



Bathing water results 2011 – Switzerland

1. Reporting and assessment

This report gives a general overview of bathing water quality in Switzerland during the 2011 bathing season. Switzerland has reported under the Directive 2006/7/EC since 2009 and sent historical data with two parameters of this Directive for some bathing waters for the years 2007-2008.

Samples of *Escherichia coli* were reported for almost all bathing waters (349 out of 352), while samples of intestinal enterococci were reported for 272 bathing waters. The overall quality assessment for Switzerland is done using limit values for *Escherichia coli* since only 40.9 % of reported bathing waters (144) satisfied the transition period assessment rules (both parameters, sampling frequency criteria) in 2011. Assessment under the Directive 2006/7/EC is possible only for 23.9 % of reported bathing waters (84) with samples of *Escherichia coli* and intestinal enterococci available for the period 2008-2011.

Assessment using limit values for *Escherichia coli*

For each bathing water, the maximum concentration of reported samples for *Escherichia coli* is considered. Sampling frequency criteria under the transition period assessment are not taken into the account.

The results are classified in the following categories:

- **Class CI:** Compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli*;
- **Class CG:** Compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli* and the more stringent guide value for the *Escherichia coli*;
- **Class NC:** Not compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli*;
- **Class B:** Banned or closed;
- **Class NS:** Not sampled.

Assessment during the transition period

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;
- **Class NF:** Insufficiently sampled;
- **Class NS:** Not sampled.

The frequency of sampling is set out in Annex IV of the Directive 2006/7/EC. Including a sample to be taken shortly before the start of the bathing season, the minimum number of samples taken per bathing season is four. However, only three samples are sufficient when the bathing season does not exceed

eight weeks or the region is subject to special geographical constraints. Sampling dates are to be distributed throughout the bathing season.

Strictly speaking, there should be one pre-season sample and the interval between sampling should not exceed one month. Since a late start of monitoring and/or low frequency do not necessarily indicate unsatisfactory bathing water quality, it has been accepted that the first sample in the 2011 season could be taken shortly after the start of the season (but within 10 days after the start), and the maximum interval between two samples taken into account is 41 days. These criteria are described as less strict. In this report a compliance class under the strict rules and less strict criteria are presented.

Assessment under Directive 2006/7/EC

When samples of intestinal enterococci and *Escherichia coli* for bathing water are available for three or four consecutive years, the assessment is done according to assessment rules of Directive 2006/7/EC.

Since a late start of monitoring and/or low frequency do not necessarily indicate unsatisfactory bathing water quality, it has been accepted that the first sample in the 2011 season could be taken shortly after the start of the season (but within 10 days after the start), and the maximum interval between two samples taken into account is 41 days. The number of samples for the period 2008-2011 should be at least 16. These criteria are described as less strict. In the opposite, under the strict rules, pre-season samples should be available in all four years, the interval between sampling in the 2011 season should have not exceeded one month, but 41 days were acceptable for the 2008, 2009 and 2010 seasons. In this report a quality class under the less strict criteria is presented. Under the strict rules only two bathing waters could be evaluated.

Bathing waters quality classified according to the Directive 2006/7/EC are 'excellent', 'good', 'sufficient' and 'poor'. Some bathing waters cannot be classified according to their quality but are instead classified as 'closed', 'new' (classification not yet possible), 'insufficiently sampled' or 'changes' (bathing water is not new and classification not yet possible since a set of monitoring data is incomplete).

2. Length of bathing season and number of bathing waters

The bathing season opened between 1 May and 1 July 2011 and closed between 15 August and 30 September 2011.

A total of 352 inland bathing waters (64 on rivers; 288 on lakes) were reported in Switzerland during the 2011 bathing season. There are no coastal bathing waters in Switzerland. A total of 10 bathing waters were reported as de-listed (permanently closed) compared to the previous year and three bathing waters were added to the list.

3. Bathing water quality

The results of the bathing water quality in Switzerland for the period 2009-2010 as reported in the past reporting years and for the bathing season of 2011 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/ Bathing Water/ 2005-2011 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 2009 and 2010 bathing seasons).

The graph shows the classification using limit values for *Escherichia coli* for inland bathing waters (left bars):

- The percentage of bathing waters that comply with the guide value for *Escherichia coli* (class CG, blue bar);
- The percentage of bathing waters that comply with the mandatory value for *Escherichia coli* (class CI, green bar);
- The percentage of bathing waters that do not comply with the mandatory value for *Escherichia coli* (class NC, red bar);
- The percentage of bathing waters that are banned or closed (class B, grey bar).

