach	84
	Ting Kau	96
	Casam	109
	Lido	111
	Gemini*	139
	Anglers'	142
	Castle Peak	162

*Beaches not open for swimming (no lifeguard service)

Annual ranking of gazetted beaches at a glance in 2022

District	Beach	Annual Ranking
Southern	Big Wave Bay	Fair
	Chung Hom Kok	Good
	Deep Water Bay	Good
	Hairpin*	Good
	Middle Bay	Good
	Repulse Bay	Good
	Rocky Bay*	Good
	Shek O	Good
	South Bay	Good
	St. Stephen's	Good
	Stanley Main	Good
	Turtle Cove	Good
Sai Kung	Clear Water Bay First	Good
	Clear Water Bay Second	Good
	Hap Mun Bay	Good
	Kiu Tsui	Good
	Silverstrand	Good
	Trio	Good
Tai Po	Tai Po Lung Mei	Good
Tsuen Wan	Anglers'	Fair
	Approach	Fair
	Casam	Fair
	Gemini*	Fair
	Hoi Mei Wan	Fair
	Lido	Fair
	Ting Kau	Fair
	Ma Wan Tung Wan	Fair
Tuen Mun	Butterfly	Fair
	Cafeteria New	Good
	Cafeteria Old	Fair
	Castle Peak	Fair
	Golden	Good
	Kadoorie	Fair
Islands	Cheung Chau Tung Wan	Good
	Hung Shing Yeh	Good
	Kwun Yam	Good
	Lo So Shing	Good
	Lower Cheung Sha	Fair
	Pui O	Good
	Silver Mine Bay	Fair
	Tong Fuk	Good
	Upper Cheung Sha	Good

*Beaches not open for swimming (no lifeguard service)

**Weekly beach grading summary of open gazetted beaches by district
in 2022**

District	Percentage of Weekly Gradings				Total no. of Grading Occasions
	Grade 1	Grade 2	Grade 3	Grade 4	
Southern	63.4%	29.8%	4.6%	2.1%	238
Sai Kung	84.4%	15.6%	0.0%	0.0%	135
Tai Po	78.3%	21.7%	0.0%	0.0%	23
Tsuen Wan	12.2%	50.0%	30.8%	7.1%	156
Tuen Mun	35.4%	43.1%	16.2%	5.4%	130
Islands	66.0%	30.1%	3.9%	0.0%	206

Figures may not add up to 100% due to roundings

Annual ranking and weekly grading summary - Southern District beaches

Beach	Annual Ranking	Percentage of Weekly Gradings			
		Grade 1	Grade 2	Grade 3	Grade 4
Big Wave Bay	Fair	36%	36%	20%	8%
Chung Hom Kok	Good	42%	33%	21%	4%
Deep Water Bay	Good	65%	35%	0%	0%
Hairpin *	Good	92%	8%	0%	0%
Middle Bay	Good	36%	52%	4%	8%
Repulse Bay	Good	78%	22%	0%	0%
Rocky Bay *	Good	75%	25%	0%	0%
Shek O	Good	29%	71%	0%	0%
South Bay	Good	91%	9%	0%	0%
St. Stephen's	Good	91%	9%	0%	0%
Stanley Main	Good	100%	0%	0%	0%
Turtle Cove	Good	71%	29%	0%	0%

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

* Beaches not open for swimming (no lifeguard service)

Annual ranking and weekly grading summary - Sai Kung District beaches

Beach	Annual Ranking	Percentage of Weekly Gradings			
		Grade 1	Grade 2	Grade 3	Grade 4
Clear Water Bay First	Good	59%	41%	0%	0%
Clear Water Bay Second	Good	82%	18%	0%	0%
Hap Mun Bay	Good	100%	0%	0%	0%
Kiu Tsui	Good	96%	4%	0%	0%
Silverstrand	Good	68%	32%	0%	0%
Trio	Good	100%	0%	0%	0%

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

Annual ranking and weekly grading summary - Tsuen Wan District beaches

Beach	Annual Ranking	Percentage of Weekly Gradings			
		Grade 1	Grade 2	Grade 3	Grade 4
Anglers'	Fair	0%	59%	27%	14%
Approach	Fair	14%	45%	41%	0%
Casam	Fair	0%	55%	41%	5%
Gemini *	Fair	14%	45%	18%	23%
Hoi Mei Wan	Fair	22%	39%	22%	17%
Lido	Fair	18%	41%	36%	5%
Ting Kau	Fair	0%	77%	18%	5%
Ma Wan Tung Wan	Fair	30%	35%	30%	4%

