Bathing water results 2008 – Finland

1. Introduction

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

During the transition period, samples of Intestinal enterococci and Escherichia coli are reported under the Directive 2006/7/EC, but assessment is done according to the assessment rules of Directive 76/160/EEC. For the conversion of reported parameters under Directive 2006/7/EC, Article 13.3 of the Directive 2006/7/EC foresees that the parameter Escherichia coli, reported under Directive 2006/7/EC, is assumed to be equivalent to the parameter Faecal coliforms of Directive 76/160/EEC. The parameter Intestinal enterococci reported under Directive 2006/7/EC is assumed to be equivalent to the parameter Faecal streptococci. This means that the parameters Intestinal enterococci and Escherichia coli are evaluated according to the guide and mandatory standards defined in the Annex to Directive 76/160/EEC for the parameters Faecal streptococci and Faecal coliforms respectively.

The results are classified in the following categories:

- Compliant with the mandatory value of the Directive 76/160/EEC for Escherichia coli and not compliant with the guide value of the Directive 76/160/EEC for Intestinal enterococci (class CI)
- 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 CG)
- Not compliant with the mandatory value of the Directive 76/160/EEC for Escherichia coli (class NC)
- Banned (temporarily closed) or closed throughout the season (class B)

2. Length of bathing season and number of bathing waters

The bathing season started from 15 to 25 June and ended from 15 to 31 August 2008.

A total of 347 bathing waters were monitored in Finland during the 2008 bathing season, of which 86 were coastal bathing waters and 261 freshwater bathing waters (16 on rivers; 245 on lakes).

With 347 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 Directive 2006/7/EC is presented in Table 1. There is a significant decrease in number of freshwater bathing waters since the start of the reporting from 378 freshwater bathing waters in 1995 to 261 in 2008. There were four less freshwater bathing waters in 2008 than in the previous year. The number of coastal bathing fluctuated between 93 in 1999 and 120 in 2001. There were 14 less coastal bathing waters in 2008 than in the previous year. In total, 27 new bathing waters were added to the list compared to the previous year and 45 were de-listed.

3. Results of bathing water quality

The results of the bathing water quality in Finland for the period 1995-2007 as reported in 2008 report and for the bathing season of 2008 are presented in Figure 1.

The graphs show, for coastal and freshwater 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 (temporarily closed) or closed throughout the season (class B, grey line)

Table 1 and Table 2 show the same information in absolute numbers and in percentages separately for coastal and freshwater bathing waters. Table 3 shows the bathing water quality results for 2008 season in Finland for all bathing waters.

Map 1 shows the location of the reported bathing waters in Finland. The location of the bathing waters is based on the geographic coordinates reported by the Finnish authorities.