Table 1a shows the same information in absolute numbers and in percentages for inland and all bathing waters from 2009 on. The numbers and percentages of not sampled bathing waters are also presented.

The same graph shows the classification during transition period for inland bathing waters (right bars):

- The percentage of bathing waters that comply with the guide values (class CG, blue bar);
- The percentage of bathing waters that comply with the mandatory value for *Escherichia coli* (class CI, green bar);
- The percentage of bathing waters that do not comply with the mandatory value for *Escherichia coli* (class NC, red bar);
- The percentage of bathing waters that are banned or closed (class B, grey bar).

Table 1b shows the same information in absolute numbers and in percentages for inland and all bathing waters from 2009 on. The numbers and percentages of insufficiently sampled or not sampled bathing waters are also presented. For the year 2010 results applying the less strict rules are presented if they differ from results applying the strict rules.

A map given in Appendix 1 shows the location and quality of the bathing waters according to transition period assessment.

As shown in Table 1a, 98.6 % of the inland bathing waters met the mandatory value for *Escherichia coli* in 2011 according to assessment using limit values for *Escherichia coli*. This is an increase of 3.8 % compared to the previous year. The rate of compliance with the guide value for *Escherichia coli* decreased from 65.6 % to 63.4 %. The number of bathing waters non-compliant with the mandatory value for *Escherichia coli* decreased from 15 (3.9 %) to two (0.6 %) bathing waters. No bathing waters had to be closed during the bathing season, the same as in 2010. Three bathing waters (0.9 %) were not sampled compared to five (1.3 %) in 2010.

As shown in Table 1b, 40.3 % of the inland bathing waters met the mandatory water quality in 2011 according to transition period assessment. This is an increase of 17.6 % compared to the previous year. The rate of compliance with the guide values increased from 21.6 % to 37.2 %. Two bathing waters (0.6 %) were non-compliant with the mandatory value for *Escherichia coli* compared to none (0.0 %) in 2010. No bathing waters had to be closed during the bathing season, the same as in 2010. A total of 208 bathing waters (59.1 %) were insufficiently sampled or not sampled compared to 297 (77.3 %) in 2010.

For comparison since the start of the reporting please see Figure 1.

Some 23.3 % of the inland bathing waters (82) were of excellent quality in 2011 according to assessment under the Directive 2006/7/EC. One bathing water (0.3 %) was of good quality and one bathing water (0.3 %) was of sufficient quality. No bathing waters had poor quality (0.0 %) and no bathing waters had to be closed during the bathing season. A total of 234 bathing waters (66.5 %) were insufficiently sampled, 15 bathing waters (4.3 %) were classified as new bathing waters and 19 bathing waters (5.4 %) were classified as bathing waters with changes.

Figure 1: Results of bathing water quality in Switzerland from 2009 to 2011. Assessment using limit values for *Escherichia coli* (left) and assessment during transition period (right).

