

# Bathing water results 2010 - Luxembourg

### 1. Reporting and assessment

This report gives a general overview of bathing water quality in Luxembourg for the 2010 bathing season. Luxemburg has monitored under the Directive 2006/7/EC since 2006, while reported under this Directive in 2007 for the first time.

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. The frequency of sampling is set out in Annex IV of the Directive. 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, with the interval between sampling dates never exceeding one month.

In the assessment of bathing water quality in 2010 the two rules in regard to sampling frequency are considered in the assessment of the monitoring results in the 2010 bathing season. 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 graph results applying the less strict rules are presented.

To assess bathing water under the Directive 2006/7/EC in 2010, four (or three if bathing season shorter than eight weeks) samples per season must be available for the 2007, 2008, 2009 and 2010 bathing seasons.

Bathing waters assessed according to the Directive 2006/7/EC are classified as 'excellent', 'good', 'sufficient' and 'poor' quality. Some bathing waters cannot be classified according to their quality but are instead classified as 'closed' (temporarily or throughout the bathing season), '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

For all bathing waters the bathing season lasted four months, from 1 May to 31 August 2010.

Since the start of reporting in 1990, a total of 20 bathing waters were monitored in Luxembourg, all inland bathing waters on rivers. Luxembourg has no coastal bathing waters.

With 20 bathing waters Luxemburg accounts for about 0.1 % of the reported bathing waters of the European Union.

### 3. Bathing water quality

The results of the bathing water quality in Luxembourg for the period 1990-2009 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 (<a href="http://ec.europa.eu/environment/water/water-bathing/index\_en.html">http://ec.europa.eu/environment/water/water-bathing/index\_en.html</a>; Water and Health/Bathing Water/2005-2010 reports) and the European Environment Agency's bathing water website (<a href="http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water">http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water</a>; reports for the 2008 and 2009 bathing seasons).

The graph shows the classification under the Directive 76/160/EEC and during transition period, for inland bathing waters from 1990 to 2008:

- 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 for inland bathing waters. The numbers and percentages of insufficiently sampled or not sampled bathing waters are also presented.

The same graph shows the classification under the Directive 2006/7/EC, for inland bathing waters for 2009 and 2010:

- The percentage of bathing waters that have excellent quality (dark blue bar);
- The percentage of bathing waters that have good quality (light blue bar);
- The percentage of bathing waters that have sufficient quality (green bar);
- The percentage of bathing waters that have poor quality (red bar);
- The percentage of bathing waters that are temporarily closed or closed throughout the season (grey bar);
- The percentage of bathing waters that are insufficiently sampled (orange bar).

Table 2 shows the same information in absolute numbers and in percentages for inland bathing waters.

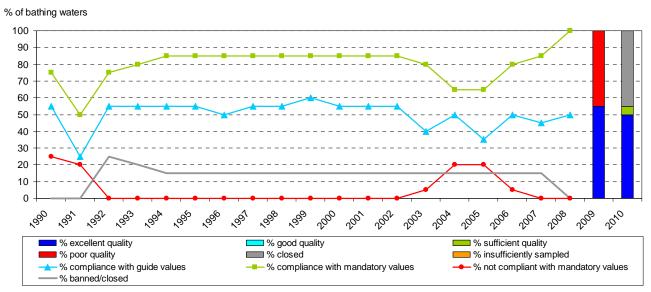
Map 1 shows the location of the reported bathing waters in Luxembourg. The results applying the less strict rules are presented. In addition, insufficiently sampled bathing waters by the strict rules are presented as an orange outline. The location of the bathing waters is based on the geographic coordinates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

In Luxembourg, 50 % of the inland bathing waters were of excellent quality in 2010. This is a decrease of 5 % compared to the previous year. No bathing water was of poor quality compared to nine bathing waters (45 %) in 2009. These bathing waters were closed during the season in 2010. One bathing site (5 %) was insufficiently sampled.

The Luxembourg authorities sent additional information for one location that changed the statistics. The final results are as follows: Some 50 % of the inland bathing waters were of excellent quality and one bathing site (5 %) was of sufficient quality in 2010. No bathing water was of poor quality and no bathing water was insufficiently sampled. Nine bathing waters (45 %) were closed during the season after being of poor quality in 2009.

Figure 1: Results of bathing water quality in Luxembourg from 1990 to 2010

### Inland bathing waters (LU)



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

Table 1: Results of bathing water quality in Luxembourg from 1990 to 2008.

LU												
		Total number of bathing	number guide manda		e and mandatory		Not compliant		Banned/closed temporarily or throughout the season		Insufficiently sampled or not sampled	
		waters	number	%	number	%	number	%	number	%	number	%
Inland bathing waters	1990	20	11	55.0	15	75.0	5	25.0	0	0.0	0	0.0
	1991	20	5	25.0	10	50.0	4	20.0	0	0.0	6	30.0
	1992	20	11	55.0	15	75.0	0	0.0	5	25.0	0	0.0
	1993	20	11	55.0	16	80.0	0	0.0	4	20.0	0	0.0
	1994	20	11	55.0	17	85.0	0	0.0	3	15.0	0	0.0
	1995	20	11	55.0	17	85.0	0	0.0	3	15.0	0	0.0
	1996	20	10	50.0	17	85.0	0	0.0	3	15.0	0	0.0
	1997	20	11	55.0	17	85.0	0	0.0	3	15.0	0	0.0
	1998	20	11	55.0	17	85.0	0	0.0	3	15.0	0	0.0
	1999	20	12	60.0	17	85.0	0	0.0	3	15.0	0	0.0
	2000	20	11	55.0	17	85.0	0	0.0	3	15.0	0	0.0
	2001	20	11	55.0	17	85.0	0	0.0	3	15.0	0	0.0
	2002	20	11	55.0	17	85.0	0	0.0	3	15.0	0	0.0
	2003	20	8	40.0	16	80.0	1	5.0	3	15.0	0	0.0
	2004	20	10	50.0	13	65.0	4	20.0	3	15.0	0	0.0
	2005	20	7	35.0	13	65.0	4	20.0	3	15.0	0	0.0
	2006	20	10	50.0	16	80.0	1	5.0	3	15.0	0	0.0
	2007	20	9	45.0	17	85.0	0	0.0	3	15.0	0	0.0
	2008	20	10	50.0	20	100.0	0	0.0	0	0.0	0	0.0