Figure 1: Results of bathing water quality in Finland from 1995 to 2008

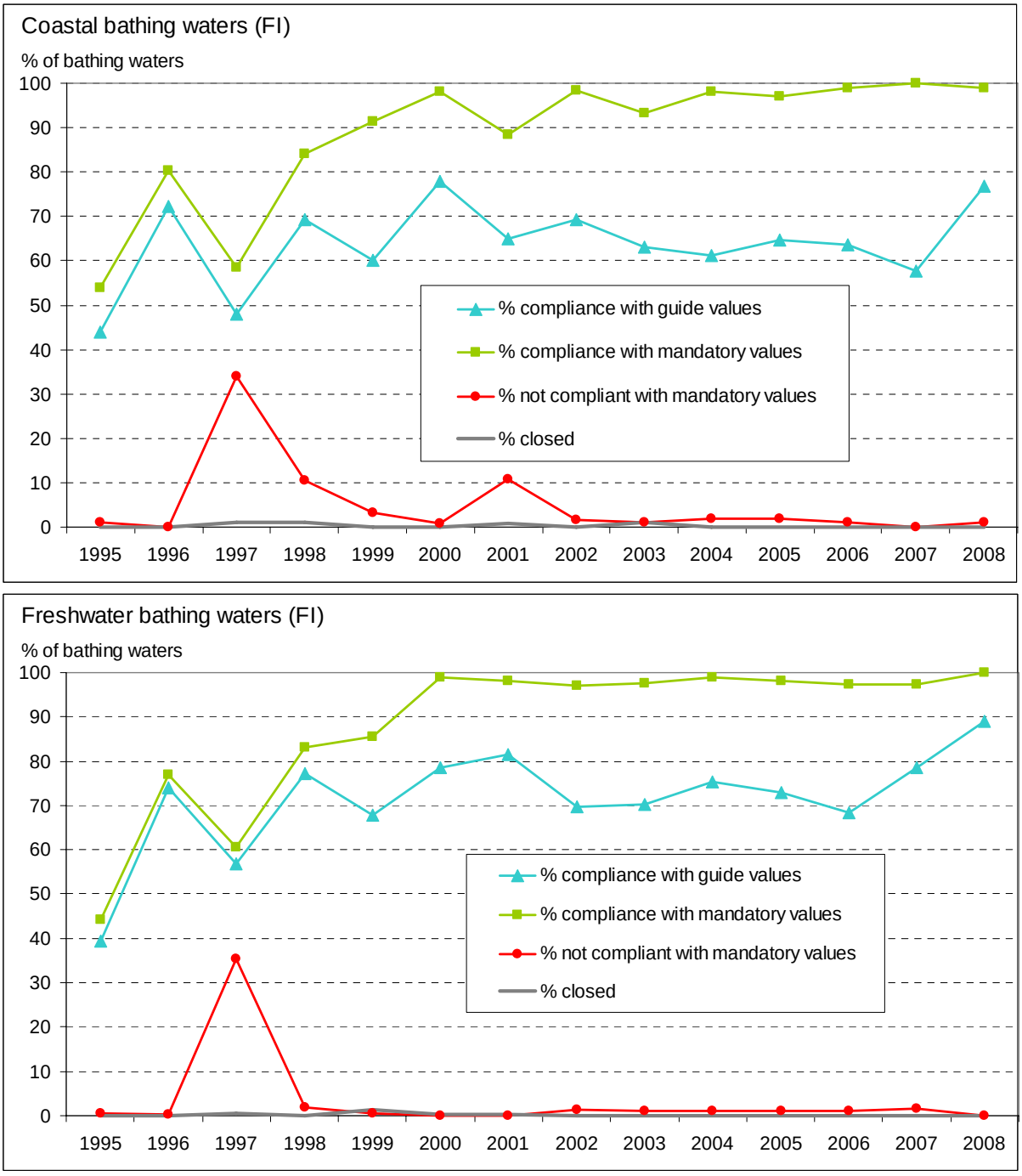


Table 1: Results of bathing water quality in Finland from 1995 to 2008 as absolute numbers

		FI				
		Total number of bathing waters	**Compliance with guide values**	**Compliance with mandatory values**	**Not compliant**	**Banned/ closed throughout the season**
Coastal bathing waters	1995	100	44	54	1	0
	1996	101	73	81	0	0
	1997	94	45	55	32	1
	1998	94	65	79	10	1
	1999	93	56	85	3	0
	2000	113	88	111	1	0
	2001	120	78	106	13	1
	2002	117	81	115	2	0
	2003	103	65	96	1	1
	2004	103	63	101	2	0
	2005	99	64	96	2	0
	2006	99	63	98	1	0
	2007	99	57	99	0	0
	2008	86	66	85	1	0
Fresh-water bathing waters	1995	378	149	167	2	0
	1996	391	289	301	1	0
	1997	360	205	218	127	2
	1998	357	276	297	7	0
	1999	343	233	293	2	5
	2000	332	261	328	0	1
	2001	314	256	308	0	1
	2002	305	213	296	4	0
	2003	292	205	285	3	0
	2004	285	215	282	3	0
	2005	280	204	275	3	0
	2006	274	187	267	3	0
	2007	266	209	259	4	0
	2008	261	232	261	0	0

Note: Bathing waters which were insufficiently sampled or not sampled according to the Bathing Water Directive were not included in this table. Therefore, in some cases, the sum of the different categories will not be equal to the total number of bathing waters.

