

## Bathing water results 2010 – Bulgaria

### 1. Reporting and assessment

This report gives a general overview of bathing water quality in Bulgaria during the 2010 bathing season.

Bulgaria reported 14 parameters under the Directive 76/160/EEC (1 Total coliforms, 2 Faecal coliforms, 3 Faecal streptococci, 4 Salmonella, 6 pH, 7 Colour, 8 Mineral oils, 9 Surface-active substances reacting with methylene blue, 10 Phenols (phenol indices), 12 Dissolved oxygen, 13 Tarry residues and floating materials, 14 Ammonia, 17 Heavy metals, 19 Nitrates and phosphates).

The parameters to be taken into account for assessment according to the assessment rules of the Directive 76/160/EEC are microbiological (1 Total coliforms, 2 Faecal coliforms) and physico-chemical (8 Mineral oils, 9 Surface-active substances reacting with methylene blue, 10 Phenols (phenol indices)).

The bathing waters are classified in the following categories:

- Compliant with mandatory values of the Directive for the five parameters (class CI);
- Compliant with mandatory and more stringent guide values of the Directive for the five parameters (class CG);
- Not compliant with mandatory values of the Directive for the five parameters (class NC);
- Banned or closed (temporarily or throughout the season) (class B);
- Insufficiently sampled (class NF);
- Not sampled (class NS).

### 2. Length of bathing season and number of bathing waters

The bathing season started on 1 or 15 June and ended from 1 to 30 September 2010 for coastal bathing waters, except for three bathing waters opened on 15 May and eight bathing waters opened on 1 July. The bathing season started on 1 or 15 June and ended on 31 August or 1 September 2010 for inland bathing waters.

A total of 94 bathing waters were monitored in Bulgaria during the 2010 bathing season, of which 90 were coastal bathing waters and four inland bathing waters on lakes. There are very few inland bathing waters due to lack of tradition to bath on rivers or lakes.

With 94 bathing waters Bulgaria accounts for about 0.4 % 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 is presented in Table 1. Since the start of the reporting in 2007, the number of coastal and inland bathing waters remained stable (89-90 coastal bathing waters and three to four inland bathing waters). In 2010, new coastal bathing water was added to the list, while the number of inland bathing waters (four) remained the same since 2008.

### 3. Bathing water quality

The results of the bathing water quality in Bulgaria for the period 2007-2009 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](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 Bulgaria for all bathing waters.

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

#### Coastal bathing waters

In Bulgaria, 100 % of the coastal bathing waters complied with the mandatory values in 2010. This is an increase of 1.1 % compared to the previous year, when one bathing location was non-compliant with the mandatory values. The rate of compliance with the guide values decreased from 91 % to 84.4 %. Since 2008, no coastal bathing water had to be closed during the bathing season.

