

## EPD - Beach Water Quality

### Beach Water Quality in Hong Kong 2009

#### **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**

**[Photo: EPD inspectors monitor water quality at Middle Bay Beach.]**

#### **Introduction**

The objective of the Beach Water Quality Monitoring Programme is to monitor beach water quality and protect the health of the bathers. The background and details of EPD's monitoring activities can be found on [the website \(http://www.epd.gov.hk\)](http://www.epd.gov.hk).

**[Photo: Blue sky, bright sunlight and clean water greet swimmers at Hong Kong beaches.]**

This report summarises the beach monitoring data collected in 2009, and the gradings of the beaches and their compliance with the Water Quality Objective (WQO). In 2009, the EPD monitored 41 gazetted beaches and three non-gazetted beaches located in different parts of the territory. The monitoring frequency was at least three times a month during the bathing season from March to October. During monitoring, the EPD staff made field observations and collected samples for laboratory analyses of *E. coli* bacteria. The EPD staff also took measurements of dissolved oxygen, pH, salinity, temperature and turbidity of beach waters.

Hong Kong's beaches are assessed using a dual system: annual ranking and weekly grading based on the *E. coli* level in beach water, which indicates 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", and those ranked "Good" and "Fair" meet the WQO for bathing waters.

**[Photo: A typical water quality grading board at the beach.]**

## Annual Beach Ranking in 2009

The beach water quality in 2009 was generally fine. Twenty-three (or 56%) out of 41 gazetted beaches were ranked as “Good”, slightly down from 24 last year. Fifteen other beaches (37%) were ranked as “Fair”, three (7%) as “Poor”, and none as “Very Poor”. In terms of WQO compliance, thirty-eight (or 93%) of the 41 gazetted beaches in Hong Kong complied with the WQO. This represents a significant surge in compliance rate from the 83% in the previous six years (2003 to 2008), and it is also the highest compliance rate since the monitoring programme began in 1986.

**[Photo: Fun for all ages at Shek O Beach.]**

The beaches with “Good” water quality ranking were mainly located in the Southern District (Hong Kong Island South), Sai Kung area, and Outlying Islands. Eleven out of 12 beaches in the Southern District were ranked as “Good” in 2009, only Big Wave Bay Beach was ranked as “Fair”. Of the nine beaches monitored on the Outlying Islands, eight were “Good” while Silver Mine Bay Beach was rated as “Fair”. In the Sai Kung area, four of the six beaches were “Good”. Among them, Hap Mun Bay Beach on Sharp Island is the cleanest gazetted beach in Hong Kong in 2009 in terms of overall *E. coli* levels. Clear Water Bay Second Beach and Silverstrand Beach were rated as “Fair”. On the western side, all six beaches along the Tuen Mun coast received a “Fair” ranking in 2009. In the Tsuen Wan area, Ma Wan Tung Wan Beach ranked as “Fair” in 2009 and was the only beach open to swimmers in the Tsuen Wan area. The water quality of the seven closed Tsuen Wan beaches has shown signs of improvement in 2009. Four of the seven beaches had achieved “Fair” water quality rankings, but the other beaches remained at “Poor” ranking. The Government is currently taking active [measures to further improve the water quality of Tsuen Wan beaches](#) and to ensure their early re-opening to the public for swimming.

**[Photo: An impressive view of the Ting Kau and Tsing Ma Bridges from Lido Beach.]**

The 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. Discovery Bay and the beach adjacent to Kiu Tsui Beach continued to be ranked “Good” in 2009. Lung Mei has improved from “Poor” in 2007 and 2008 to “Fair” in 2009. Extension of public sewerage network to Lung Mei village area is underway, drainage diversion and pollution control measures will be implemented to improve the water quality in Lung Mei area in the coming years,

In summary, the beach rankings have improved in 2009: the compliance of bathing WQO has surged from 83% achieved in the last six years (2003 to 2008) to a record high of 93% in 2009. The continued upgrading of sewage infrastructure and enforcement of environmental legislation would bring about gradual improvement of beach water quality in Hong Kong. We also observed that the relatively dry summer in 2009 contributed to the beach water quality improvement, noting that the total rainfall of 2,070 mm during the bathing season from March to October in 2009 was much lower than the 2,940 mm in the corresponding period in 2008.