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

* Beaches not open for swimming (no lifeguard service)

Annual ranking and weekly grading summary - Tuen Mun District beaches

Beach	Annual Ranking	Percentage of Weekly Gradings			
		Grade 1	Grade 2	Grade 3	Grade 4
Butterfly	Fair	19%	62%	19%	0%
Cafeteria New	Good	52%	48%	0%	0%
Cafeteria Old	Fair	43%	48%	10%	0%
Castle Peak	Fair	8%	29%	38%	25%
Golden	Good	52%	38%	10%	0%
Kadoorie	Fair	41%	36%	18%	5%

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

Annual ranking and weekly grading summary - Islands District beaches

Beach	Annual Ranking	Percentage of Weekly Gradings			
		Grade 1	Grade 2	Grade 3	Grade 4
Cheung Chau Tung Wan	Good	74%	26%	0%	0%
Hung Shing Yeh	Good	87%	13%	0%	0%
Kwun Yam	Good	61%	39%	0%	0%
Lo So Shing	Good	100%	0%	0%	0%
Lower Cheung Sha	Fair	22%	78%	0%	0%
Pui O	Good	52%	48%	0%	0%
Silver Mine Bay	Fair	22%	43%	35%	0%
Tong Fuk	Good	78%	22%	0%	0%
Upper Cheung Sha	Good	100%	0%	0%	0%

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

Annual ranking and weekly grading summary - Tai Po District beaches

Beach	Annual Ranking	Percentage of Weekly Gradings			
		Grade 1	Grade 2	Grade 3	Grade 4
Tai Po Lung Mei	Good	78%	22%	0%	0%

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

Annual beach rankings of gazetted beaches from 1986 to 2022

Year	Number of Beaches in Each Rank				Total
	Good	Fair	Poor	Very Poor	
1986	9	20	7	3	39
1987	5	21	9	5	40
1988	7	19	7	7	40
1989	13	18	7	2	40
1990	14	19	5	2	40
1991	17	14	7	2	40
1992	16	14	7	3	40
1993	15	12	10	3	40
1994	13	14	11	2	40
1995	14	10	13	4	41
1996	13	14	10	4	41
1997	10	16	12	3	41
1998	16	16	8	1	41
1999	22	13	6	0	41
2000	21	14	6	0	41
2001	21	13	5	2	41
2002	23	10	2	6	41
2003	23	11	1	6	41
2004	25	9	5	2	41
2005	23	11	1	6	41
2006	22	12	5	2	41
2007	25	9	7	0	41
2008	24	10	7	0	41
2009	23	15	3	0	41
2010	23	18	0	0	41
2011	31	10	0	0	41
2012	23	18	0	0	41
2013	24	17	0	0	41
2014	23	18	0	0	41
2015	25	16	0	0	41
2016	18	23	0	0	41
2017	23	18	0	0	41
2018	26	15	0	0	41
2019	21	20	0	0	41
2020	24	17	0	0	41
2021	30	12	0	0	42
2022	27	15	0	0	42

Note: Two beaches degazetted in 1995 were excluded from all the statistics above

Comparison of annual beach ranking of gazetted beaches in 1986 and 2022

Year	WQO Compliant		WQO Non-compliant	
	Good	Fair	Poor	Very Poor
1986	23.1% (9)	51.3% (20)	17.9% (7)	7.7% (3)
2022	64.3%(27)	35.7%(15)	0% (0)	0% (0)

() No. of beaches

Note: Two beaches degazetted in 1995 were excluded from all the statistics above

Annual geometric mean *E. coli* levels of gazetted beaches by district, 1997 - 2022