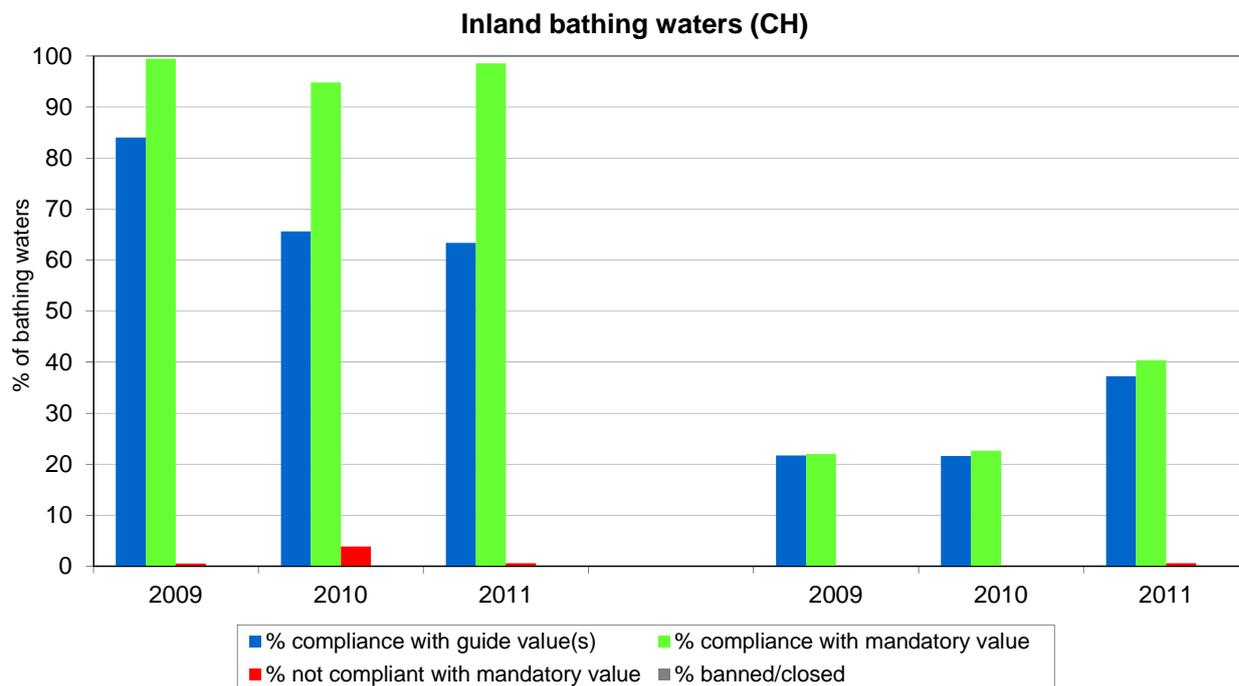


Table 1a: Results of bathing water quality in Switzerland from 2009 to 2011. Assessment using limit values for *Escherichia coli* and no frequency checked.

CH												
		Total number of bathing waters	Compliance with guide and mandatory value*		Compliance with mandatory value		Not compliant		Banned/closed		Not sampled	
			number	%	number	%	number	%	number	%	number	%
Coastal bathing waters	2008											
	2009											
	2010											
	2011											
Inland bathing waters	2008											
	2009	382	321	84.0	380	99.5	2	0.5	0	0.0	0	0.0
	2010**	384	252	65.6	364	94.8	15	3.9	0	0.0	5	1.3
	2011	352	223	63.4	347	98.6	2	0.6	0	0.0	3	0.9
All bathing waters	2008											
	2009	382	321	84.0	380	99.5	2	0.5	0	0.0	0	0.0
	2010**	384	252	65.6	364	94.8	15	3.9	0	0.0	5	1.3
	2011	352	223	63.4	347	98.6	2	0.6	0	0.0	3	0.9

*Bathing waters which were compliant with the guide value for *Escherichia coli* were also compliant with the mandatory value for *Escherichia coli*.

**Changes after official report for the 2010 bathing season.

Table 1b: Results of bathing water quality in Switzerland from 2009 to 2011. Assessment during transition period.

CH												
		Total number of bathing waters	Compliance with guide and mandatory values*		Compliance with mandatory value		Not compliant		Banned/closed		Insufficiently sampled or not sampled	
			number	%	number	%	number	%	number	%	number	%
Coastal bathing waters	2008											
	2009											
	2010											
	2011											
	2011 ^(s)											
Inland bathing waters	2008											
	2009	382	83	21.7	84	22.0	0	0.0	0	0.0	298	78.0
	2010**	384	83	21.6	87	22.7	0	0.0	0	0.0	297	77.3
	2011	352	131	37.2	142	40.3	2	0.6	0	0.0	208	59.1
	2011 ^(s)	352	115	32.7	126	35.8	2	0.6	0	0.0	224	63.6
All bathing waters	2008											
	2009	382	83	21.7	84	22.0	0	0.0	0	0.0	298	78.0
	2010**	384	83	21.6	87	22.7	0	0.0	0	0.0	297	77.3
	2011	352	131	37.2	142	40.3	2	0.6	0	0.0	208	59.1
	2011 ^(s)	352	115	32.7	126	35.8	2	0.6	0	0.0	224	63.6

*Bathing waters which were compliant with the guide values were also compliant with the mandatory value for *Escherichia coli*.

**Changes after official report for the 2010 bathing season.

^(s)Strict rules applied (see Chapter 1 of this report).

4. Important information as provided by the Swiss authorities

The Swiss authorities have reported for some bathing waters also significant management measures and reasons for changes (Table 2). In Table 2 short-term pollution duration is also given.