## Weekly Beach Grading in 2009

The EPD issues weekly gradings for gazetted beaches which are open for swimming. The information is disseminated to the public through [weekly press releases](#), [the EPD's website](#), the beach hotline and beach noticeboards.

**[Photo: Golden Beach opens year round for swimmers]**

In 2009, the water quality of Southern District beaches was highly satisfactory. All ten gazetted beaches received "Good" or "Fair" gradings in the bathing season, except on a few occasions when Big Wave Bay and Chung Hom Kok Beaches were rated as "Poor" or "Very Poor" after heavy rain storms. South Bay, St. Stephen's and Turtle Cove Beaches had the best water quality, achieving "Good" gradings in over 95% of the rating occasions. The water quality of Sai Kung beaches was generally very good. Hap Mun Bay and Trio Beaches achieved "Good" gradings over 90% of the rating occasions, while the other beaches were mostly "Good" or "Fair". The water quality of the beaches in the Tuen Mun area was generally better than last year's and nearly all graded as "Good" or "Fair", except a "Poor" grading was observed once at Butterfly Beach. The gradings of Ma Wan Tung Wan Beach in Tsuen Wan were mostly maintained at "Fair", while the gradings occasionally also fluctuated between "Good" and "Poor". The beaches on the Outlying Islands were generally ideal for swimming, with Tong Fuk Beach on Lantau Island achieving 100% "Good" gradings. Kwun Yam, Hung Shing Yeh, Lo So Shing and Upper Cheung Sha Beaches achieved "Good" gradings over 95% of the rating occasions.

**[Photo: Kwun Yam Beach offers respite from hustle and bustle of city life.]**

## Water quality trend

There has been a steady improvement in beach water quality in Hong Kong in the last decade. Out of the 41 gazetted beaches, those complying with the WQO have increased from 26 to 38 (63% to 93%) between 1997 and 2009. In the same period, the number of "Good" beaches has more than doubled from 10 to 23.

## **Annual beach rankings of 1997 and 2008 compared**

Year	WQO Compliant		WQO Non-compliant	
	Good	Fair	Poor	Very Poor
1997	24.4% (10)	39.0% (16)	29.3% (12)	7.3% (3)
2009	56.1% (23)	36.6% (15)	7.3% (3)	0% (0)

( ) No. of beaches

The overall WQO compliance rate has been maintained at above 80% since 1999. The compliance rate has soared to a record high of 93% in 2009. The improvements made at Castle Peak and Silver Mine Bay Beaches (see details in story boxes in the next two pages) were most noticeable as they have consistently complied with the WQO in recent years. Four out of the seven closed Tsuen Wan beaches met the WQO in 2009, compared to none in 2008. The improvement was attributed to enforcement of environmental legislation, extension of the sewerage network and enhanced sewage treatment facilities in the beach hinterlands.

Water quality trend lines of individual beaches over the last two decades (since 1986 when the monitoring programme began) are included in this report to show the changes over the years. Background and details of the beach monitoring programme are available at the EPD's website, and from the report "20 Years of Beach Water Quality Monitoring in Hong Kong" issued in 2006 (also accessible through [the website](#)).

Two Story boxes

1. [Improvement of beach water quality enabling the re-opening of Castle Peak Beach Information excerpted from:](#)

[http://www.epd.gov.hk/epd/wqo\\_review/en/pdf/castle\\_peak\\_beach\\_eng.pdf](http://www.epd.gov.hk/epd/wqo_review/en/pdf/castle_peak_beach_eng.pdf)

2. [Silver Mine Bay Beach Information excerpted from:](#)

[http://www.epd.gov.hk/epd/wqo\\_review/en/pdf/silvermine\\_bay\\_eng.pdf](http://www.epd.gov.hk/epd/wqo_review/en/pdf/silvermine_bay_eng.pdf)

