European Environment Agency

Bathing water results 2010 – Finland

1. Reporting and assessment

This report gives a general overview of bathing water quality in Finland during the 2010 bathing season. Finland has reported under the Directive 2006/7/EC since 2008.

Before the necessary data set for assessment of bathing water quality under the Directive 2006/7/EC is compiled (data for three or four consecutive years) the rules for transition period assessment are applied. This means that the classification of bathing waters is defined on the basis of concentrations of intestinal enterococci and *Escherichia coli* that are reported under the Directive 2006/7/EC. The limit values for the classification are taken from the Directive 76/160/EEC. For the conversion of reported parameters under the Directive 2006/7/EC, Article 13.3 of the Directive 2006/7/EC foresees that the parameter *Escherichia coli*, reported under the Directive 2006/7/EC, is assumed to be equivalent to the parameter faecal coliforms of the Directive 76/160/EEC. The parameter intestinal enterococci reported under the Directive 2006/7/EC is assumed to be equivalent to the parameter faecal streptococci.

The results are classified in the following categories:

- **Class CI:** Compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli* and not compliant with the guide values of the Directive 76/160/EEC for *Escherichia coli* or intestinal enterococci;
- **Class CG:** Compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli* and the more stringent guide values for the *Escherichia coli* and intestinal enterococci;
- **Class NC:** Not compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli*;
- **Class B:** Banned or closed (temporary or throughout the season);
- **Class NF:** Insufficiently sampled;
- **Class NS:** Not sampled.

The new bathing water directive (2006/7/EC) requires Member States to start sampling shortly before the start of the bathing season. It also requires that the interval between sampling should not exceed one month. In some cases these required changes in regard to the old bathing water directive (76/160/EEC) have not yet been implemented, resulting in a late start date of sampling at some sites and/or insufficiently frequent sampling. For that reason two rules in regard to sampling frequency are considered in the assessment of monitoring results in 2010. By the first rule, 41 days were taken as a maximum difference between two samples (less strict rule), whereas by the second rule the maximum days between two samples considered were 32 days (strict rule). The new directive also requires that the first sample must be taken shortly before the start of a bathing season. However, in the assessment of bathing water quality in 2010, the first sample could be taken not later than 10 days after the start of the bathing season. If this was a case, the second sample should have been taken no later than 41 days after the start of the bathing season when the less strict rules or 32 days when the strict rules are used in the assessment. The bathing water is classified as insufficiently sampled or not sampled when the pre-season sample is missing or when the difference between two consecutive samples is larger than 41 days by the less strict rule or 32 days by the strict rule. In graphs results applying the less strict rules are presented.

2. Length of bathing season and number of bathing waters

For all bathing waters the bathing season lasted 2.5 months, from 15 June to 31 August 2010, except for one coastal bathing site and six inland bathing waters that opened on 25 June and closed on 15 August.

A total of 328 bathing waters were monitored in Finland during the 2010 bathing season, of which 86 were coastal bathing waters and 242 inland bathing waters (14 on rivers; 228 on lakes).

With 328 bathing waters Finland accounts for about 1.6 % of the reported bathing waters of the European Union.

The evolution of the reported number of bathing waters since monitoring of the water quality began under the Directive 76/160/EEC and the Directive 2006/7/EC is presented in Table 1. There is a significant decrease in number of inland bathing waters since the start of the reporting from 378 inland bathing waters in 1995 to 242 in 2010. There were 12 less inland bathing waters in 2010 than in the previous year: five new bathing waters were added to the list and 17 were de-listed. The number of coastal bathing waters fluctuated in the period 1995-2007 between 93 in 1999 and 120 in 2001. It decreased afterwards to 85 in 2008 and 2009. There was one more coastal bathing site in 2010 than in the previous year: two new bathing waters were added to the list and one was de-listed.

3. Bathing water quality

The results of the bathing water quality in Finland for the period 1995-2009 as reported in the past reporting years and for the bathing season of 2010 are presented in Figure 1. The previous reports are available on the European Commission's bathing water quality website (http://ec.europa.eu/environment/water/water-bathing/index_en.html; Water and Health/Bathing Water/ 2005-2010 reports) and the European Environment Agency's bathing water website (http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water; reports for the 2008 and 2009 bathing seasons).

The graphs show, for coastal and inland bathing waters separately:

- The percentage of bathing waters that comply with the guide values (class CG, blue line);
- The percentage of bathing waters that comply with the mandatory values (class CI, green line);
- The percentage of bathing waters that do not comply with the mandatory values (class NC, red line);
- The percentage of bathing waters that are banned or closed (temporarily or throughout the season) (class B, grey line).

Table 1 shows the same information in absolute numbers and in percentages separately for coastal and inland bathing waters. The numbers and percentages of insufficiently sampled or not sampled bathing waters are also presented. Table 2 shows the bathing water quality results for the 2009 and 2010 seasons in Finland for all bathing waters.