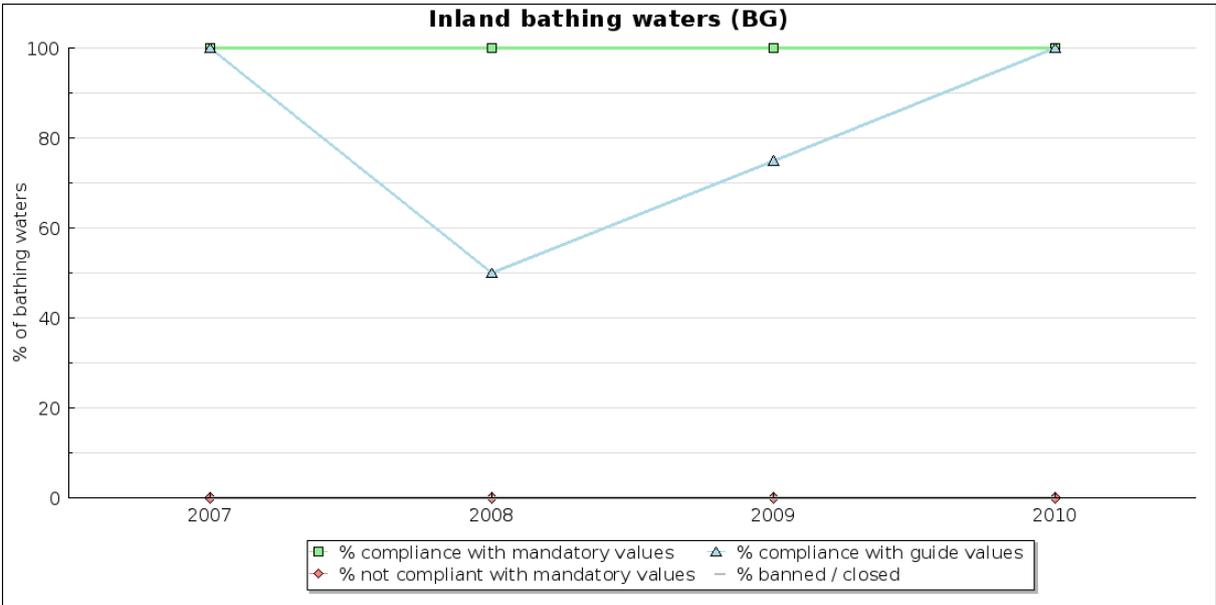
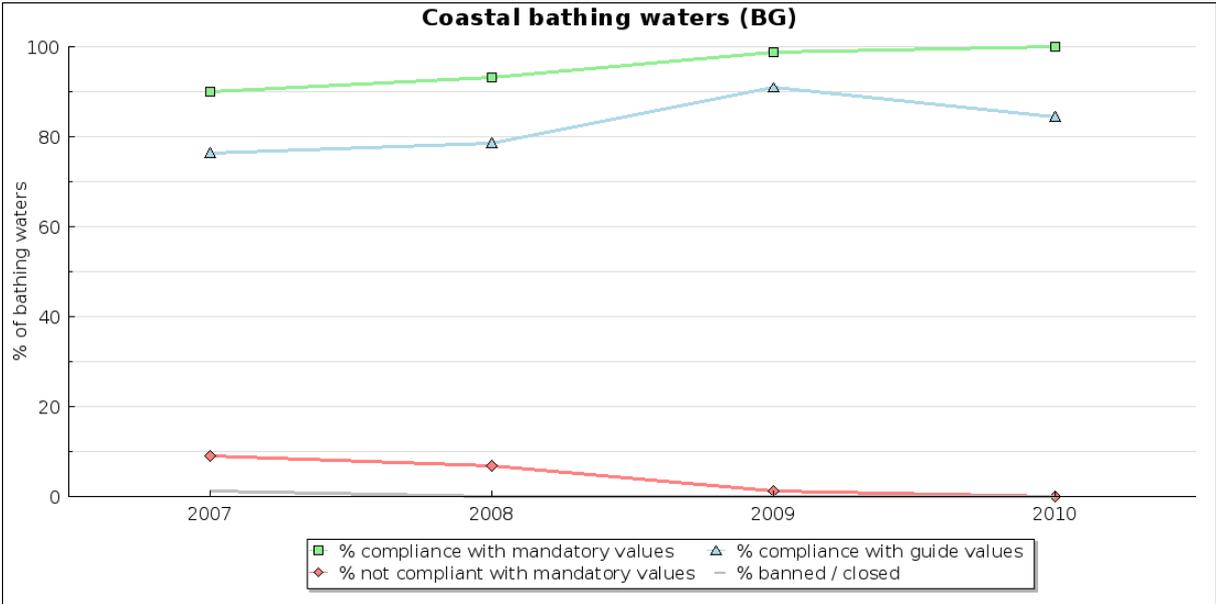
The water quality of coastal bathing waters has improved since 2007. The rate of compliance with the mandatory values was the highest in 2010 (100 %), while the rate of compliance with the guide values was higher in 2009 (91 %).

#### Inland bathing waters

All four reported inland bathing waters were in compliance with the mandatory values and the more stringent guide values in 2010. In 2009, three bathing waters complied with the guide values (75 %). Since the start of reporting in 2007, no inland bathing water had to be closed during the season.

Since 2007, all inland bathing waters complied with the mandatory values. The rate of compliance with the guide values decreased from 100 % in 2007 to 50 % in 2008 and increased again to 100 % in 2010.

**Figure 1: Results of bathing water quality in Bulgaria from 2007 to 2010**



**Table 1: Results of bathing water quality in Bulgaria from 2007 to 2010**

BG												
		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	2007	89	68	76.4	80	89.9	8	9.0	1	1.1	0	0
	2008	89	70	78.7	83	93.3	6	6.7	0	0.0	0	0
	2009	89	81	91.0	88	98.9	1	1.1	0	0.0	0	0
	2010	90	76	84.4	90	100.0	0	0.0	0	0.0	0	0
Inland bathing waters	2007	3	3	100.0	3	100.0	0	0.0	0	0.0	0	0
	2008	4	2	50.0	4	100.0	0	0.0	0	0.0	0	0
	2009	4	3	75.0	4	100.0	0	0.0	0	0.0	0	0
	2010	4	4	100.0	4	100.0	0	0.0	0	0.0	0	0

\*Bathing waters which were compliant with the guide values were also compliant with the mandatory values.