## **Measures to improve Tsuen Wan Beaches**

Seven gazetted beaches in Tsuen Wan remained closed to swimmers in 2009 due to poor and unstable water quality. They were Anglers', Approach, Casam, Gemini, Hoi Mei Wan, Lido and Ting Kau Beaches. The poor and unstable water quality was due to pollution sources in the unsewered hinterlands and fluctuating background bacterial levels in the marine waters off Tsuen Wan coast. Nevertheless, we observed some improvements in 2009: no beach in Tsuen Wan is ranked as "Very Poor" in three consecutive bathing seasons and four of them, namely, Casam, Hoi Mei Wan, Lido and Ting Kau Beaches, had improved from the annual ranking of "Poor" in 2008 to "Fair" in 2009.

### **Map showing location of the seven closed beaches and Sham Tseng Sewage Treatment Works**

The above improvements in recent years are achieved through Government's effort to provide sewerage along the coastal strip between Tsing Lung Tau and Ting Kau areas in phases and to step up enforcement actions in the areas. The successful full operation of the Sham Tseng Sewage Treatment Works in early 2005 was an important milestone. Since then, the Government has progressively installed new public sewers in the beach hinterlands along Castle Peak Road at Tsing Lung Tau, Sham Tseng and Ting Kau areas, thus reducing polluted discharges to the nearby bathing waters. With the Government's continuous effort in providing new public sewers in phases along the Castle Peak Road and in enforcing environmental legislation, improvement of water quality of these closed beaches has become more discernable in the last couple of years, as reflected by the changes in the annual ranking over the last five years.

To further improve the water quality of Tsuen Wan beaches, the Government has been implementing the next stage of the Harbour Area Treatment Scheme (HATS Stage 2A), and began the testing and commissioning of the Advance Disinfection Facilities in late 2009 to disinfect effluent from the Stonecutters Island Sewage Treatment Works. Moreover, the extension of the public sewers to the beach hinterlands along Castle Peak Road has been completed in early 2010, and connections to unsewered villages or developments to these sewers are on-going. With the implementation of these sewerage improvement works and continuous pollution control efforts, the water quality in the area has shown some early signs of improvement. The Government is striving to further improve the water quality of Tsuen Wan beaches and paving the way for their early re-opening to the public for swimming.

### **Advance Disinfection Facilities at Stonecutters Island Sewage Treatment Works**

To summarise, the water quality of four of the seven closed Tsuen Wan beaches, namely Casam, Hoi Mei Wan, Lido and Ting Kau Beaches had improved from the annual ranking of "Poor" in 2008 to "Fair" in 2009. The relatively dry summer could also be a contributing factor to the observed improvement in 2009. The EPD will continue to closely monitor the seven beaches in the coming bathing season in order to ascertain that these improvements are indeed sustainable and that they could meet the WQO.

## 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	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	
Turtle Cove		Approach*		Hung Shing Yeh	
Shek O				Lo So Shing	
Big Wave Bay				Discovery Bay**	
Hairpin*					
Rocky Bay*					

\* Closed beaches

\*\* Non-gazetted beaches

## Beach monitoring frequencies

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

\* March to October

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

[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

## **The 2009 Findings**

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## Hong Kong's gazetted beaches : the 2009 annual ranking

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

\* Closed beach

## Beach grading summary by district in 2009

District	Percentage of Weekly Gradings				Total no. of Grading Occasions
	Grade 1	Grade 2	Grade 3	Grade 4	
<b>Southern</b>	84%	14%	1%	1%	347
<b>Sai Kung</b>	65%	34%	0%	1%	197
<b>Tsuen Wan and Tuen Mun</b>	19%	79%	2%	0%	237
<b>Outlying Islands</b>	81%	18%	1%	0%	268

## Ranking and grading summary - Southern District beaches

Beach	Annual Ranking	Percentage of Weekly Gradings			
		Grade 1	Grade 2	Grade 3	Grade 4
<b>Big Wave Bay</b>	Good	43%	40%	14%	3%
<b>Chung Hom Kok</b>	Good	74%	23%	0%	3%
<b>Deep Water Bay</b>	Good	77%	23%	0%	0%
<b>Hairpin *</b>	Good	No grading for closed beach.			
<b>Middle Bay</b>	Good	83%	17%	0%	0%
<b>Repulse Bay</b>	Good	86%	14%	0%	0%
<b>Rocky Bay *</b>	Good	No grading for closed beach.			
<b>Shek O</b>	Good	94%	6%	0%	0%
<b>South Bay</b>	Good	97%	3%	0%	0%
<b>St. Stephen's</b>	Good	97%	3%	0%	0%
<b>Stanley Main</b>	Good	91%	9%	0%	0%
<b>Turtle Cove</b>	Good	97%	3%	0%	0%

\* Beaches closed for reasons other than water quality.

