

Bathing water results 2008 – Sweden

1. Introduction

This report gives a general overview of bathing water quality in Sweden during the 2008 bathing season. Sweden 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 on 21 June for most bathing waters and ended on 15 or 20 August 2008 for all of them.

A total of 470 bathing waters were monitored in Sweden during the 2008 bathing season, of which 258 were coastal bathing waters and 212 freshwater bathing waters (5 on rivers; 207 on lakes).

With 470 bathing waters Sweden accounts for about 2.2% 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. The number of coastal bathing waters increased since the start of the reporting from 247 in 1995 to 406 in 2007. There were 148 less coastal bathing waters in 2008 than in the previous year: 10 new bathing waters were added to the list and 158 were de-listed. Similarly, the number of freshwater bathing waters also increased from 353 in 1995 to 441 in 2007. There were 229 less freshwater bathing waters in 2008 than in the previous year: 11 new bathing waters were added to the list and 240 were de-listed.

3. Results of bathing water quality

The results of the bathing water quality in Sweden 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 Sweden for all bathing waters.

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

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

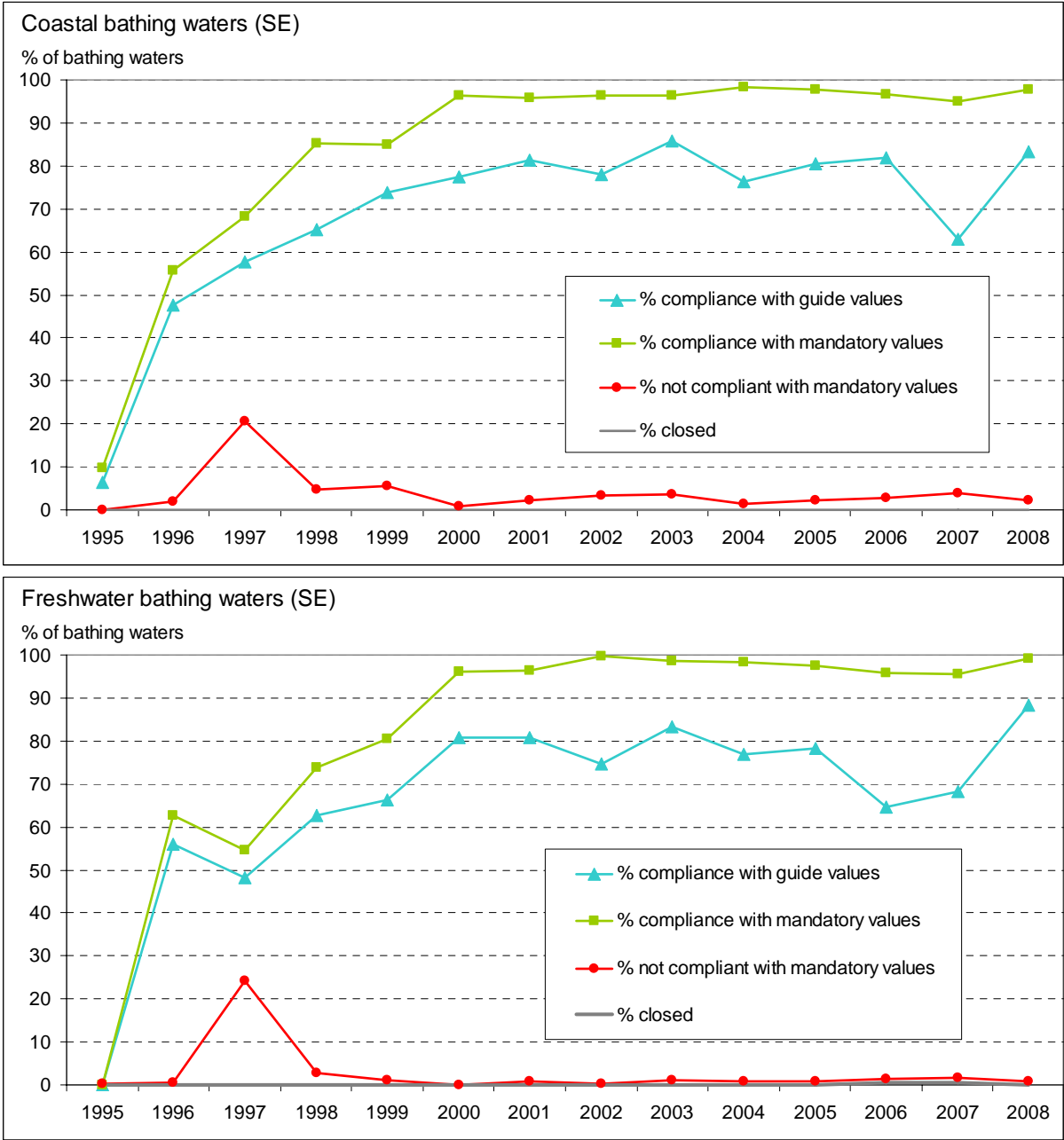


Table 1: Results of bathing water quality in Sweden from 1995 to 2008 as absolute numbers