Year	Southern	Sai Kung	Tsuen Wan	Tuen Mun	Islands	Tai Po
1997	55	26	562	326	24	-
1998	34	17	321	125	12	-
1999	16	9	231	59	7	-
2000	16	11	219	57	8	-
2001	18	13	321	101	12	-
2002	10	12	666	70	7	-
2003	11	14	566	85	8	-
2004	9	10	405	64	5	-
2005	14	14	576	77	8	-
2006	13	11	447	122	11	-
2007	9	8	294	77	9	-
2008	11	13	247	56	12	-
2009	11	13	163	43	10	-
2010	14	10	90	39	8	-
2011	7	5	25	34	7	-
2012	11	10	50	47	8	-
2013	12	15	85	54	11	-
2014	12	13	76	44	12	-
2015	14	8	70	45	10	-
2016	17	18	57	66	16	-
2017	9	11	51	46	12	-
2018	8	10	97	31	8	-
2019	12	12	81	63	11	-
2020	8	11	93	65	8	-
2021	8	7	92	31	9	12
2022	10	8	97	41	10	9

Note: Annual geometric mean *E.coli* levels calculated based on all the data collected between March and October

Annual geometric mean *E. coli* levels (1997 - 2022)

Beach																											
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Southern District																											
Big Wave Bay	179	114	77	98	106	23	33	26	101	50	17	31	46	149	17	31	21	40	21	78	36	34	103	37	28	27	
Chung Hom Kok	22	40	14	8	15	13	14	9	13	10	9	13	14	9	5	5	8	13	13	6	6	4	6	9	5	18	
Deep Water Bay	55	46	14	16	18	9	9	7	8	7	7	9	12	9	6	9	11	14	19	24	14	11	19	13	13	11	
Hairpin	44	72	17	18	10	6	7	7	13*	11*	19*	10*	12*	33*	6*	9*	14*	12*	8*	17*	5*	8*	7*	5*	6*	5*	
Middle Bay	40	16	11	11	8	9	14	12	20	18	9	11	12	12	6	15	14	13	13	20	14	9	18	11	16	24	
Repulse Bay	23	11	8	9	13	9	12	4	8	12	7	14	11	7	6	7	10	11	14	10	5	4	4	5	5	6	
Rocky Bay	399*	223*	72*	80*	118*	43*	28*	19*	30*	33*	17*	15*	13*	50*	23*	30*	22*	16*	35*	47*	18*	29*	47*	10*	24*	15*	
Shek O	102	70	32	29	31	13	11	16	19	24	18	22	11	19	11	16	15	18	29	26	16	19	25	7	8	23	
South Bay	17	6	4	7	5	5	11	9	7	7	5	5	4	4	4	5	4	5	9	5	3	2	4	3	4	4	
St. Stephen's	40	26	11	6	7	5	9	4	12	11	6	9	6	4	4	4	10	5	6	7	4	4	5	6	3	3	
Stanley Main	72	24	13	12	9	8	6	5	7	10	9	10	13	20	6	34	19	9	20	23	8	11	7	6	9	7	
Turtle Cove	40	14	12	11	15	8	4	5	8	7	5	5	5	8	4	6	6	8	5	11	5	3	9	8	6	7	
Sai Kung District																											
Clear Water Bay First	62	41	11	16	28	28	17	9	16	20	14	11	15	10	7	8	24	15	14	31	20	19	23	19	8	18	
Clear Water Bay Second	66	44	12	26	22	14	21	10	19	13	9	19	27	13	5	18	15	18	17	32	16	13	17	14	9	9	
Hap Mun Bay	3	2	2	2	1	2	4	3	4	4	3	5	3	3	2	2	7	4	2	4	3	3	2	3	3	3	
Kiu Tsui	5	4	4	5	5	4	5	17	14	11	6	13	16	13	9	10	13	11	6	10	5	8	8	11	7	7	
Silverstrand	148	99	32	61	100	133	97	74	67	30	33	35	51	28	18	30	39	40	18	63	56	24	40	28	18	19	
Trio	30	21	17	10	12	6	10	2	6	5	2	12	5	6	2	9	8	10	4	13	7	7	9	6	4	6	