## Ranking and grading summary - Sai Kung beaches

Beach	Annual Ranking	Percentage of Weekly Gradings			
		Grade 1	Grade 2	Grade 3	Grade 4
Clear Water Bay First	Good	69%	31%	0%	0%
Clear Water Bay Second	Fair	39%	58%	0%	3%
Hap Mun Bay	Good	94%	6%	0%	0%
Kiu Tsui	Good	74%	23%	0%	3%
Silverstrand	Fair	19%	81%	0%	0%
Trio	Good	97%	3%	0%	0%

## Ranking and grading summary - Tsuen Wan and Tuen Mun beaches

District	Beach	Annual Ranking	Percentage of Weekly Gradings			
			Grade 1	Grade 2	Grade 3	Grade 4
Tsuen Wan	Anglers' *	Poor	No grading for closed beach.			
	Approach *	Poor				
	Casam *	Fair				
	Gemini *	Poor				
	Hoi Mei Wan *	Fair				
	Lido *	Fair				
	Ting Kau *	Fair				
Ma Wan Tung Wan	Fair	8%	36%	52%	4%	
Tuen Mun	Butterfly	Fair	24%	73%	3%	0%
	Cafeteria New	Fair	21%	79%	0%	0%
	Cafeteria Old	Fair	9%	91%	0%	0%
	Castle Peak	Fair	26%	74%	0%	0%
	Golden	Fair	18%	82%	0%	0%
	Kadoorie	Fair	21%	79%	0%	0%

\* Closed beaches

## Ranking and Grading Summary - Beaches on the Outlying Islands

Beach	Annual Ranking	Percentage of Weekly Gradings			
		Grade 1	Grade 2	Grade 3	Grade 4
<b>Cheung Chau Tung Wan</b>	Good	73%	27%	0%	0%
<b>Hung Shing Yeh</b>	Good	96%	4%	0%	0%
<b>Kwun Yam</b>	Good	96%	4%	0%	0%
<b>Lo So Shing</b>	Good	96%	4%	0%	0%
<b>Lower Cheung Sha</b>	Good	76%	24%	0%	0%
<b>Pui O</b>	Good	67%	33%	0%	0%
<b>Silver Mine Bay</b>	Fair	33%	58%	9%	0%
<b>Tong Fuk</b>	Good	100%	0%	0%	0%
<b>Upper Cheung Sha</b>	Good	97%	3%	0%	0%

### Annual beach rankings from 1997 to 2009

Year	Number of Beaches in Each Rank				Total
	Good	Fair	Poor	Very Poor	
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

### Annual beach rankings of 1997 and 2009 compared

Year	WQO Compliant		WQO Non-compliant	
	Good	Fair	Poor	Very Poor
1997	24.4% (10)	39.0% (16)	29.3% (12)	7.3% (3)
2009	56.1% (23)	36.6% (15)	7.3% (3)	0% (0)

( ) No. of beaches



**Compliance with the Water Quality  
Objective at gazetted beaches, 1997 - 2009**

<b>Year</b>	<b>Percentage of Compliance</b>
<b>1997</b>	63%
<b>1998</b>	78%
<b>1999</b>	85%
<b>2000</b>	85%
<b>2001</b>	83%
<b>2002</b>	80%
<b>2003</b>	83%
<b>2004</b>	83%
<b>2005</b>	83%
<b>2006</b>	83%
<b>2007</b>	83%
<b>2008</b>	83%
<b>2009</b>	93%