Table 2: Results of bathing water quality in Finland from 1995 to 2008 as percentages

		FI				
		Total number of bathing waters	**% compliance with guide values**	**% compliance with mandatory values**	**% not compliant**	**% banned/ closed throughout the season**
Coastal bathing waters	1995	100	44.0	54.0	1.0	0.0
	1996	101	72.3	80.2	0.0	0.0
	1997	94	47.9	58.5	34.0	1.1
	1998	94	69.1	84.0	10.6	1.1
	1999	93	60.2	91.4	3.2	0.0
	2000	113	77.9	98.2	0.9	0.0
	2001	120	65.0	88.3	10.8	0.8
	2002	117	69.2	98.3	1.7	0.0

	2003	103	63.1	93.2	1.0	1.0
	2004	103	61.2	98.1	1.9	0.0
	2005	99	64.6	97.0	2.0	0.0
	2006	99	63.6	99.0	1.0	0.0
	2007	99	57.6	100.0	0.0	0.0
	2008	86	76.7	98.8	1.2	0.0
Fresh-water bathing waters	1995	378	39.4	44.2	0.5	0.0
	1996	391	73.9	77.0	0.3	0.0
	1997	360	56.9	60.6	35.3	0.6
	1998	357	77.3	83.2	2.0	0.0
	1999	343	67.9	85.4	0.6	1.5
	2000	332	78.6	98.8	0.0	0.3
	2001	314	81.5	98.1	0.0	0.3
	2002	305	69.8	97.0	1.3	0.0
	2003	292	70.2	97.6	1.0	0.0
	2004	285	75.4	98.9	1.1	0.0
	2005	280	72.9	98.2	1.1	0.0
	2006	274	68.2	97.4	1.1	0.0
	2007	266	78.6	97.4	1.5	0.0
	2008	261	88.9	100.0	0.0	0.0

Note: Bathing waters which were insufficiently sampled or not sampled according to the Bathing Water Directive were not included in this table. Therefore, in some cases, the sum of the different categories will not be equal to the total number of bathing waters.

Table 3: Results of bathing water quality for all bathing waters in Finland in 2008

		FI				
		Total number of bathing waters	**Compliance with guide values**	**Compliance with mandatory values**	**Not compliant**	**Banned/ closed throughout the season**
Bathing waters	2008	347	298	346	1	0

4. Development of bathing water quality

Coastal bathing waters

In Finland, 98.8% of the coastal bathing waters (85) met the mandatory values in 2008. This is a decrease compared to the previous year, when all bathing waters were in compliance with the mandatory values. In 2008, one bathing water (1.2%) was non-compliant with the mandatory value for Escherichia coli. The compliance with the guide values, however, increased by 19.2%, reaching 76.7% of the bathing waters (66). The difference between the percentage of the bathing waters that met the mandatory values and the more stringent guide values decreased, but it still accounts for 22.1%. Since 2004, no coastal bathing water had to be closed during the season.

The compliance rate with the guide values and mandatory values fluctuated strongly between 1995 and 2003. Since 2004, the compliance rate with the mandatory values became fairly stable, reaching close to 100%. The compliance rate with the guide values reached above 70% in 2008 after fluctuating around 60% in the last years.

Freshwater bathing waters

100% of the freshwater bathing waters (261) met the mandatory mandatory water quality in 2008. This is an increase compared to the previous year (+ 2.6%). After a significant increase by 10.3%, the rate of the compliance with the guide values reached 88.9% of the bathing waters (232). The difference

between the percentage of the bathing waters that met the mandatory values and the more stringent guide values decreased to 11.1%. Since 2002, none of the freshwater bathing waters had to be closed during the season.