Tsuen Wan District																											
Anglers'	691*	502*	442*	326*	621*	1169*	693*	619*	895*	772*	496*	510*	276*	134*	27*	69*	133	130	77	76	45	143	88	105	135	142	
Approach	1009*	435*	387*	316*	411*	696*	762*	470*	663*	599*	352*	251*	208*	124*	59	83	106	121	143	78	114	92	97	133	71	84	
Casam	609	239	231	209	233	741	702*	594*	716*	426*	305*	289*	144*	102*	21	50	71	63	52	42	43	94	79	84	74	109	
Gemini	458	399	350	258	323	1155	875*	1102*	1042*	853*	566*	481*	410*	137*	19*	40*	135*	110*	56*	40*	39*	120*	79*	101*	127*	139*	
Hoi Mei Wan	471	280	109	177	199	547	442*	287*	641*	308*	286*	271*	130*	87*	23	51	86	58	90	65	63	92	112	84	76	75	
Lido	600	262	231	181	269	683	734*	523*	782*	459*	280*	296*	178*	87*	21	32	53	57	52	39	34	76	65	66	98	111	
Ma Wan Tung Wan	110	92	51	39	133	201	159	101	132	171	78	53	60	17	10	24	41	31	20	32	29	74	46	84	93	54	
Ting Kau	1583*	1045*	515*	593*	739*	742*	831*	412*	512*	469*	405*	258*	145*	141*	58*	88*	107*	89	151	140	75	101	102	93	85	96	
Tuen Mun District																											
Butterfly	259	121	44	61	74	60	74	55	55	94	84	56	49	30	41	42	71	38	98	131	81	39	91	129	57	50	
Cafeteria New	309	100	60	51	104	62	80	54	70	120	68	48	38	31	27	47	50	31	30	38	31	18	40	37	17	20	
Cafeteria Old	435	138	58	57	125	74	76	61	81	150	67	45	46	34	29	48	39	45	41	70	50	30	64	53	23	34	
Castle Peak	332*	199*	57*	58*	105*	58*	64*	80*	90	139	64	47	35	63	49	48	78	91	71	106	65	70	128	112	103	162	
Golden Beach	352	98	44	50	87	66	84	46	62	117	87	63	42	37	26	62	45	39	31	45	37	22	41	45	19	24	
Kadoorie	290	130	109	68	120	114	160	98	117	118	101	87	48	45	37	40	52	37	29	48	31	28	52	55	19	31	
Islands District																											
Cheung Chau Tung Wan	24	19	11	12	16	17	11	12	14	37	21	15	17	12	6	13	10	14	19	9	18	9	8	11	10	12	
Hung Shing Yeh	5	3	3	5	6	2	5	4	4	4	6	4	6	4	3	4	4	5	4	6	5	4	4	5	3	4	
Kwun Yam	32	21	6	10	11	9	7	5	10	13	9	10	9	8	5	5	9	8	12	12	9	8	7	8	15	11	
Lo So Shing	3	2	4	2	5	2	3	2	3	4	3	5	7	3	3	4	5	5	4	6	6	4	3	4	2	3	
Lower Cheung Sha	85	23	10	12	22	10	14	7	12	11	12	20	13	11	9	10	17	21	17	47	19	9	25	10	20	31	
Pui O	36	16	10	10	17	10	15	9	10	16	30	24	12	14	13	22	51	60	24	29	34	19	22	21	22	15	
Silver Mine Bay	481	123	39	50	67	42	50	14	34	52	22	43	45	31	28	38	39	51	59	119	141*	36	106	37	56	51	
Tong Fuk	14	10	4	5	6	4	3	4	5	5	4	10	5	5	4	4	7	4	4	9	3	4	5	4	5	6	
Upper Cheung Sha	8	3	2	3	5	3	3	3	3	4	4	7	5	4	3	4	4	5	3	7	3	4	7	4	4	4	
Tai Po District																											
Tai Po Lung Mei																									12	9	