| | Year | Total number of bathing waters | Compliance with guide values | Compliance with mandatory values | Not compliant | Banned/ closed throughout the season |
|----------------------------|------|--------------------------------|------------------------------|----------------------------------|---------------|--------------------------------------|
| Coastal bathing waters | 1995 | 247 | 16 | 24 | 0 | 0 |
| | 1996 | 388 | 185 | 216 | 8 | 0 |
| | 1997 | 398 | 230 | 272 | 82 | 0 |
| | 1998 | 375 | 244 | 320 | 18 | 0 |
| | 1999 | 377 | 278 | 320 | 21 | 0 |
| | 2000 | 370 | 287 | 357 | 3 | 0 |
| | 2001 | 376 | 306 | 360 | 8 | 0 |
| | 2002 | 379 | 296 | 365 | 13 | 0 |
| | 2003 | 379 | 325 | 365 | 14 | 0 |
| | 2004 | 379 | 289 | 373 | 5 | 0 |
| | 2005 | 379 | 305 | 371 | 8 | 0 |
| | 2006 | 405 | 332 | 392 | 11 | 0 |
| | 2007 | 406 | 256 | 386 | 16 | 0 |
| | 2008 | 258 | 215 | 252 | 6 | 0 |
| Fresh-water bathing waters | 1995 | 353 | 0 | 0 | 1 | 0 |
| | 1996 | 490 | 275 | 307 | 3 | 0 |
| | 1997 | 525 | 253 | 286 | 127 | 0 |
| | 1998 | 465 | 291 | 343 | 13 | 0 |
| | 1999 | 414 | 274 | 333 | 5 | 0 |
| | 2000 | 403 | 325 | 387 | 0 | 0 |
| | 2001 | 398 | 321 | 384 | 3 | 0 |
| | 2002 | 402 | 300 | 401 | 1 | 0 |
| | 2003 | 407 | 339 | 401 | 4 | 0 |
| | 2004 | 415 | 319 | 408 | 3 | 0 |
| | 2005 | 416 | 326 | 406 | 3 | 0 |
| | 2006 | 444 | 287 | 426 | 6 | 3 |
| | 2007 | 441 | 301 | 421 | 7 | 2 |
| | 2008 | 212 | 187 | 210 | 2 | 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 Sweden from 1995 to 2008 as percentages