Overall, the compliance rate increased in the period from 1995 till 2000. The percentages of freshwater bathing waters complying with the mandatory quality values reached a constant level of about 98% since 2000. The percentage of bathing waters compliant with the more stringent guide values was fluctuating between 70 and 80% of the bathing waters since 2000. In 2008, the compliance rate with mandatory value for Escherichia coli and guide vales reached 100% and almost 90% respectively for the first time.

5. General information as provided by the Finnish authorities

Information for the public

In accordance with the circular issued by the Ministry of Social Affairs and Health, the most recent results are displayed at each 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, 95% for phosphorus and 54% for nitrogen. The results of the best plants are even better. A new Governmental Decree on urban wastewater treatment entered into force in November 2006.

Regulations and technologies for rural areas

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, covering also small discharges that may cause pollution of surface waters or groundwater, made it possible to enact a special decree for more strict regulation of onsite wastewater systems and their effluents. The government approved such a decree in June 2003 and it entered into force on January 1, 2004.

The decree includes treatment requirements that are given based on specific person-equivalent load values. The basic reduction requirement is a decrease of 90% of the organic load (BOD_7), 85% of phosphorus and 40% of nitrogen. Somewhat lower reduction values may be used in areas not sensitive for pollution. All new wastewater treatment systems shall meet the new requirements. The decree also covers the wastewater systems in existing houses but because it would have been impossible to carry out the needed improvements simultaneously, the decree includes a provision for a transitional period of ten years.

The Finnish manufacturers have been very active in developing materials and treatment plants that are able or help to fulfil the requirements of the decree. Numerous systems showed good results in a recently finished monitoring project. There were only a few problems with the organic load and slightly more with nitrogen removal. Many methods and package plant types achieved also good results in phosphorus removal, which is usually considered to be difficult for small onsite systems. At present, there is also a research station in Finland with the official status of a notified body for testing small wastewater treatment plants according to the European standard EN 12566-3.

Guidelines for water protection up to 2015

The Finnish environment authorities have recently prepared new guidelines for water protection measures. Several background studies were published in 2006-2007 and a governmental decision-in-

principle on water protection policy outlines to 2015 was accepted. This programme defines actions designed to ensure that Finland`s inland waters, coastal waters and groundwater are in good ecological state, and to prevent any deterioration in their state. The outlines are intended to facilitate the drafting of regional water management plans, and they will also support the EU marine strategy, and the preparation and implementation of a joint action plan for the protection of the Baltic Sea.