**Annual geometric mean *E. coli* levels by district, 1997 - 2009**

<b>Year</b>	<b>Southern</b>	<b>Sai Kung</b>	<b>Tsuen Wan</b>	<b>Tuen Mun</b>	<b>Outlying Islands</b>
<b>1997</b>	55	26	562	326	24
<b>1998</b>	34	17	321	125	12
<b>1999</b>	16	9	231	59	7
<b>2000</b>	16	11	219	57	8
<b>2001</b>	18	13	321	101	12
<b>2002</b>	10	12	666	70	7
<b>2003</b>	11	14	566	85	8
<b>2004</b>	9	10	405	64	5
<b>2005</b>	14	14	576	77	8
<b>2006</b>	13	11	447	122	11
<b>2007</b>	9	8	294	77	9
<b>2008</b>	11	13	247	56	12
<b>2009</b>	11	13	163	43	10

Annual geometric mean *E. coli* levels (1997 - 2009)

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

Note:

# Figure in red indicates that the beach was closed in that year

## Beach visitor numbers, 2009

Beach	Daily Average		Peak Day	Peak Month	Total
	Weekdays	Weekends & Public Holidays			
<b>Southern District</b>					
Big Wave Bay	227	1,310	3,400	30,065	139,017
Chung Hom Kok	270	942	2,500	21,010	117,890
Deep Water Bay	971	4,227	18,000	121,600	488,700
Hairpin	117	473	900	9,370	56,130
Middle Bay	54	453	1,200	13,000	43,900
Repulse Bay	6,645	11,511	23,000	295,620	2,002,702
Rocky Bay	-	-	-	-	-
Shek O	1,393	3,680	18,000	144,880	517,295
South Bay	129	1,176	3,900	36,695	112,244
St. Stephen's	168	612	2,100	16,270	75,317
Stanley Main	715	3,782	24,800	90,330	411,295
Turtle Cove	61	359	1,280	8,445	37,783
<b>Sai Kung District</b>					
Clear Water Bay First	129	668	2,290	14,628	73,023
Clear Water Bay Second	2,764	6,603	23,000	277,480	972,850
Hap Mun Bay	480	1,037	5,550	57,340	160,477
Kiu Tsui	37	303	849	4,573	29,640
Silverstrand	131	401	1,551	15,622	52,807
Trio	391	713	3,050	31,060	120,631
<b>Tsuen Wan District</b>					
Anglers'	44	102	350	3,050	15,230
Approach	78	85	125	2,715	19,640
Casam	14	17	65	516	3,661
Gemini	6	9	25	243	1,656
Hoi Mei Wan	6	10	80	355	1,845
Lido	80	140	340	3,866	24,313
Ma Wan Tung Wan	575	2,234	8,791	55,263	268,598
Ting Kau	19	27	65	825	5,352
<b>Tuen Mun District</b>					
Butterfly	800	1,508	2,400	38,000	250,550
Cafeteria New	828	1,812	4,690	62,010	278,710
Cafeteria Old	670	1,449	3,610	40,790	224,060
Castle Peak	422	1,373	1,800	24,250	176,550
Golden	1,768	6,099	10,100	120,400	766,550
Kadoorie	529	830	1,500	29,250	152,810
<b>Outlying Islands</b>					
Cheung Chau Tung Wan	192	544	4,800	15,420	74,050
Hung Shing Yeh	137	662	2,360	14,630	74,030
Kwun Yam	86	235	700	7,375	32,484
Lo So Shing	46	135	360	3,330	18,040
Lower Cheung Sha	103	295	700	8,750	40,000
Pui O	147	456	1,700	16,380	59,790
Silver Mine Bay	87	276	985	21,345	35,870
Tong Fuk	111	237	680	8,730	36,850
Upper Cheung Sha	83	219	900	6,010	30,880