Table 2: Information on management measures and reasons for changes for the 2011 season as reported by the Swiss authorities

Unique Identification Code of Bathing Water	Bathing Water Name	River Basin District	Bathing Water Category	Short term pollution, Comments/Measurement measures
CH1005	Strandbad	Rhine	lake	2011-08-10 - 2011-08-30; no closure despite proliferation of cyanobacteria (see ShortTermPolut); bathing is still recommended
CH1006	Jugendherberge	Rhine	lake	2011-08-10 - 2011-08-30; no closure despite proliferation of cyanobacteria (see ShortTermPolut); bathing is still recommended
CH1007	Strandbad	Rhine	lake	2011-08-10 - 2011-08-30; no closure despite proliferation of cyanobacteria (see ShortTermPolut); bathing is still recommended
CH1008	Campingplatz Naturfreunde	Rhine	lake	2011-08-10 - 2011-08-30; no closure despite proliferation of cyanobacteria (see ShortTermPolut); bathing is still recommended
CH1009	Campingplatz TCS	Rhine	lake	2011-08-10 - 2011-08-30; no closure despite proliferation of cyanobacteria (see ShortTermPolut); bathing is still recommended
CH1013	Strandbad	Rhine	lake	2011-08-10 - 2011-08-30; no closure despite proliferation of cyanobacteria (see ShortTermPolut); bathing is still recommended
CH1014	Zeltklub Zürich	Rhine	lake	2011-08-10 - 2011-08-30; no closure despite proliferation of cyanobacteria (see ShortTermPolut); bathing is still recommended
CH1015	Aabach (ARA)	Rhine	lake	2011-08-10 - 2011-08-30; no closure despite proliferation of cyanobacteria (see ShortTermPolut); bathing is still recommended
CH1016	Strandbad	Rhine	lake	2011-08-10 - 2011-08-30; no closure despite proliferation of cyanobacteria (see ShortTermPolut); bathing is still recommended
CH1067	Badeplatz Rohr	Rhine	lake	2011-08-10 - 2011-08-30; new BW Site; no closure despite proliferation of cyanobacteria (see ShortTermPolut); bathing is still recommended
CH21001	Laghetto Astano	Po	lake	2011-07-14 - 2011-09-08; weather conditions; presence of wild birds

Unique Identification Code of Bathing Water	Bathing Water Name	River Basin District	Bathing Water Category	Short term pollution, Comments/Measurement measures
CH21002	Campeggio Golfo del Sole	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21003	Campeggio La Palma	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21004	Campeggio Molinazzo	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21005	Campeggio Tropical	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21006	Lido comunale Agno	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21007	Lido Crsoro	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21010	Ristorante Chalet San Giorgio	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21011	Ristorante Lido Capolago	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21013	Foce Magliasina	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21015	Albergo Villa Castagnola	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21016	Bagno pubblico Riva Caccia	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21018	Hotel Lido Seegarten	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21019	Lido Bagno Spiaggia Lugano	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21023	Bagno spiaggia Magliaso	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21024	Casa di cura Rivabella	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21025	Evangelisches Zentrum	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21026	Stiftung Zuercher Ferienkolonien	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21027	Lido Comunale Maroggia	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21028	Campeggio Paradiso	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21029	Campeggio Pedemonte	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21030	Garni Biodola	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21031	Lido Comunale Melano	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21036	Lido comunale Melide	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21037	Zona giardino pubblico	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21038	Zona Orino	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21039	Zona Pianroncate	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21043	Campeggio Touring Club	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21048	Lido comunale Riva S. Vitale	Po	lake	2011-07-14 - 2011-07-21; weather conditions
CH21055	Casa Moscia	Po	lake	2011-07-11 - 2011-08-11; weather conditions
CH21074	Campeggio Campofelice	Po	lake	2011-07-11 - 2011-08-11; weather conditions
CH21075	Campeggio Lago Maggiore	Po	lake	2011-07-11 - 2011-08-11; weather conditions