Map 1 shows the location of the reported bathing waters in Finland. The results applying the less strict rules are presented. In addition, insufficiently sampled bathing waters by the strict rules are presented as an orange outline. The location of the bathing waters is based on the geographic coordinates reported by the Finnish authorities.

Coastal bathing waters

In Finland, 98.8 % of the coastal bathing waters met the mandatory water quality in 2010, the same as in the previous year. The compliance with the guide values was 74.4 %, which is a decrease of 8 %. One bathing site (1.2 %) was non-compliant with the mandatory value for *Escherichia coli*, the same as in 2009. Since 2004, no coastal bathing water had to be closed during the season.

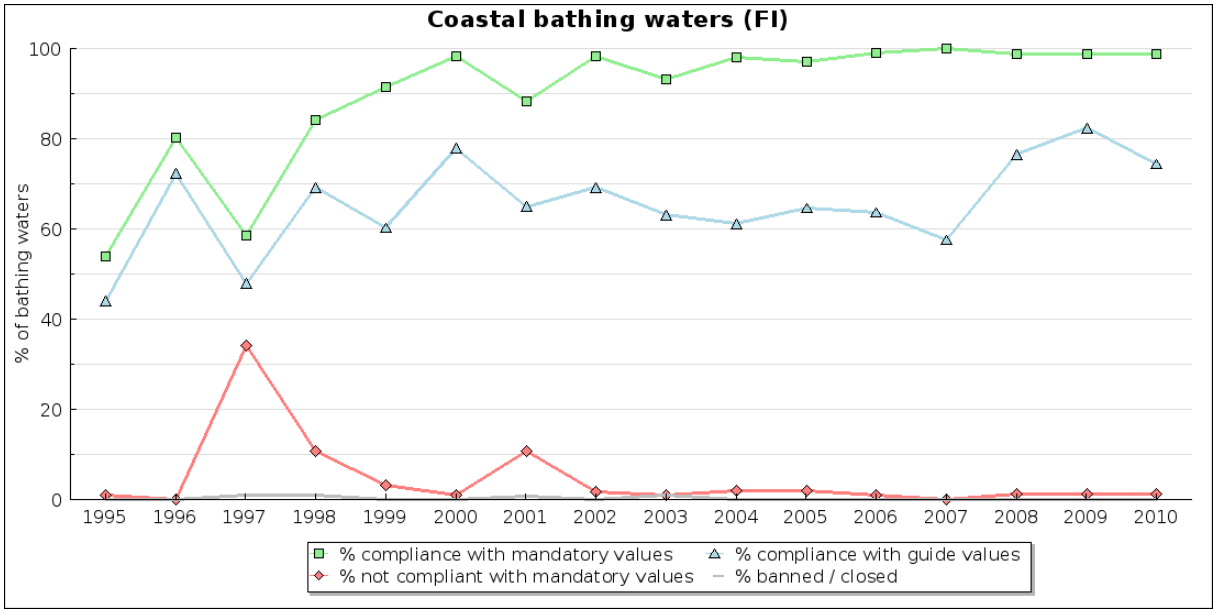
The compliance rate with the mandatory values and guide values fluctuated strongly between 1995 and 2003. Since 2004, the compliance rate with the mandatory values became fairly stable, reaching close to 100 %. Total compliance was reached in 2007. The compliance rate with the guide values reached above 70 % in 2008 and 2010 and above 80 % in 2009 after fluctuating around 60 % since 2003.