Note: Information provided by the Leisure and Cultural Services Department

**Physicochemical water quality data of gazetted beaches, 2009**

Beach	pH	Salinity (psu) <sup>1</sup>	Turbidity (NTU) <sup>2</sup>	Temperature (°C)	Dissolved Oxygen (mg/L)	(% Saturation)
<b>Southern District</b>						
Big Wave Bay	8.4 ( 8.1 - 8.7 )	29.8 ( 20.8 - 33.4 )	5.3 ( 2.6 - 13.5 )	26.1 ( 18.5 - 30.8 )	7.0 ( 5.9 - 8.6 )	100 ( 88 - 122 )
Chung Hom Kok	8.4 ( 8.2 - 8.9 )	30.1 ( 23.1 - 33.6 )	6.8 ( 2.7 - 18.1 )	26.5 ( 19.6 - 31.2 )	6.8 ( 5.3 - 9.5 )	96 ( 83 - 130 )
Deep Water Bay	8.4 ( 7.7 - 8.8 )	29.6 ( 20.4 - 33.5 )	8.4 ( 2.9 - 22.8 )	26.9 ( 19.6 - 32.1 )	6.8 ( 5.1 - 9.4 )	96 ( 77 - 130 )
Hairpin [Closed]	8.4 ( 8.1 - 8.8 )	30.5 ( 21.5 - 33.8 )	6.2 ( 1.4 - 13.6 )	26.4 ( 18.6 - 31.7 )	7.0 ( 5.5 - 8.9 )	100 ( 82 - 126 )
Middle Bay	8.4 ( 8.2 - 8.9 )	30.0 ( 21.5 - 33.5 )	7.2 ( 2.5 - 28.5 )	26.4 ( 19.6 - 31.2 )	6.9 ( 5.3 - 9.2 )	99 ( 84 - 130 )
Repulse Bay	8.4 ( 8.1 - 8.8 )	30.2 ( 21.8 - 33.6 )	7.6 ( 2.3 - 21.5 )	26.3 ( 19.6 - 30.0 )	6.8 ( 5.5 - 8.8 )	98 ( 84 - 130 )
Rocky Bay [Closed]	8.3 ( 8.1 - 8.8 )	31.3 ( 25.8 - 33.4 )	5.6 ( 2.8 - 12.5 )	25.7 ( 18.5 - 30.0 )	7.0 ( 4.6 - 8.8 )	100 ( 67 - 130 )
Shek O	8.4 ( 8.2 - 8.8 )	31.2 ( 24.0 - 33.6 )	6.3 ( 2.4 - 18.2 )	26.1 ( 18.8 - 30.5 )	7.0 ( 5.9 - 9.4 )	99 ( 90 - 129 )
South Bay	8.4 ( 8.2 - 9.0 )	30.2 ( 22.8 - 33.7 )	6.2 ( 2.3 - 13.7 )	26.4 ( 19.8 - 30.0 )	6.7 ( 5.2 - 9.9 )	95 ( 79 - 130 )
St. Stephen's	8.4 ( 8.2 - 8.8 )	30.1 ( 23.2 - 33.7 )	6.6 ( 2.8 - 19.5 )	26.5 ( 19.6 - 30.2 )	6.7 ( 5.4 - 8.9 )	95 ( 81 - 117 )
Stanley Main	8.4 ( 8.1 - 8.8 )	29.9 ( 20.2 - 33.5 )	13.6 ( 2.5 - ##### )	26.7 ( 18.6 - 31.6 )	7.1 ( 5.3 - 9.1 )	101 ( 85 - 130 )
Turtle Cove	8.4 ( 8.2 - 8.7 )	30.3 ( 22.2 - 33.8 )	8.6 ( 1.9 - 32.5 )	26.5 ( 18.8 - 31.4 )	7.0 ( 5.6 - 8.9 )	101 ( 84 - 130 )
<b>Sai Kung District</b>						
Clear Water Bay First	8.4 ( 8.3 - 8.8 )	30.3 ( 26.2 - 33.4 )	7.6 ( 2.6 - 24.3 )	26.8 ( 18.4 - 31.5 )	6.9 ( 5.7 - 8.8 )	98 ( 79 - 123 )
Clear Water Bay Second	8.5 ( 8.3 - 8.8 )	30.4 ( 24.6 - 34.0 )	8.7 ( 2.3 - 26.5 )	27.2 ( 18.5 - 32.2 )	6.9 ( 5.8 - 8.6 )	99 ( 81 - 118 )
Hap Mun Bay	8.5 ( 8.2 - 8.9 )	31.0 ( 27.4 - 33.5 )	4.1 ( 1.3 - 14.8 )	27.2 ( 18.8 - 32.4 )	6.8 ( 6.0 - 8.3 )	98 ( 87 - 128 )