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

BG												
		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	%
All bathing waters	2009	93	84	90.3	92	98.9	1	1.1	0	0	0	0
	2010	94	80	85.1	94	100	0	0	0	0	0	0

\*Bathing waters which were compliant with the guide values were also compliant with the mandatory values.

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



Bathing water quality		Coastal/transitional bathing waters		No data	
■	Compliant with guide values	●	Compliant with guide values	□	No data
■	Compliant with mandatory values	●	Compliant with mandatory values	□	Outside data coverage (data available, not presented on the map)
■	Closed*	●	Closed*		
■	Insufficiently sampled or not sampled	●	Insufficiently sampled or not sampled		
■	Not compliant with mandatory values	●	Not compliant with mandatory values		

**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, CCM GISCO; Bathing waters data and coordinates: Bulgarian authorities

#### **4. Important information as provided by the Bulgarian authorities**

During 2010 bathing season 90 coastal and four inland bathing zones were monitored. The limited number of Bulgarian inland bathing areas is due to several reasons – lack of interest by the communities to establish and maintain inland bathing waters zones according to all requirements, lack of tradition in the Bulgarian population to visit such places and very strict national legislation on Water Live Saving Service which prohibits bathing in all areas where there is no such service.

The competent authorities concerning bathing water are the Ministry of Health at national level and its 28 Regional Inspectorates on Public Health Protection and Control that carry out sampling and monitoring of bathing waters. The samples are analyzed in the regional CA's laboratories and the analytical methods used are ISO, EN or BDS relevant to the methods laid down in the Annex of the Directive 76/160/EEC.

##### **Information for the public**

The results from bathing water quality monitoring are made public through websites of the regional CAs and through the media (local press, radio and TV). During the bathing season every week the regional CAs give press conference incl. the current bathing water quality status on their territory. There is also a practice the actual information for bathing water quality to be made available to the guests of the big sea hotels.

##### **Wastewater treatment**

In order to achieve the objectives of Directive 91/271/EEC concerning urban wastewater treatment Republic of Bulgaria developed an Implementation Program with detailed Action Plan consisting of a set of coordinated measures and deadlines. Bulgaria has identified a part of the national territory as a sensitive area according to the requirements of the Directive. The whole Bulgarian Black Sea Region is identified as sensitive area and under the above mentioned Program priority measures intended for the bathing water quality improvement is envisaged. The implementation program has been updated, identifying all the agglomerations within the scope of the Directive. The updated information is included also in River Basin Plans.

38 waste water treatment plants exist in the Black Sea Region, out of which 35 are operational, which serve 44 agglomerations. For the rest 58 agglomerations in the Black Sea basin with no treatment, the necessary treatment should be provided in the years until the end of 2014.

The necessary investment costs for the construction of the waste water collection systems and WWTPs to comply with the goals laid down in the Directive are estimated on 3 523 MI EURO for the whole country. Full implementation of the Directive is expected by 31 December 2014, in line with the transition periods granted to Bulgaria for the implementation of the Directive.

##### **Treatment of diffuse sources of pollution**

For decreasing the diffuse pollution sources, Republic of Bulgaria provides a system of measures, aiming full implementation of Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources, which include the following:

- defining in 2004 the polluted water, the water in risk of pollution and the vulnerable zones. The area of vulnerable zones in Bulgaria is 34% of the whole territory;
- adoption in 2005 of the Code of Good Agricultural Practice;
- adoption in 2006 of the Action Program;
- development of Training program for farmers on how to implement measures of the Code of GAP.

Although, significant pollution of the superficial waters and significant level of eutrophication have not been ascertained on the national territory, the above mentioned Action Program provides concrete measures for the prevention and the reduction of the surface waters' pollution from agricultural sources.

The Black Sea Coast Law establishes two kinds of protection zones (up to 2.1 km from the sea coast and alongside the whole Bulgarian coast's length) where the use of mineral fertilizers and plant protection products is forbidden.

## 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 programs 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](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 reports for the bathing seasons from the 2008 bathing season on have been produced by 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). 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 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>.