\*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 (1990-2005) or the mandatory value for *Escherichia coli* (2006-2008).

Table 2: Results of bathing water quality in Luxembourg for 2009 and 2010. Assessment under Directive 2006/7/EC.

LU												
		Total number of bathing	Excellent quality		Good quality Sufficient quality		Poor quality		Closed temporarily or throughout the season		Insufficiently sampled	
		waters		%	number	%	number	%	number	%	number	%
Inland bathing waters	2009	20	11	55.0	Good: 0	0	9	45.0	0	0	0	0
					Suff.: 0	0						
	2010*	20	10	50.0	Good: 0	0	0	0	9	45.0	0, (1)	0, (5)
					Suff.: 1, (0)	5,(0)						
	2010	20	7	35.0	Good: 0	0	0	0	9	45.0	2 (4)	15 (20)
					Suff.: 1, (0)	5,(0)					3, (4)	

<sup>\*</sup>Less strict rules applied (41 days taken as a maximum difference between two samples for reporting under Directive 2006/7/EC).

# 4. Important information as provided by the Luxembourg authorities

#### Monitoring and analytical methods

During the 2010 bathing season the Grand Duchy of Luxembourg analysed two parameters - 'intestinal enterococci' and '*Escherichia coli'* - which form the basis of monitoring laid down in the new Directive 2006/7/EC concerning the management of bathing water quality and repealing Directive 76/160/EEC. This analysis was undertaken at sufficiently frequent intervals to meet the requirements laid down in the new Directive.

The methods of analysis used are based on the MPN principle and are derived directly from international standard ISO 9308-3 with respect to *E. coli* and ISO 7899-1 with respect to intestinal enterococci, as provided for in Directive 2006/7/EC. Since January 2007 these two methods have been certified for use in the laboratory in conformity with ISO 17025 (General requirements for the competence of testing and calibration laboratories).

In parentheses, the results for the assessment as also presented in European report, published in June 2011, are given. The Luxembourg authorities sent additional data for one location that changed the class from "insufficiently sampled" to "sufficient quality". This is the final result also presented in Figure 1 and Map 1.

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



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: Luxembourg authorities

#### Closing of bathing waters

The Luxembourg authorities reported nine bathing waters as closed for the entire 2010 bathing season as follows:

Bathing water identification code	Bathing water name	River Basin District		
LU_600002003000000011	aval Michelau / Sûre	Rhine		
LU_600002003000000012	Bourscheid Moulin / Sûre	Rhine		
LU_600002006000000010	amont Erpeldange / Sûre	Rhine		
LU_600003005000000020	Moulin de Bigonville / Sûre	Rhine		
LU_600004003000000003	aval Vianden / Our	Rhine		
LU_600005004000000013	Dirbach / Sûre	Rhine		
LU_6000060060000000005	BORN/SURE	Rhine		
LU_600006007000000004	ROSPORT/SURE	Rhine		
LU_600007007000000006	amont Wasserbillig / Sûre	Rhine		

These bathing waters were closed due to poor bathing quality according to the assessment of bathing water quality in 2009 for the period 2006-2009. The Directive 2006/7/EC (Article 5. 4) a) i.) and national legislation say that bathing in these bathing waters should be prevented for the next bathing season. The description of management measures taken for three closed bathing waters (aval Michelau / Sûre, Bourscheid Moulin / Sûre and Dirbach / Sûre) is available at <a href="http://www.siden.lu/images/documents/doc/doc/SIDEN\_klarli1.pdf">http://www.siden.lu/images/documents/doc/doc/SIDEN\_klarli1.pdf</a>.

#### Information to the public

An exhaustive report is published by the water authorities every year to inform the public about bathing water quality.

Further information including bathing water profiles is available on the following website: <a href="http://www.eau.public.lu/">http://www.eau.public.lu/</a>.

### 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 a 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 (<a href="http://ec.europa.eu/environment/water/water-bathing/index\_en.html">http://ec.europa.eu/environment/water/water-bathing/index\_en.html</a>) and the European Environment Agency's bathing water website (<a href="http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water">http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water</a>). 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 bathing waters 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 (<a href="http://www.eea.europa.eu/themes/water/interactive//bathing">http://www.eea.europa.eu/themes/water/interactive//bathing</a>) 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 (<a href="http://www.eea.europa.eu/themes/water/status-and-monitoring/bathing-water-data-viewer">http://www.eea.europa.eu/themes/water/status-and-monitoring/bathing-water-data-viewer</a>) 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 (<a href="http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/eye-on-earth">http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/eye-on-earth</a>) 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 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 <a href="http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF">http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF</a>.