Note:
* Beach not open for swimming that year

2022 Beach visitor number

Beach	Daily Average		Peak Day	Peak Month	Total
	Weekdays	Weekends & Public Holidays			
Southern District					
Big Wave Bay	135	620	1400	13030	60615
Chung Hom Kok	43	177	450	3275	16631
Deep Water Bay	735	1854	10000	55400	224900
Hairpin	89	153	400	4550	22510
Middle Bay	44	168	400	3470	17050
Repulse Bay	732	3231	11100	77110	315185
Rocky Bay	---	---	---	---	---
Shek O	291	1021	5500	23545	110040
South Bay	59	281	750	5450	27150
St. Stephen's	66	152	500	3460	19120
Stanley Main	699	1645	4500	44800	210500
Turtle Cove	107	138	280	4370	23070
Sai Kung District					
Clear Water Bay First	142	394	1190	9460	46515
Clear Water Bay Second	1614	2238	5000	90000	381710
Hap Mun Bay	244	190	2380	22975	88195
Kiu Tsui	94	180	335	4515	23365
Silverstrand	149	423	1290	10960	49635
Trio	259	596	1460	17360	77190
Tsuen Wan District					
Anglers'	0	0	0	0	0
Approach	52	133	270	2910	15700
Casam	73	110	200	3370	16850
Gemini	16	49	230	1270	5480
Hoi Mei Wan	20	168	880	3110	14080
Lido	554	998	1900	29160	141680
Ma Wan Tung Wan	185	734	1670	15350	74790
Ting Kau	62	269	420	5390	25660
Tuen Mun District					
Butterfly	442	771	4000	37950	110080
Cafeteria New	844	1589	3900	59150	221800
Cafeteria Old	486	1030	1710	24960	133730
Castle Peak	300	634	1200	15750	84350
Golden	766	2130	7000	49640	249820
Kadoorie	222	786	1920	18516	84106
Islands District					
Cheung Chau Tung Wan	525	1005	2240	26760	142720
Hung Shing Yeh	413	665	1500	20610	96960
Kwun Yam	95	199	475	4760	26679
Lo So Shing	82	158	240	4320	20820
Lower Cheung Sha	382	1266	2800	32500	138540
Pui O	626	1270	2800	35900	168610
Silver Mine Bay	338	1122	3110	32917	122417
Tong Fuk	355	641	1500	23920	91625
Upper Cheung Sha	314	410	820	15970	70320
Tai Po District					
Tai Po Lung Mei	881	3909	8750	58500	222210

Note: Information provided by the Leisure and Cultural Services Department

Physicochemical water quality data for gazetted beaches, 2022

Beach Name	pH	Salinity (psu) ¹	Turbidity (NTU) ²	Temperature (°C)	Dissolved Oxygen (mg/L)	(% Saturation)
Southern District						
Big Wave Bay Beach	8.32 (8.16 - 8.76)	29.0 (16.8 - 33.5)	2.86 (0.79 - 8.59)	27.5 (22.8 - 31.8)	6.5 (4.5 - 8.6)	93 (70 - 129)
Chung Hom Kok Beach	8.35 (8.10 - 8.71)	27.8 (17.5 - 33.4)	3.93 (1.56 - 7.52)	28.0 (23.2 - 31.6)	6.3 (4.3 - 7.9)	91 (67 - 118)
Deep Water Bay Beach	8.30 (8.02 - 8.77)	27.6 (16.0 - 33.3)	6.91 (1.27 - 20.70)	28.3 (22.3 - 31.8)	6.4 (4.2 - 9.5)	92 (65 - 124)
Hairpin Beach *	8.39 (8.19 - 8.75)	27.9 (3.4 - 33.6)	2.43 (0.76 - 7.62)	27.8 (21.6 - 32.4)	6.5 (4.5 - 8.7)	95 (71 - 125)
Middle Bay Beach	8.35 (8.12 - 8.87)	27.5 (16.6 - 33.1)	5.87 (1.43 - 37.70)	27.9 (23.2 - 31.4)	6.4 (4.5 - 8.0)	93 (70 - 117)
Repulse Bay Beach	8.34 (8.14 - 8.89)	28.5 (16.2 - 33.4)	5.06 (0.62 - 26.60)	27.8 (22.8 - 31.2)	6.5 (4.4 - 8.6)	94 (69 - 126)
Rocky Bay Beach *	8.27 (8.12 - 8.56)	29.5 (3.5 - 33.4)	3.14 (0.79 - 12.90)	27.0 (22.9 - 31.5)	6.5 (4.6 - 8.6)	92 (70 - 127)
Shek O Beach	8.33 (8.19 - 8.68)	30.7 (20.2 - 33.5)	3.61 (1.02 - 10.90)	27.6 (23.0 - 32.4)	6.3 (4.5 - 8.7)	91 (71 - 130)
South Bay Beach	8.33 (8.04 - 8.83)	28.4 (16.7 - 33.4)	5.24 (1.19 - 62.30)	28.1 (22.5 - 32.0)	6.3 (4.4 - 8.3)	91 (68 - 113)
St. Stephen's Beach	8.32 (8.13 - 8.71)	28.1 (15.0 - 33.5)	3.14 (1.07 - 8.72)	27.9 (22.9 - 31.9)	6.3 (4.5 - 9.0)	92 (70 - 125)
Stanley Main Beach	8.37 (8.19 - 8.76)	28.9 (17.3 - 33.3)	4.62 (0.77 - 46.50)	27.9 (21.6 - 32.5)	6.5 (4.6 - 8.7)	96 (71 - 124)
Turtle Cove Beach	8.38 (8.18 - 8.76)	28.1 (15.9 - 33.2)	4.91 (1.08 - 21.90)	28.0 (24.2 - 31.6)	6.6 (4.4 - 9.1)	95 (70 - 124)