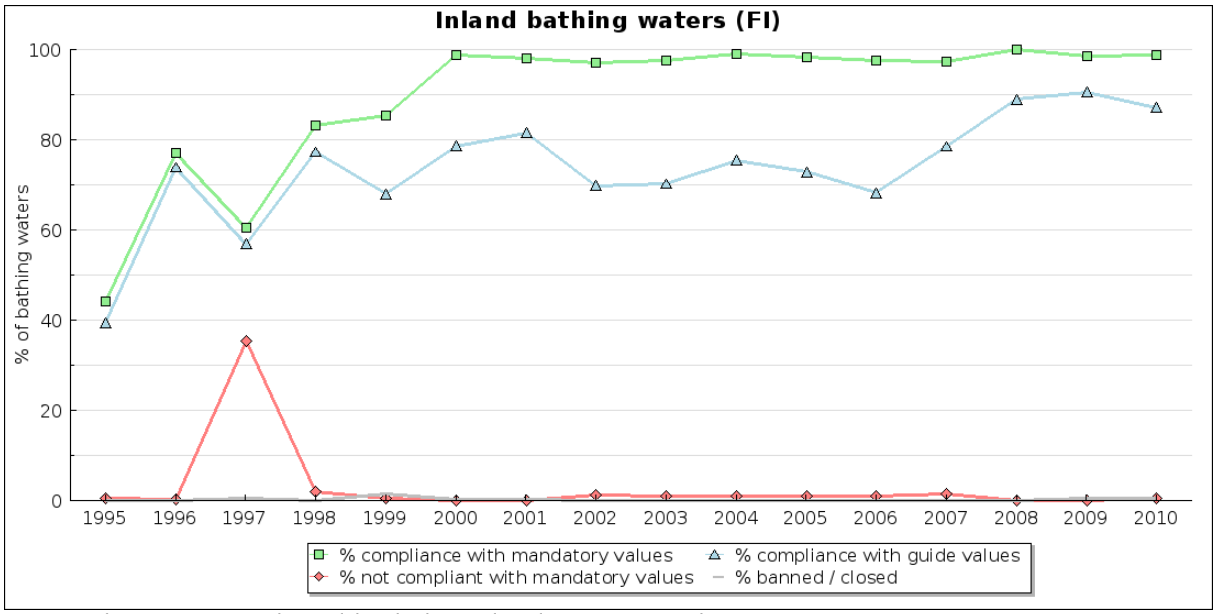
Inland bathing waters

Some 98.8 % of the inland bathing waters met the mandatory water quality in 2010. This is an increase of 0.4 % compared to the previous year. The rate of compliance with the guide values was 87.2 %, which is a decrease of 3.4 %. One bathing site (0.4 %) was non-compliant with the mandatory value for *Escherichia coli*, while no bathing water was non-compliant in 2009. One inland bathing site (0.4 %) was closed during the season, the same as in 2009.

Overall, the compliance rate increased in the period from 1995 till 2000. The percentages of inland bathing waters complying with the mandatory quality values reached a constant level of about 98 % since 2000, except in 2008 (100%). From 1998 to 2007, the percentage of bathing waters compliant with the more stringent guide values was fluctuating between 67.9 % in 1999 and 81.5 % in 2001. Since 2008, the compliance with the guide values reached about 90 % with a drop in 2010.

Figure 1: Results of bathing water quality in Finland from 1995 to 2010





Note: For the year 2010 results applying the less strict rules are presented.

Table 1: Results of bathing water quality in Finland from 1995 to 2010

FI												
		Total number of bathing waters	Compliance with guide and mandatory values***		Compliance with mandatory values		Not compliant		Banned/closed temporarily or throughout the season		Insufficiently sampled or not sampled	
			number	%	number	%	number	%	number	%	number	%
Coastal bathing waters	1995	100	44	44.0	54	54.0	1	1.0	0	0.0	45	45.0
	1996	101	73	72.3	81	80.2	0	0.0	0	0.0	20	19.8
	1997	94	45	47.9	55	58.5	32	34.0	1	1.1	6	6.4
	1998	94	65	69.1	79	84.0	10	10.6	1	1.1	4	4.3
	1999	93	56	60.2	85	91.4	3	3.2	0	0.0	5	5.4
	2000	113	88	77.9	111	98.2	1	0.9	0	0.0	1	0.9
	2001	120	78	65.0	106	88.3	13	10.8	1	0.8	0	0.0
	2002	117	81	69.2	115	98.3	2	1.7	0	0.0	0	0.0
	2003	103	65	63.1	96	93.2	1	1.0	1	1.0	5	4.9
	2004	103	63	61.2	101	98.1	2	1.9	0	0.0	0	0.0
	2005	99	64	64.6	96	97.0	2	2.0	0	0.0	1	1.0
	2006	99	63	63.6	98	99.0	1	1.0	0	0.0	0	0.0
	2007	99	57	57.6	99	100.0	0	0.0	0	0.0	0	0.0
	2008*	85	65	76.5	84	98.8	1	1.2	0	0.0	0	0.0
	2009	85	70	82.4	84	98.8	1	1.2	0	0.0	0	0.0
	2010	86	64	74.4	85	98.8	1	1.2	0	0.0	0	0.0
Inland bathing waters	1995	378	149	39.4	167	44.2	2	0.5	0	0.0	209	55.3
	1996	391	289	73.9	301	77.0	1	0.3	0	0.0	89	22.8
	1997	360	205	56.9	218	60.6	127	35.3	2	0.6	13	3.6
	1998	357	276	77.3	297	83.2	7	2.0	0	0.0	53	14.8
	1999	343	233	67.9	293	85.4	2	0.6	5	1.5	43	12.5
	2000	332	261	78.6	328	98.8	0	0.0	1	0.3	3	0.9
	2001	314	256	81.5	308	98.1	0	0.0	1	0.3	5	1.6
	2002	305	213	69.8	296	97.0	4	1.3	0	0.0	5	1.6
	2003	292	205	70.2	285	97.6	3	1.0	0	0.0	4	1.4
	2004	285	215	75.4	282	98.9	3	1.1	0	0.0	0	0.0
	2005	280	204	72.9	275	98.2	3	1.1	0	0.0	2	0.7
	2006	274	187	68.2	267	97.4	3	1.1	0	0.0	4	1.5
	2007	266	209	78.6	259	97.4	4	1.5	0	0.0	3	1.1
	2008*	262	233	88.9	262	100.0	0	0.0	0	0.0	0	0.0
	2009	254	230	90.6	250	98.4	0	0.0	1	0.4	3	1.2
	2010**	242	211	87.2	239	98.8	1	0.4	1	0.4	1	0.4
	2010	242	209	86.4	237	97.9	1	0.4	1	0.4	3	1.2