| | Year | Total number of bathing waters | % compliance with guide values | % compliance with mandatory values | % not compliant | % banned/ closed throughout the season |
|----------------------------|------|--------------------------------|--------------------------------|------------------------------------|-----------------|--|
| Coastal bathing waters | 1995 | 247 | 6.5 | 9.7 | 0.0 | 0.0 |
| | 1996 | 388 | 47.7 | 55.7 | 2.1 | 0.0 |
| | 1997 | 398 | 57.8 | 68.3 | 20.6 | 0.0 |
| | 1998 | 375 | 65.1 | 85.3 | 4.8 | 0.0 |
| | 1999 | 377 | 73.7 | 84.9 | 5.6 | 0.0 |
| | 2000 | 370 | 77.6 | 96.5 | 0.8 | 0.0 |
| | 2001 | 376 | 81.4 | 95.7 | 2.1 | 0.0 |
| | 2002 | 379 | 78.1 | 96.3 | 3.4 | 0.0 |
| | 2003 | 379 | 85.8 | 96.3 | 3.7 | 0.0 |
| | 2004 | 379 | 76.3 | 98.4 | 1.3 | 0.0 |
| | 2005 | 379 | 80.5 | 97.9 | 2.1 | 0.0 |
| | 2006 | 405 | 82.0 | 96.8 | 2.7 | 0.0 |
| | 2007 | 406 | 63.1 | 95.1 | 3.9 | 0.0 |
| | 2008 | 258 | 83.3 | 97.7 | 2.3 | 0.0 |
| Fresh-water bathing waters | 1995 | 353 | 0.0 | 0.0 | 0.3 | 0.0 |
| | 1996 | 490 | 56.1 | 62.7 | 0.6 | 0.0 |
| | 1997 | 525 | 48.2 | 54.5 | 24.2 | 0.0 |
| | 1998 | 465 | 62.6 | 73.8 | 2.8 | 0.0 |
| | 1999 | 414 | 66.2 | 80.4 | 1.2 | 0.0 |
| | 2000 | 403 | 80.6 | 96.0 | 0.0 | 0.0 |
| | 2001 | 398 | 80.7 | 96.5 | 0.8 | 0.0 |
| | 2002 | 402 | 74.6 | 99.8 | 0.2 | 0.0 |
| | 2003 | 407 | 83.3 | 98.5 | 1.0 | 0.0 |
| | 2004 | 415 | 76.9 | 98.3 | 0.7 | 0.0 |
| | 2005 | 416 | 78.4 | 97.6 | 0.7 | 0.0 |
| | 2006 | 444 | 64.6 | 95.9 | 1.4 | 0.7 |
| | 2007 | 441 | 68.3 | 95.5 | 1.6 | 0.5 |
| | 2008 | 212 | 88.2 | 99.1 | 0.9 | 0.0 |

Note: Bathing waters which were insufficiently sampled or not sampled according to the Bathing Water Directive are not included in this table. Therefore, in some cases, the sum of the percentages is not equal to 100%.

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

| | Year | Total number of bathing waters | Compliance with guide values | Compliance with mandatory values | Not compliant | Banned/ closed throughout the season |
|----------------|------|--------------------------------|------------------------------|----------------------------------|---------------|--------------------------------------|
| Bathing waters | 2008 | 470 | 402 | 462 | 8 | 0 |

4. Development of bathing water quality

Coastal bathing waters

In Sweden, 97.7% of the coastal bathing waters (252) were in compliance with the mandatory water quality in 2008. This is an increase compared to the previous year (+ 2.6%). The compliance rate with the more stringent guide values increased strongly, from 63.1% (256) to 83.3% (215 bathing waters). 14.3% less bathing waters met the guide values compared to the mandatory value for Escherichia coli. 2.3% of the bathing waters (6) were non-compliant with the mandatory values compared to 3.9% bathing waters (16) in the previous year. Since the start of reporting in 1995, no coastal bathing water had to be closed during the season.

Until 1999, a large number of bathing waters were insufficiently sampled and could therefore not be taken into account in the water quality assessment. This largely explains the low compliance rate in those years. From 2000 onwards more than 95% of the bathing waters were compliant with the mandatory values. Concerning the more stringent guide values there is a stronger fluctuation in the number of bathing waters that are compliant, although the rate is around 80% of the bathing waters since 2000. Unfortunately, the compliance rate dropped back to 63.1% in 2007. This can be explained by the fact that the summer of 2007 was exceptionally rainy for several areas, which also affected the quality of the bathing waters. In 2008, the compliance rate reached again 80% of the bathing waters.