Sai Kung District

Clear Water Bay First Beach	8.32 (8.17 - 8.63)	29.2 (19.0 - 33.2)	4.78 (0.84 - 16.90)	28.4 (22.0 - 32.3)	6.0 (4.9 - 7.9)	88 (71 - 105)
Clear Water Bay Second Beach	8.31 (8.15 - 8.67)	30.6 (21.3 - 33.3)	4.23 (1.52 - 12.80)	28.4 (21.5 - 32.5)	5.9 (4.6 - 7.7)	88 (68 - 106)
Hap Mun Bay Beach	8.32 (8.17 - 8.57)	30.3 (20.7 - 33.1)	2.84 (0.84 - 12.10)	28.6 (24.1 - 32.7)	6.2 (4.4 - 7.9)	91 (69 - 110)
Kiu Tsui Beach	8.29 (7.99 - 8.60)	29.6 (20.2 - 33.0)	2.95 (0.79 - 10.20)	28.6 (23.2 - 32.9)	5.9 (4.3 - 7.8)	88 (69 - 116)
Silverstrand Beach	8.32 (8.20 - 8.67)	29.3 (20.7 - 32.7)	4.46 (1.08 - 18.20)	28.4 (22.1 - 32.4)	6.4 (5.1 - 9.6)	93 (79 - 130)
Trio Beach	8.27 (8.14 - 8.53)	28.7 (16.2 - 32.8)	2.87 (1.17 - 9.47)	28.9 (23.7 - 33.5)	6.2 (4.2 - 8.6)	89 (67 - 120)

Tsuen Wan District

Anglers' Beach	8.22 (8.06 - 8.81)	25.7 (13.1 - 33.0)	4.59 (1.27 - 11.70)	27.8 (23.5 - 31.4)	5.8 (4.6 - 7.6)	84 (69 - 106)
Approach Beach	8.31 (8.09 - 8.94)	25.5 (10.1 - 32.9)	7.17 (1.24 - 25.50)	28.0 (23.8 - 30.9)	6.5 (4.7 - 8.5)	95 (70 - 128)
Casam Beach	8.26 (8.07 - 8.74)	25.8 (12.6 - 33.1)	5.11 (0.73 - 26.30)	28.2 (23.4 - 31.6)	6.3 (4.9 - 7.7)	90 (73 - 111)
Gemini Beaches *	8.18 (8.04 - 8.56)	26.6 (15.6 - 33.0)	3.94 (1.01 - 20.20)	27.5 (23.7 - 30.8)	5.8 (4.6 - 7.4)	83 (67 - 97)
Hoi Mei Wan Beach	8.23 (8.04 - 8.67)	25.4 (12.5 - 33.1)	3.40 (0.47 - 10.20)	28.0 (22.9 - 31.0)	6.2 (4.8 - 8.5)	89 (72 - 116)
Lido Beach	8.24 (8.00 - 8.65)	25.8 (12.7 - 33.0)	4.30 (0.85 - 21.10)	28.0 (23.5 - 31.1)	6.0 (4.4 - 8.7)	87 (65 - 115)
Ma Wan Tung Wan Beach	8.27 (8.07 - 8.54)	27.1 (15.3 - 32.7)	7.62 (0.99 - 33.70)	27.9 (15.1 - 32.8)	6.4 (4.5 - 8.8)	92 (67 - 127)
Ting Kau Beach	8.28 (8.07 - 8.71)	24.9 (11.3 - 31.9)	6.38 (0.56 - 28.70)	28.4 (23.0 - 31.6)	6.3 (4.8 - 8.7)	91 (71 - 118)