*Changes after official report for the 2008 bathing season. **Less strict rules applied (41 days taken as a maximum difference between two samples for reporting under Directive 2006/7/EC). ***Bathing waters which were compliant with the guide values were also compliant with the mandatory values for five parameters under the Directive 76/160/EEC (1995-2007) or the mandatory value for *Escherichia coli* (2008-2010).

Table 2: Results of bathing water quality for all bathing waters in Finland in 2009 and 2010

FI												
		Total number of bathing waters	Compliance with guide and mandatory values**		Compliance with mandatory value		Not compliant		Banned/closed temporarily or throughout the season		Insufficiently sampled or not sampled	
			number	%	number	%	number	%	number	%	number	%
All bathing waters	2009	339	300	88.5	334	98.5	1	0.3	1	0.3	3	0.9
	2010*	328	275	83.8	324	98.8	2	0.6	1	0.3	1	0.3
	2010	328	273	83.2	322	98.2	2	0.6	1	0.3	3	0.9

*****Less strict rules applied (41 days taken as a maximum difference between two samples for reporting under Directive 2006/7/EC). **Bathing waters which were compliant with the guide values were also compliant with the mandatory value for *Escherichia coli.*

4. Important information as provided by the Finnish authorities

Monitoring of bathing water

Municipal health protection authorities are responsible for taking care of quality surveillance of bathing water. According to the legislation no fewer than four (or three) samples are to be taken per bathing season including one sample around two weeks before the start of a bathing season. Sampling dates are to be distributed throughout the bathing season with the interval between sampling dates never exceeding one month.

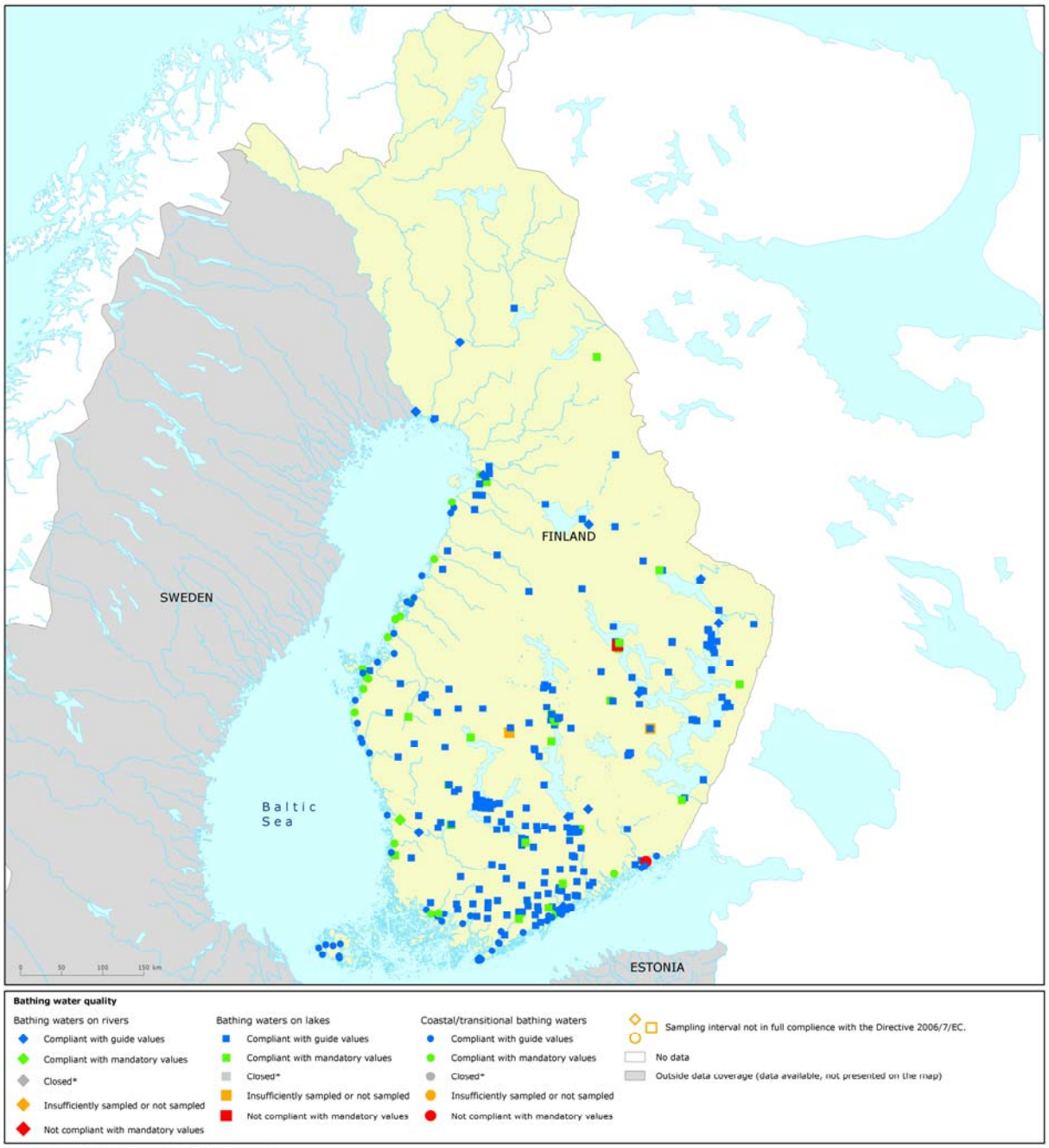
In addition to the microbiological reference methods specified in the Directive, Colilert® Quantitray method can be used for the monitoring of *Escherichia coli*. The equivalence trial and comparison of different methods were carried out during the bathing season 2006 according to the procedure specified in the article 3(9) of the Directive.