Freshwater bathing waters

99.1% of the freshwater bathing waters (210) met the mandatory water quality in 2008. This is an increase compared to the previous year (+ 3.6%). The rate of the compliance with the guide values increased significantly by 20%, which is a similar increase as for the coastal waters. 88.2% of the bathing waters (187) met the guide values in 2008, which is 10.8% less compared to the bathing waters compliant with the mandatory value for Escherichia coli. The percentage of not-compliant bathing waters decreased from 1.6% (7) to 0.9% (2 bathing waters). No freshwater bathing water had to be closed during the season compared to two bathing waters in the previous year.

Similar as for the coastal bathing water, until 1999, a large number of bathing waters were insufficiently sampled and could therefore not be taken into account in the water quality assessment. This largely explains the low compliance rate in those years. From 2000 onwards more than 95% of the bathing waters were compliant with the mandatory values, reaching almost 100% in 2002. Since then there has been a slight decrease in the number of compliant bathing waters. A similar evolution can be seen for the number of bathing waters complying with the more stringent guide values, although the fluctuations are more distinct. Before 2008, the highest compliance rate was reached in 2003 with more than 80% of bathing waters complying. Unfortunately since 2004, the level of complying bathing waters has dropped again to a level below 70%. In 2008, the compliance rate reached again more than 80% of the bathing waters. Freshwater bathing waters had to be closed during two bathing seasons only, when accounting for less than 1% of the bathing waters.

5. General information as provided by the Swedish authorities

To the bathing season 2008 Sweden implemented into the Swedish legislation the new Bathing Water Directive 2006/7/EC by regulation SFS 2008:218 and NFS 2008:8 which is now legally binding. The Swedish implementation of the new directive was also informed to the Commission before the start of the bathing season 2008. During the bathing season 2008 the Swedish municipalities sampled their bathing waters according to the Directive 2006/7/EC in order of frequency, parameters etc.

The member states have been asked to set their own limit for "large bathing water". In Sweden it was decided that large bathing water is a place visited by at least 200 bathers per day. The responsible communities were asked to re-register their EU bathing waters in regard of this. 470 bathing water areas were registered with motive (>200 bathers/day), control plan and sampled according to the new rules of the new directive. According to the new directive Sweden has 470 bathing water areas with a large number of bathers, and these bathing areas have been registered with names, coordinates and control plan before the bathing season 2008.

The reported bathing areas has as been sampled according to the new directive given that the maximum days allowed between two samplings are 30 days. The majority of the Swedish counties has a bathing season shorter than 8 weeks which gives an allowed minimum frequency of 3 samples per bathing season.

Non-complying bathing sites

None of the Swedish bathing waters have been prohibited for bathing during the season 2008. At bathing waters that during the bathing season 2008, according to the old directive, got the judgement Non Complying, the municipalities concerned investigate the possible reasons of the bad quality of the bathing water. This could be due to semi permanent or permanent causes such as leaching wastewater from individual households and municipal wastewater treatment plants. The current measures are site-specific and as cost-efficient as possible for the actual area.

Several beaches have problems with pollution of the beach and bathing area from birds, mainly geese, this problem is difficult to control but many municipalities work with measures to reduce the number of birds at the bathing area.

Information to the public

The bathing data for the season are reported to the website "Badplatsen", where the public can consult the latest quality assessments. It is also possible to search for previous years' assessments. This website can be accessed via the home page of the Swedish EPA or of the Swedish Institute for Infectious Disease Control (<http://badplatsen.smittskyddsinstitutet.se>).

Waste water treatment

Most Swedish households are connected to a sewage treatment plant. The majority of such plants have both a chemical and biological treatment stage, but do not generally perform disinfection.

Treatment of diffuse pollution sources

Considerable efforts are made to monitor the maintenance of private cesspools and to ensure that an increasing number of them are connected to a treatment plant. Sweden historically used to have a large number of wetland areas, which played an important part in reducing nutrient and bacteria loads to nearby watercourses. Many of these wetlands have been drained, in the post war decades but now new ones are being established in some parts of the country in order to reduce pollution from non-point sources. Several bathing areas have problems with pollution caused by birds, mainly geese, a source of contamination, which can be difficult to control.

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 Sweden