Tuen Mun District

Butterfly Beach	8.20 (7.94 - 8.64)	22.3 (5.3 - 32.6)	6.59 (1.44 - 18.50)	28.3 (24.4 - 32.0)	6.0 (4.0 - 8.6)	85 (63 - 116)
Cafeteria New Beach	8.25 (8.06 - 8.70)	21.9 (5.7 - 32.6)	7.08 (2.26 - 29.00)	28.1 (23.9 - 31.5)	6.1 (4.2 - 8.2)	87 (63 - 122)
Cafeteria Old Beach	8.24 (8.03 - 8.67)	21.7 (5.1 - 32.5)	6.43 (1.71 - 25.20)	28.2 (23.9 - 32.0)	6.0 (3.6 - 8.4)	85 (56 - 123)
Castle Peak Beach	8.26 (7.95 - 8.76)	20.1 (4.4 - 32.7)	7.03 (0.86 - 18.60)	28.7 (24.9 - 32.2)	6.6 (4.2 - 9.3)	95 (68 - 150)
Golden Beach	8.22 (8.05 - 8.67)	22.1 (5.8 - 32.5)	8.23 (2.09 - 41.50)	28.1 (23.7 - 31.8)	6.2 (4.2 - 9.4)	90 (63 - 130)
Kadoorie Beach	8.22 (7.98 - 8.72)	21.1 (4.4 - 32.7)	5.39 (0.98 - 17.20)	28.4 (24.9 - 32.1)	6.1 (4.2 - 8.6)	88 (65 - 121)

Islands District

Cheung Chau Tung Wan Beach	8.25 (8.09 - 8.55)	26.7 (.2 - 33.1)	3.67 (0.95 - 11.30)	27.6 (22.7 - 30.7)	6.5 (4.7 - 7.9)	93 (69 - 120)
Hung Shing Yeh Beach	8.29 (8.08 - 8.70)	27.0 (9.8 - 32.8)	6.37 (1.55 - 18.60)	27.7 (22.9 - 32.4)	6.7 (5.0 - 8.4)	97 (74 - 127)
Kwun Yam Beach	8.24 (8.09 - 8.51)	27.4 (18.3 - 32.9)	3.63 (1.28 - 10.50)	27.7 (22.8 - 30.9)	7.1 (5.0 - 10.0)	101 (75 - 130)
Lo So Shing Beach	8.31 (8.15 - 8.53)	27.9 (14.5 - 33.2)	4.62 (1.15 - 13.80)	27.9 (23.4 - 31.9)	6.8 (4.7 - 9.7)	98 (73 - 127)
Lower Cheung Sha Beach	8.34 (7.01 - 8.74)	25.6 (11.7 - 32.1)	8.72 (1.48 - 45.20)	28.5 (22.6 - 34.0)	6.4 (4.2 - 8.3)	95 (72 - 128)
Pui O Beach	8.28 (6.30 - 8.74)	26.5 (14.0 - 33.0)	15.66 (3.04 - 128.00)	29.9 (24.1 - 36.2)	5.8 (3.9 - 8.3)	86 (55 - 130)
Silver Mine Bay Beach	8.28 (8.06 - 8.58)	24.4 (11.3 - 31.3)	15.14 (2.76 - 108.00)	29.4 (23.8 - 33.9)	6.2 (4.7 - 7.7)	90 (62 - 112)
Tong Fuk Beach	8.32 (6.81 - 8.72)	26.9 (13.2 - 33.0)	7.84 (1.03 - 61.30)	28.9 (22.8 - 34.3)	6.0 (4.4 - 8.2)	88 (63 - 112)
Upper Cheung Sha Beach	8.35 (7.09 - 8.69)	26.9 (12.9 - 33.1)	8.24 (0.98 - 57.40)	28.8 (22.5 - 33.7)	6.1 (4.2 - 7.2)	90 (59 - 114)

Tai Po District

Tai Po Lung Mei Beach	8.32 (8.12 - 8.53)	28.0 (16.5 - 31.8)	1.89 (0.61 - 5.16)	28.6 (23.0 - 33.3)	6.1 (4.3 - 8.1)	90 (65 - 116)
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Note: Data presented are arithmetic means; figures in brackets are ranges.

Footnote:
1. Practical Salinity Unit
2. Nephelometric Turbidity Unit
*Beaches not open for swimming (no lifeguard service)