Assessment of bathing water

Assessment and classification of bathing waters will be done for the first time after the bathing season 2011. As a result of this assessment bathing waters will be classified as excellent, good, satisfactory or poor on the basis of the monitoring results of intestinal enterococci and *Escherichia coli* compiled in relation to the bathing seasons 2008-2011.

In addition to the classification of bathing waters, individual monitoring results of intestinal enterococci, *Escherichia coli* and cyanobacteria are assessed using national action limits. Management actions including public information shall be taken if the monitoring results indicate that the quality of bathing water can cause a risk for bathers' health.

Map 1: Bathing waters reported during the 2010 bathing season in Finland



Note: * banned or closed (temporarily or throughout the season)
More data on bathing water quality on: http://www.eea.europa.eu/themes/water/mapviewers/bathing

Source: National boundaries: GISCO; Large rivers and lakes: EEA, WFD Article 3; Bathing waters data and coordinates: Finnish authorities

Temporary blooms of cyanobacteria

The Finnish authorities reported cyanobacteria in bathing waters with management actions taken as follows:

Bathing water identification code	Bathing water name	River Basin District	Management actions
FI122609002	KIRJURINLUOTO	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Detection of cyanobacteria in bathing water. Management actions taken: additional monitoring of cyanobacteria including visual inspections and microscopical investigation, and public information at the bathing area, in the internet, on the radio and in the newspapers.
FI124864001	SATAMA	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Detection of cyanobacteria in bathing water. Management actions taken: additional monitoring of cyanobacteria including visual inspections and microscopical investigation, and public information.
FI132749001	SIILINLAHDEN RANTAUIMALA	Vuoksi	Detection of cyanobacteria in bathing water. Management actions taken: additional monitoring of cyanobacteria including visual inspections, and public information at the bathing area, in the internet and in the newspaper.
FI124908002	HAKALANRANTA	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Detection of cyanobacteria in bathing water. Management actions taken: additional monitoring of cyanobacteria including visual inspections, and public information.
FI112240002	VATTOLA	Kymijoki-Gulf of Finland	Detection of cyanobacteria in bathing water. Management actions taken: public information at the bathing area.
FI111490001	BJÖRKUDDEN	Kymijoki-Gulf of Finland	Detection of cyanobacteria in bathing water. Management actions taken: public information.
FI119270002	OTALAMPI	Kymijoki-Gulf of Finland	Detection of cyanobacteria in bathing water. Management actions taken: public information.

Temporary microbiological contamination

The Finnish authorities also reported temporarily high concentrations of *Escherichia coli* or intestinal enterococci in bathing waters with management actions taken as follows:

Bathing water identification code	Bathing water name	River Basin District	Management actions
FI143475003	ÅMINNE	Kokemäenjoki-Archipelago Sea-Bothnian Sea	High concentration of Escherichia coli (580 cfu/100 ml) in bathing water on 21 June. Management actions taken: investigations, additional sampling and public information. The additional sample showed that the concentration decreased rapidly being 210 cfu/100 ml on 23 June. Heavy rain was the reason to the high microbial concentration.
FI132297006	MATKAILUKESKUS RAUHALAHTI	Vuoksi	High concentration of Escherichia coli in bathing water on 9 August (2400 cfu/100 ml). Management actions taken: investigations, additional sampling and public information. Investigations showed no reasons to the high concentration of Escherichia coli. The concentration decreased rapidly being 200 cfu/100 ml on 11 August.
FI195280003	HARRSTRÖM	Kokemäenjoki-Archipelago Sea-Bothnian Sea	High concentrations of Escherichia coli (1300 cfu/100 ml) and intestinal enterococci (217 cfu/100 ml) in bathing water on 21 June. Management actions taken: investigations, additional sampling and public information. The additional sample showed that the concentrations of these microbes decreased rapidly being 60 cfu/100 ml for Escherichia coli and 62 cfu/100 ml for intestinal enterococci on 23 June. Heavy rain was the reason to the high microbial concentrations.
FI143499002	ISKMO	Kokemäenjoki-	High concentrations of Escherichia coli (520 cfu/100 ml)