Kiu Tsui	8.5 ( 8.2 - 8.8 )	30.7 ( 26.7 - 33.5 )	4.1 ( 1.3 - 8.6 )	27.3 ( 18.8 - 32.6 )	6.9 ( 6.1 - 8.2 )	101 ( 92 - 117 )
Silverstrand	8.4 ( 8.2 - 8.7 )	29.9 ( 20.2 - 33.0 )	7.1 ( 2.5 - 21.3 )	26.8 ( 18.4 - 31.5 )	6.9 ( 5.6 - 8.4 )	97 ( 72 - 116 )
Trio	8.4 ( 8.3 - 8.9 )	30.3 ( 23.8 - 33.3 )	4.0 ( 1.0 - 12.2 )	27.4 ( 19.0 - 32.6 )	6.7 ( 5.4 - 8.0 )	97 ( 84 - 110 )
<b>Tsuen Wan District</b>						
Anglers' [Closed]	8.3 ( 8.1 - 8.5 )	28.1 ( 16.9 - 32.7 )	7.4 ( 1.8 - 12.7 )	26.3 ( 19.0 - 30.8 )	6.4 ( 3.6 - 7.9 )	90 ( 52 - 108 )
Approach [Closed]	8.3 ( 8.0 - 8.6 )	27.4 ( 17.1 - 32.3 )	6.5 ( 2.4 - 18.8 )	26.1 ( 20.0 - 30.1 )	6.5 ( 5.0 - 7.9 )	94 ( 77 - 109 )
Casam [Closed]	8.3 ( 8.0 - 8.6 )	27.9 ( 18.3 - 32.6 )	6.1 ( 2.3 - 11.8 )	26.3 ( 19.7 - 30.4 )	6.5 ( 5.2 - 7.8 )	93 ( 75 - 104 )
Gemini [Closed]	8.3 ( 8.1 - 8.6 )	28.3 ( 18.5 - 32.6 )	6.4 ( 2.1 - 10.2 )	26.1 ( 19.3 - 30.1 )	6.4 ( 4.5 - 7.8 )	91 ( 68 - 108 )
Hoi Mei Wan [Closed]	8.2 ( 7.8 - 8.6 )	27.7 ( 18.3 - 32.4 )	5.9 ( 2.4 - 15.1 )	26.6 ( 19.6 - 30.9 )	6.4 ( 5.2 - 7.5 )	91 ( 70 - 106 )
Lido [Closed]	8.3 ( 8.1 - 8.5 )	27.9 ( 17.9 - 32.5 )	7.0 ( 2.4 - 14.3 )	26.3 ( 19.6 - 30.4 )	6.5 ( 5.3 - 7.9 )	92 ( 70 - 105 )
Ma Wan Tung Wan	8.3 ( 8.1 - 8.5 )	28.3 ( 16.1 - 32.5 )	12.9 ( 2.7 - 38.5 )	27.3 ( 20.0 - 32.1 )	6.7 ( 5.5 - 8.5 )	95 ( 79 - 123 )
Ting Kau [Closed]	8.3 ( 8.1 - 8.5 )	27.2 ( 16.4 - 32.0 )	6.0 ( 2.1 - 16.5 )	26.4 ( 19.8 - 30.6 )	6.4 ( 5.5 - 7.4 )	92 ( 78 - 104 )
<b>Tuen Mun District</b>						
Butterfly	8.3 ( 8.1 - 8.6 )	25.2 ( 10.7 - 32.3 )	11.8 ( 2.0 - 43.7 )	27.3 ( 20.0 - 31.1 )	6.6 ( 4.8 - 7.8 )	94 ( 79 - 109 )
Cafeteria New	8.3 ( 8.0 - 8.9 )	24.9 ( 9.9 - 32.1 )	15.6 ( 2.8 - 55.1 )	27.1 ( 20.0 - 31.0 )	6.7 ( 5.3 - 8.0 )	96 ( 82 - 105 )
Cafeteria Old	8.3 ( 8.0 - 8.8 )	24.9 ( 9.9 - 32.2 )	13.2 ( 2.5 - 41.5 )	27.1 ( 20.1 - 30.7 )	6.8 ( 5.2 - 7.9 )	95 ( 74 - 109 )
Castle Peak	8.3 ( 8.0 - 8.9 )	24.6 ( 9.9 - 32.1 )	8.3 ( 2.4 - 24.8 )	27.4 ( 20.9 - 31.2 )	6.7 ( 4.9 - 8.6 )	95 ( 72 - 121 )
Golden	8.2 ( 7.2 - 8.8 )	25.0 ( 9.8 - 32.2 )	17.2 ( 3.5 - 53.5 )	26.9 ( 19.8 - 30.7 )	6.8 ( 4.6 - 8.2 )	96 ( 71 - 116 )
Kadoorie	8.3 ( 8.0 - 8.9 )	24.7 ( 10.0 - 32.5 )	11.8 ( 2.9 - 56.8 )	27.3 ( 20.1 - 30.7 )	6.8 ( 4.5 - 8.4 )	96 ( 71 - 108 )