6. More information on bathing water quality in the European Union

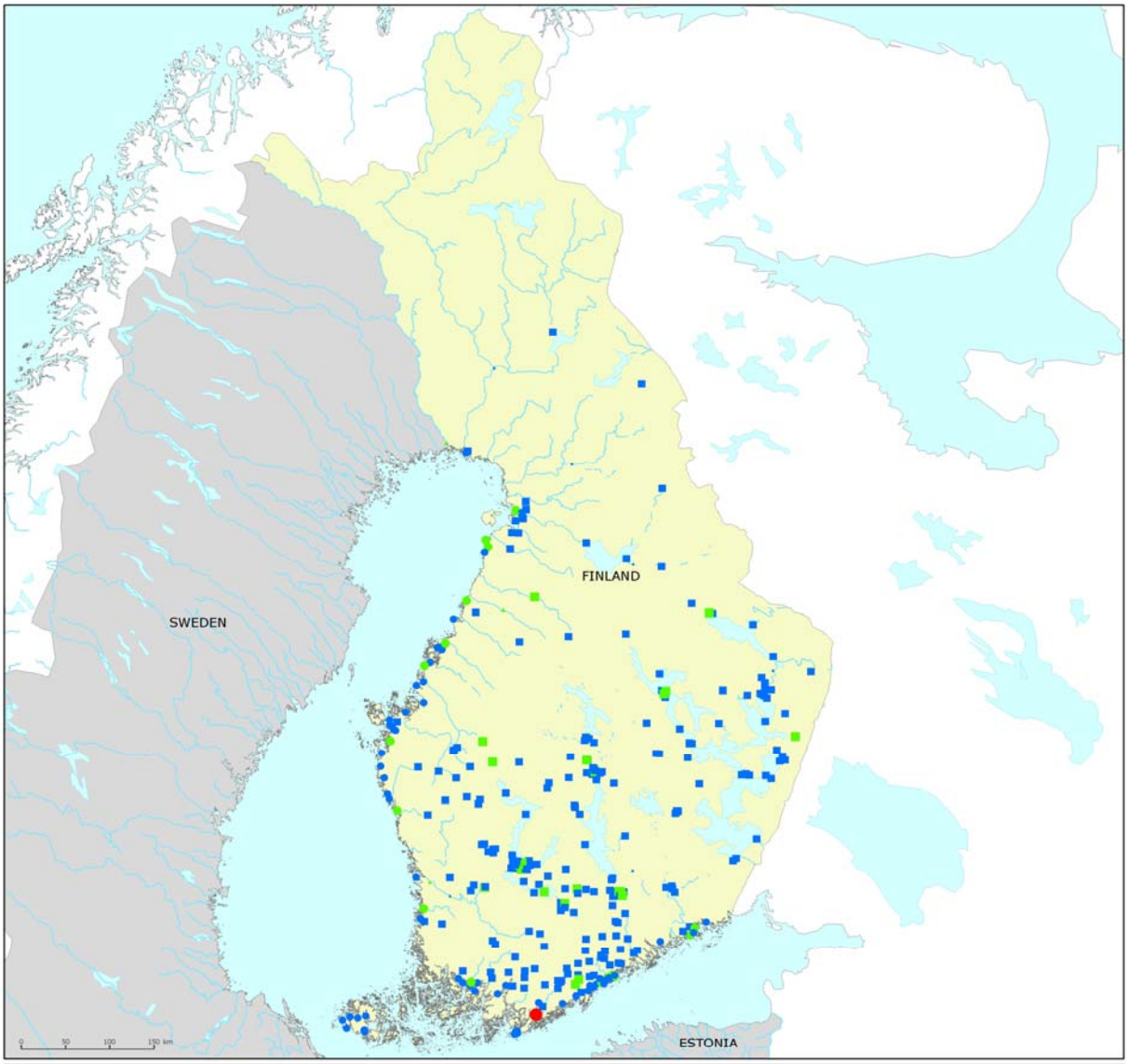
More information on bathing water quality in the European Member States, including the reports for 27 Member States and the EU summary report, can be found on the bathing water quality website (http://ec.europa.eu/environment/water/water-bathing/index_en.html).

By 2015, Member States will have to comply with the stricter and more ambitious requirements laid out in the new Bathing Water Directive (Directive 2006/7/EC). This Directive requires more effective monitoring and management of bathing waters, greater public participation and improved information. More information on the new Directive can be found on the bathing water quality website and on http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF.

Cyprus, Denmark, Estonia, Finland, Germany, Hungary, Latvia, Lithuania, Slovakia, Spain and Sweden started to report according to more stringent new requirements in 2008 bathing season, while Luxembourg already started in 2007 bathing season.

WISE - Water Information System for Europe (www.water.europa.eu) is a gateway to all water related information. Among other water related data, information on individual bathing water quality can be found in the WISE Map viewer and WISE Data viewer through interactive maps and graphs (http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water).

Map 1: Bathing waters reported during the 2008 bathing season in Finland



Note: * banned (temporarily closed) or closed 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