Bathing water identification code	Bathing water name	River Basin District	Management actions
	SIMSTRAND	Archipelago Sea-Bothnian Sea	and intestinal enterococci (350 cfu/100 ml) in bathing water on 12 July. Management actions taken: additional sampling and public information. The additional sample showed that the concentrations decreased rapidly being 12 cfu/100 ml for Escherichia coli and 3 cfu/100 ml for intestinal enterococci on 13 July.
FI124912001	ALASENRANTA	Kokemäenjoki-Archipelago Sea-Bothnian Sea	One high concentration of Escherichia coli in bathing water on 11 August (1200 cfu/100 ml) because of heavy rain. Management actions taken: additional sampling and public information. The additional sample showed that the concentration of Escherichia coli decreased very rapidly being 24 cfu/100 ml on 18 August. Public were informed at the bathing site and in the internet.
FI126285003	ÄIJÄNNIEMI	Kymijoki-Gulf of Finland	One high concentration of Escherichia coli in bathing water on 26 July (2400 cfu/100 ml). Management actions taken: investigations, additional sampling and public information. The additional sample showed that the concentration of Escherichia coli decreased very rapidly being 41 cfu/100 ml on 27 July.
FI151564002	NALLIKARI	Oulujoki-Iijoki	The concentration of Escherichia coli was rather high in bathing water on 21 June (880 cfu/100 ml) and on 2 August (500 cfu/100 ml). Management actions taken: investigations, additional sampling and public information. Additional samples showed that the concentration of Escherichia coli decreased very rapidly being 31 cfu/100 ml on 22 June, and 230 cfu/100 ml on 3 August.
FI133197002	ILOSAARI	Vuoksi	Temporarily closed. Two high concentrations of Escherichia coli in bathing water. Management actions taken: investigations, additional samplings, public information including bathing prohibitions lasting from 18 June to 29 June and from 23 July to 28 July. Investigations showed that the leaking toilet at the bathing area was the reason to the high concentrations of Escherichia coli. The toilet was repaired and moved farther from the shore, contaminated bathing area was cleaned and sand was changed.
FI110910012	PIKKUKOSKI	Kymijoki-Gulf of Finland	Two waste water overflows, one because of heavy rains and the other because of power failure. Management actions taken: investigations, additional samplings and public information at the bathing area and in the internet, and by giving the press release.

Public participation

Municipal health protection authorities establish a list of locally identified public bathing waters before the start of a bathing season. Municipal authorities arrange opportunities for public to get information on the implementation of the bathing water legislation and on the list of public bathing waters. The list can e.g. be displayed at the official notice board or published using appropriate media such as Internet and local newspapers. Public has then opportunity to formulate proposals and comments on the list.

The final list of public bathing areas having a large number of bathers is to be reported to the European Commission before the start of each bathing season. In Finland, large number of bathers is considered to be more than 100 bathers in a day. In 2010, some small public bathing areas with low number of bathers (below 100 bathers in a day during previous bathing seasons) have been delisted and some larger areas with higher number of bathers have been added to the list. The quality of bathing water has been excellent in these delisted bathing areas. As small public bathing areas these delisted areas are monitored according to the national legislation including requirements for frequent monitoring, quality of bathing water and public information. In Finland, high amount of private summer cottages near lakes, rivers and sea reduce the use of public bathing areas.

The reasons for de-listing of each bathing water as reported by the Finnish authorities are as follows:

Bathing water identification code	Bathing water name	River Basin District	Reasons for change
FI110780007	SILVERSAND	Kymijoki-Gulf of Finland	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Silversand will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI125081001	AURINKORANTA	Kymijoki-Gulf of Finland	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Aurinkoranta will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI121431001	PAPPISTEN ISOJÄRVI	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Low number of bathers, the max. number of bathers has been around 60 bathers in a day. Bathers use Mellilä bathing area instead of Pappisten isojärvi.The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Pappisten isojärvi will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI124604001	LOUKONLAHTI LASTENRANTA	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. The quality of bathing water has been very good, classification ci in 2009. As a small public bathing area Loukonlahti will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI124604003	TURRI	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Turri will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI124702002	KIRKONKYLÄ	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Low number of bathers, the max. number of bathers has been around 50 bathers in a day. Private summer cottages and detached houses have been built near lakes. People, mostly elderly people, use their own beaches instead of public bathing areas. The quality of bathing water has been excellent. As a small public bathing area Kirkonkylä will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI124837005	NIEMI	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. Two new bathing areas, Eliander and Lahdesjärvi, have better facilities and bathers use them. The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Niemi will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI124837006	OLKAHINEN	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. Two new bathing areas, Eliander and Lahdesjärvi, have better facilities and bathers use them. The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Olkahinen will be monitored according to