<b>Outlying Islands</b>						
Cheung Chau Tung Wan	8.4 ( 8.1 - 8.7 )	29.0 ( 23.7 - 32.7 )	6.7 ( 2.8 - 16.4 )	26.4 ( 19.5 - 31.0 )	6.9 ( 5.5 - 8.6 )	98 ( 82 - 130 )
Hung Shing Yeh	8.3 ( 8.1 - 8.7 )	29.3 ( 19.7 - 33.6 )	9.4 ( 3.1 - 24.3 )	26.3 ( 18.9 - 31.4 )	6.5 ( 4.9 - 8.8 )	93 ( 69 - 121 )
Kwun Yam	8.4 ( 8.1 - 8.7 )	28.7 ( 23.4 - 32.6 )	7.2 ( 3.1 - 19.5 )	26.4 ( 19.5 - 30.4 )	6.8 ( 5.6 - 9.7 )	97 ( 81 - 131 )
Lo So Shing	8.4 ( 8.2 - 8.8 )	29.2 ( 17.5 - 33.8 )	8.5 ( 3.3 - 33.9 )	26.7 ( 19.6 - 31.2 )	6.9 ( 5.2 - 7.9 )	98 ( 72 - 113 )
Lower Cheung Sha	8.4 ( 8.1 - 8.8 )	28.5 ( 19.4 - 33.0 )	16.3 ( 3.6 - 69.4 )	27.1 ( 19.3 - 32.3 )	6.9 ( 5.4 - 8.3 )	98 ( 85 - 112 )
Pui O	8.4 ( 8.2 - 8.8 )	28.2 ( 15.6 - 33.1 )	20.6 ( 5.2 - 70.6 )	27.4 ( 19.4 - 33.0 )	6.8 ( 5.2 - 9.4 )	98 ( 80 - 118 )
Silver Mine Bay	8.3 ( 8.0 - 8.8 )	26.0 ( 14.6 - 32.6 )	12.6 ( 4.3 - 60.5 )	27.7 ( 19.5 - 34.0 )	6.7 ( 3.9 - 9.5 )	97 ( 65 - 130 )
Tong Fuk	8.4 ( 8.2 - 8.8 )	28.7 ( 20.1 - 33.1 )	12.7 ( 3.7 - 43.4 )	26.9 ( 19.4 - 32.0 )	7.0 ( 5.3 - 8.7 )	99 ( 83 - 112 )
Upper Cheung Sha	8.4 ( 8.2 - 8.8 )	28.5 ( 19.9 - 33.1 )	15.7 ( 3.9 - 93.7 )	26.9 ( 19.5 - 32.0 )	7.0 ( 5.5 - 8.1 )	100 ( 85 - 113 )

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

Footnote:

1. Practical Salinity Unit
2. Nephelometric Turbidity Unit