Unique Identification Code of Bathing Water	Bathing Water Name	River Basin District	Bathing Water Category	Short term pollution, Comments/Measurement measures
CH21080	Campeggio Verbano	Po	lake	2011-07-11 - 2011-08-11; weather conditions
CH21081	Centro sportivo DNS	Po	lake	2011-07-11 - 2011-08-11; weather conditions
CH1010	ehem. Camping Delta	Rhine	lake	Permanent closure of bathing water site due to closure of camping area
CH1011	ehem. Camping Pfahlbau	Rhine	lake	Permanent closure of bathing water site due to closure of camping area
CH1012	ehem. Camping Uessikon	Rhine	lake	Permanent closure of bathing water site due to closure of camping area
CH1068	Stirnseite Zürich	Rhine	lake	New BW Site; no proliferation of cyanobacteria during recent years
CH1069	Stirnseite Opfikon	Rhine	lake	New BW Site; no proliferation of cyanobacteria during recent years
CH20020	Badeplatz	Rhine	lake	The measuring site is merged with CH20021 (update of bathing water list)
CH20028	Rheinklingen	Rhine	river	Permanent closure: The site is not fit for bathing (update of bathing water list)
CH20029	Rosenweiher	Rhine	lake	Permanent closure: The site is not fit for bathing (update of bathing water list)
CH20030	Leutswil	Rhine	river	Permanent closure: The site is not fit for bathing (update of bathing water list)
CH20031	Rorerbrücke	Rhine	river	Permanent closure: The site is not fit for bathing (update of bathing water list)
CH20032	Schwimmbad	Rhine	river	Permanent closure: The site is not fit for bathing (update of bathing water list)
CH20033	Schwimmbad	Rhine	river	Permanent closure: The site is not fit for bathing (update of bathing water list)
CH1022	Brücke mitte	Rhine	river	No proliferation of cyanobacteria during recent years
CH1023	Oetwilerbrücke	Rhine	river	No proliferation of cyanobacteria during recent years
CH1024	Drahtschmidli	Rhine	river	No proliferation of cyanobacteria during recent years
CH1025	Hönggerwehr	Rhine	river	No proliferation of cyanobacteria during recent years
CH1028	Strandbad	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1029	Strandbad	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1030	Strandbad Auslikon	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1031	Badeplatz	Rhine	river	No proliferation of cyanobacteria during recent years
CH1032	Badeplatz	Rhine	river	No proliferation of cyanobacteria during recent years
CH1033	Campingplatz	Rhine	river	No proliferation of cyanobacteria during recent years
CH1034	Badeplatz	Rhine	river	No proliferation of cyanobacteria during recent years
CH1035	Campingplatz	Rhine	river	No proliferation of cyanobacteria during recent years
CH1036	Brücke	Rhine	river	No proliferation of cyanobacteria during recent years
CH1037	Campingplatz	Rhine	river	No proliferation of cyanobacteria during recent years
CH1038	Campingplatz	Rhine	river	No proliferation of cyanobacteria during recent years
CH1042	Badeanstalt Winkel	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1043	Badeanstalt Wyden	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1044	Badeanstalt Steinrad	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1045	Badeanstalt Feldbach	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1046	Badeanstalt Käpfnach	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1047	Parkbad Seerose	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1048	Badeanstalt	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1049	Kusenbad	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1050	Strandbad	Rhine	lake	No proliferation of cyanobacteria during recent years

Unique Identification Code of Bathing Water	Bathing Water Name	River Basin District	Bathing Water Category	Short term pollution, Comments/Measurement measures
CH1051	Badeanstalt	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1052	Badeanstalt Dorf	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1053	Badeanstalt Feldmeilen	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1054	Badeanstalt Ländeli	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1055	Badeanstalt	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1056	Badeanstalt	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1057	Badeanstalt	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1058	Seebad Lattenberg	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1059	Badeanstalt Uerikon	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1060	Kehlhof	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1061	Strandbad Bürger	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1062	Badeanstalt Ludretikon	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1063	Badeanstalt	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1064	Seebad Dorf	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1065	Strandbad Reitliau	Rhine	lake	No proliferation of cyanobacteria during recent years
CH1066	Badeanstalt	Rhine	lake	No proliferation of cyanobacteria during recent years

Links to websites of some cantons with information on bathing water quality are as follows:

-Solothurn: www.lmk.so.ch/badegewaesser

-Ticino: <http://www4.ti.ch/dss/dsp/lc/settori-di-attivita/attivita-ispettive/stabilimenti-balneari/spiagge-organizzate/>

-Vaud: <http://www.vd.ch/fr/themes/environnement/eau/eau-de-baignade/lac-leman/>;

<http://www.vd.ch/fr/themes/environnement/eau/eau-de-baignade/lac-de-joux/>;

<http://www.vd.ch/fr/themes/environnement/eau/eau-de-baignade/lac-de-neuchatel/>;

<http://www.vd.ch/fr/themes/environnement/eau/eau-de-baignade/lac-de-morat/>

New national recommendations on bathing water quality monitoring by 2013

Since the nineteen sixties, efforts have been made in Switzerland to protect the health of bathers by the hygiene assessment of lake and river baths. In 1991, recommendations for the hygiene assessment of lake and river bathing water were issued, based largely on the EU Directive of 1976 (Directive 76/160/EEC). See:

[http://www.bag.admin.ch/themen/lebensmittel/04858/04864/04904/04937/index.html?lang=de](http://www.bag.admin.ch/themen/lebensmittel/04858/04864/04904/04937/index.html?lang=de;);

(available in German and French).