Bathing water identification code	Bathing water name	River Basin District	Reasons for change
			national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI141892001	HIETASAARI	Kymijoki-Gulf of Finland	In Finland, there were two severe storms during the bathing season 2010 which caused many damages around the country. A storm on 4 August distroyed a bathing area of Hietasaari in the municipality of Uurainen. Hundreads of trees around the bathing area were cut down causing lots of damages including facilities at the bathing area. Few people were also injured because of the storm. The area has been closed since the storm. After renovation works which will last quite a long time, the area will not be a public bathing area anymore. The area will be renovated for the use of private caravan organization with limited number of members.
FI141992001	KELLONKANNAS	Kymijoki-Gulf of Finland	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. Shallow bathing area (bathing is possible 50 meters from the shoreline) and boat traffic are the reasons to the lowered number of bathers. The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Kellonkannas will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI192980006	KURKI	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Kurki will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI192980007	PAIJALA	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Paijala will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI142164003	LAMMINJÄRVI	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. The quality of bathing water has been excellent, classification cg in 2009. As a small bathing area Lamminjärvi will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI142164002	SAARIJÄRVI	Kokemäenjoki-Archipelago Sea-Bothnian Sea	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. The quality of bathing water has been excellent, classification cg in 2009. As a small bathing area Saarijärvi will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI131618002	PUNKAHARJUN LOMAKESKUS	Vuoksi	Due to financial reasons (bankruptcy of the camping site) the number of bathers has decreased below 100 bathers in a day. The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Lomakeskus will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI131740004	VUOHIMÄKI	Vuoksi	Due to financial reasons (bankruptcy of the camping site) the number of bathers has decreased below 100 bathers

Bathing water identification code	Bathing water name	River Basin District	Reasons for change
			in a day. The quality of bathing water has been excellent, classification cg in 2009. As a small public bathing area Vuohimäki will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.
FI133426001	KUORINGAN LEVÄHDYSALUE	Vuoksi	There is no administrator for Kuorinka, i.e. Kuorinka is not a public bathing area anymore. All signs, facilities etc. have been removed from the area. Bathers have to use other public bathing areas. The quality of bathing water has been excellent, classification cg in 2009.
FI151977001	HAMARI	Oulujoki-Iijoki	Low number of bathers, the max. number of bathers has been below 100 bathers in a day. The quality of bathing water has been excellent, classification cg in 2009. As a small bathing area Hamari will be monitored according to national regulations. These regulations include e.g. requirements for frequent monitoring, quality of bathing water and public information.

Information to the public

Information is disseminated mainly at the public bathing area and in the Internet. The most recent monitoring results and their assessments are in general displayed at public bathing area.

Wastewater treatment in urban areas

Finland has a long and successful history of water pollution control. Some of the large towns started to construct sewerage networks and wastewater treatment plants already during the first decades of the 20th century. The Water Act, enacted in 1961, initiated a comprehensive process of wastewater treatment plant construction in small towns and even in villages. Already in 1985 every town and village with more than 200 inhabitants had a treatment plant. At present, all collected wastewaters in Finland receive efficient biological-chemical treatment with national mean reduction values of about 97% for organic load, 96% for phosphorus and 55% for nitrogen. The results of the best plants are even better. The most recent Governmental Decree on urban wastewater treatment entered into force in November 2006.

A new era in solving pollution problems in sparsely settled areas began when a comprehensive new Environmental Protection Act came into force in March 2000. The Act covers also small discharges that may cause pollution of surface waters or groundwater. On the basis of the Act, more detailed requirements have been given by a Governmental Decree on Onsite Wastewater Treatment, given for the first time in 2003 and revised in March 2011.

5. More information on bathing water quality in Europe

Of the more than 21 000 bathing areas monitored throughout the European Union in 2010, two-thirds were in coastal waters and the rest in rivers and lakes. The largest number of coastal bathing waters can be found in Italy, Greece, France, Spain and Denmark, while Germany and France have the highest number of inland bathing waters.