These recommendations are currently being updated in order to account for the recent developments in practical implementation of hygiene assessments of natural bathing waters, and particularly also in order to increase compatibility with the new EU Directive 2006/7/EC.

Important amendments will include the choice of parameters to be measured (*E. Coli* and Enterococci) as well as the sampling frequency (minimum once per month). In this way the responsible authorities on national level (Federal Office for the Environment, Federal Office of Public Health) together with the authorities responsible for monitoring and practical implementation (cantonal laboratories and water protection agencies) aim to not only align with the state of the art in bathing water quality assessment, but at the same time also to achieve better compliance with the EU law (see e.g. Chapter 1 of this report).

The new recommendations are planned to be published by spring 2013, in time for implementation at the start of the bathing season 2013.

Several cantons which have until present not participated in the European bathing water quality reporting have announced to implement a monitoring and reporting scheme on the basis of the forthcoming updated recommendations. It is therefore foreseen that the number, as well as the reporting quality, of bathing waters in Switzerland will increase in the near future.

5. More information on bathing water quality in Europe

Of the more than 21 000 bathing areas monitored throughout the European Union in 2011, two thirds were in coastal waters and the rest in rivers and lakes. The largest numbers of coastal bathing waters can be found in Italy, Greece, France and Spain, while Germany and France have the highest numbers of inland bathing waters.

During recent years, including the 2011 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. Austria, Belgium - Walloon Region, France, Greece, Italy, Portugal and Slovenia reported under the new directive for the first time in 2010, while Belgium - Flemish Region, Bulgaria, Ireland and Poland reported under this Directive for the first time in 2011. Historical data of two microbiological parameters, *Escherichia coli* and intestinal enterococci were sent by Sweden (2005-2007), Luxembourg (2006), Malta (2006-2008), Belgium - Walloon Region (2007-2009), Belgium - Flemish Region (2008-2010), Greece (2007-2009), Hungary (2007) and Portugal (2007-2009).

Three non-EU countries, Croatia, Montenegro and Switzerland have reported monitoring results under the new directive. Croatia and Switzerland started to report in 2009, while Montenegro reported for the first time in 2010. Switzerland sent data on *Escherichia coli* for all bathing waters but only for some data on intestinal enterococci.

For the 2011 season, bathing water quality has been assessed under the new bathing water directive in 16 European countries. This is 13 more than for 2010 bathing season. Only three countries - the Czech Republic, Romania and the United Kingdom - are still assessed under the old bathing water directive. Eleven countries are assessed under the transition period rules.

Overall in 2011, 92.1 % of bathing waters in the EU met the minimum water quality standards set by the bathing water directives. Bathing water quality increased at 0.6 % of sites in 2011 compared to 2010. The proportion of bathing waters with excellent quality (or complying with the more stringent guide values) increased by 3.5 percentage points compared to 2010, reaching 77.1 %. The share of non-compliant bathing waters was 1.8 %, which was a 0.1 percentage point increase from 2010. In 2011, 207 bathing waters were banned or closed (1 %), which was 57 more than in the 2010 bathing season.

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 bathing water quality 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 visualising 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 inland 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 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 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 added by users. For historical data Water Watch uses a simplified index of bathing water quality data. The Czech Republic, Croatia, Denmark, Estonia, Finland (one municipality), Greece, Hungary, Lithuania, Luxembourg, Malta, Slovakia, Slovenia, England and Wales were also sending near real time information on bathing water quality to the Eye on Earth application. The bathing water quality for Austria, Belgium, Bulgaria, France, Germany, Iceland, Italy, Ireland, the Netherlands, Portugal, Sweden, Scotland and Northern Ireland was also presented on the 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 water. 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>.

Appendix 1

Map 1: Bathing waters reported during the 2011 bathing season in Switzerland