During recent years, including the 2010 bathing season, majority of Member States have adjusted their monitoring programmes to meet the requirements of the new bathing water directive (2006/7/EC). Luxembourg was the first country to report under this Directive in 2007. Cyprus, Denmark, Estonia, Finland, Germany, Hungary, Latvia, Lithuania, Slovakia, Spain and Sweden started to report under the new directive in 2008. Malta and the Netherlands started to report in 2009, while Austria, Belgium - Walloon Region, France, Greece, Italy, Portugal and Slovenia reported under this Directive for the first time in 2010. Historical data of two microbiological parameters, *Escherichia coli* and intestinal enterococci were sent by Sweden (since 2005), Luxembourg and Malta (since 2006), Belgium - Walloon Region, Greece, Hungary and Portugal (since 2007), and France (since 2009). To conclude,

20 Member States and the Walloon Region of Belgium monitored and reported under the new directive (Directive 2006/7/EC) in 2010.

Assessment of the status of all bathing waters in 2010 under the rules of the new directive (Directive 2006/7/EC) is made for Luxembourg, Malta and Hungary. Assessment of the bathing water quality on a country level for the other countries that reported under the new directive has been done using transition rules. Bathing water quality for individual bathing waters having four year set of data can be seen on the interactive maps and data viewer that are described below.

Three non-EU countries, Croatia, Montenegro and Switzerland have reported monitoring results under the new directive. Switzerland sent data on *Escherichia coli* for all bathing waters but only for some data on intestinal enterococci.

Overall in 2010, 92.1 % of Europe's coastal bathing waters and 90.2 % of inland bathing waters met the minimum water quality standards set by the bathing water directives. During recent years there has been deterioration in bathing water quality but still more than nine in ten bathing waters meet the minimum quality standards. The share of non compliant bathing waters was 1.2 % for coastal bathing waters and 2.8 % for inland bathing waters. The decrease reflects in part year to year variation but also indicates that further work is necessary to ensure that the quality of bathing waters is constantly improved and maintained.

More information on bathing water quality in the European Member States, including the EU summary report, the reports for 27 Member States, Croatia, Montenegro and Switzerland, can be found on the European Commission's bathing water quality website (http://ec.europa.eu/environment/water/water-bathing/index_en.html) and the European Environment Agency's bathing water website (http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water). The Institute for Water of the Republic of Slovenia (IWRS), a partner in the EEA European Topic Centre on Inland, Coastal and Marine Waters (ETC/ICM) has produced the reports for the bathing seasons from the 2008 bathing season on. Countries have collaborated in the assessment of bathing water quality and supplied additional information when needed.

Interactive information on bathing water quality

The bathing water section of the Water Information System for Europe (WISE), which is accessible at the EEA bathing water website, allows users to view the quality of the bathing water at more than 22 000 coastal beaches and inland sites across Europe. Users can check bathing water quality on an interactive map or can download data for a selected country or region and make comparisons with previous years.

The WISE map viewer (http://www.eea.europa.eu/themes/water/interactive//bathing) is an online map viewer for visualisation of European spatial water data. It includes a lot of interactive layers, allowing water themes to be visualised at different scales. Broad resolutions display the aggregated data by Member State. At finer resolutions the locations of monitoring stations are displayed.

The WISE Bathing Water Quality data viewer (http://www.eea.europa.eu/themes/water/status-and-monitoring/bathing-water-data-viewer) combines text and graphical visualisation, providing a quick check on locations and statistics on the quality of coastal and freshwater bathing waters. It also documents how bathing waters have changed throughout Europe in recent years and provides a full summary of Europe's bathing water quality. Users can search information at three spatial levels - country, region and province - and observe specific bathing water locations on the Google Earth, Google maps or Bing maps.

The Eye On Earth - Water Watch application (http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/eye-on-earth) allows users to zoom in on a given section of the coast, riverbank or lake, both in street map or, where available, bird's eye viewing formats. A 'traffic-light' indicator (red, amber, green) of bathing water quality, based on the official bathing water data, is put alongside the ratings of people who have visited the bathing site, including any comments users wish to make. For historical data Water Watch uses a simplified index of bathing water quality data. The Czech Republic, Estonia, Finland (one municipality), Hungary, Lithuania, Luxembourg, Malta, the Netherlands, Norway (one municipality), Slovenia, Slovakia and England and Wales were also sending near real time

information on bathing water quality to the Eye On Earth application. The bathing water quality from Austria, Belgium, Bulgaria, Croatia, Denmark, France, Germany, Ireland, Italy, Poland, Portugal, Spain, Sweden and Scotland and Northern Ireland was also presented on Eye on Earth Water Watch.

National and local information on bathing water quality

In order to make information to the public more effective, all EU countries have national or local web portals with detailed information for each bathing site. Websites generally include a map search function and public access to the monitoring results both in real time and for previous seasons.

Information on EU bathing water legislation

EU Member States will have to comply with the stricter and more ambitious requirements laid out in Directive 2006/7/EC by 2015 at the latest. The new legislation requires more effective monitoring and management of bathing waters, greater public participation and improved information dissemination. By March 2011 Member States have to have established bathing water profiles. More on the new legislation can be found on the European Commission's websites and on http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF.