European Environment Agency

Bathing water results 2010 – Germany

1. Reporting and assessment

This report gives a general overview of bathing water quality in Germany during the 2010 bathing season. Germany has reported under the Directive 2006/7/EC since 2008.

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 (temporary or throughout the season);
- **Class NF:** Insufficiently sampled;
- **Class NS:** Not sampled.

The new bathing water directive (2006/7/EC) requires Member States to start sampling shortly before the start of the bathing season. It also requires that the interval between sampling should not exceed one month. In some cases these required changes in regard to the old bathing water directive (76/160/EEC) have not yet been implemented, resulting in a late start date of sampling at some sites and/or insufficiently frequent sampling. For that reason two rules in regard to sampling frequency are considered in the assessment of the monitoring results in 2010. 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 graphs results applying the less strict rules are presented.

2. Length of bathing season and number of bathing waters

Coastal bathing waters opened on 7 May to 1 June and closed from 10 to 15 September 2010. Inland bathing waters opened from 15 April to 15 July 2010 and closed in August or September 2010, except for three bathing waters that closed in June or July.

A total of 2 285 bathing waters were reported in Germany for the 2010 bathing season, of which 370 were coastal (352) or transitional bathing waters (18) and 1 915 inland bathing waters (31 on rivers; 1 884 on lakes).

With 2 285 bathing waters Germany accounts for about 10.8 % 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 the Directive 2006/7/EC is presented in Table 1. The number of reported inland bathing waters increased since the start of the reporting from 1 514 in 1991 to 1 915 in 2010. Meanwhile, the number of inland bathing waters had decreased from 1 915 in 1994 to 1 553 in 2005. There were nine more inland bathing waters in 2010 than in the previous year: 17 new bathing waters were added to the list and eight were de-listed. The number of reported coastal bathing waters decreased since the start of reporting from 440 in 1991 to 351 in 2006 and 2007. It increased afterwards to 373 in 2008 and 2009. However, the total number of reported coastal bathing waters was still lower than the numbers reported till 2005. There were three less coastal bathing waters in 2010 than in the previous year: one new bathing site was added to the list and four were de-listed.

3. Bathing water quality

The results of the bathing water quality in Germany for the period 1991-2009 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; 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 Germany for all bathing waters.

Map 1 shows the location of the reported bathing waters in Germany. 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 German authorities.

Coastal bathing waters

In Germany, 99.5 % of the coastal bathing waters met the mandatory water quality in 2010, the same as in 2009. The rate of compliance with the guide values was 80.5 %, which is a slight decrease of 0.5 %. One bathing site was non-compliant with the mandatory value for *Escherichia coli* (0.3 %), while no bathing water was non-compliant in 2009. No coastal bathing water had to be closed during the season.

In the early 90's the water quality in coastal bathing waters was rather low, with around 15 % of the bathing waters not compliant with the mandatory values. The German authorities have taken measures to improve the overall water quality. These resulted in improved water quality as can be seen in the increasing compliance results from 1992 onwards. The low compliance rate in the early 90's is partly also explained by the large number of insufficiently sampled bathing waters. The compliance rate with the mandatory values in 2007 was the lowest since 2000; non-compliance was

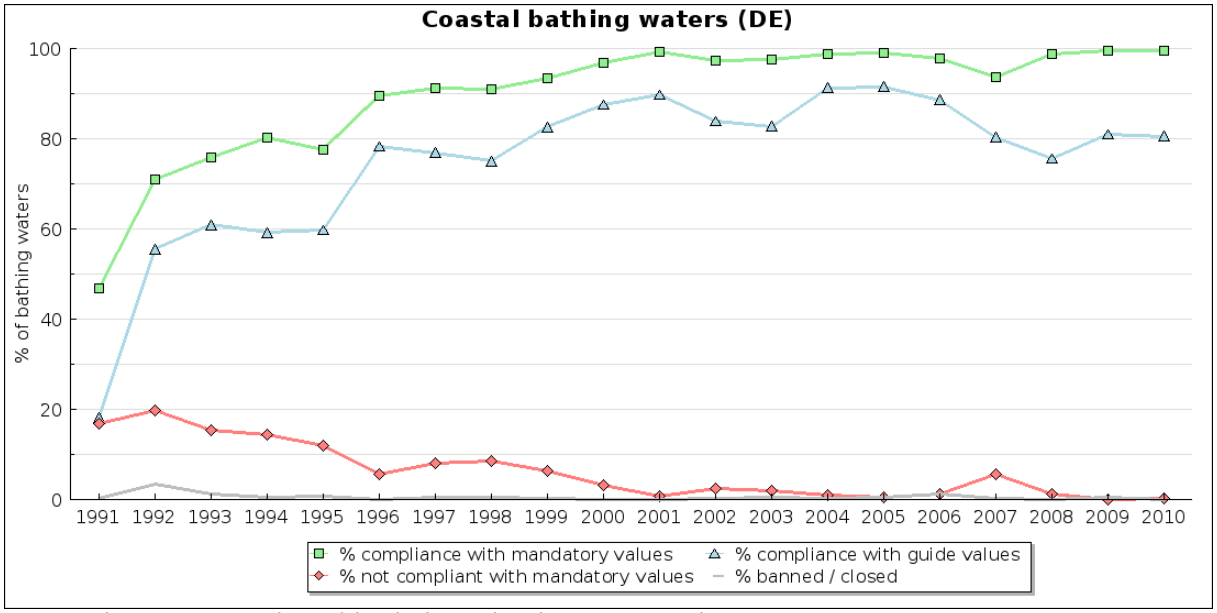
often due to the parameter total coliform bacteria. The compliance rate with the guide values in 2008 - which for the first time also included the parameter intestinal enterococci - was the lowest since 2000. Since the start of the reporting in 1991, one or more coastal bathing waters were closed during the season (except for 1996, 2000, 2001, 2008 and 2010), accounting for less than 1 % of the bathing waters for the most seasons.

Inland bathing waters

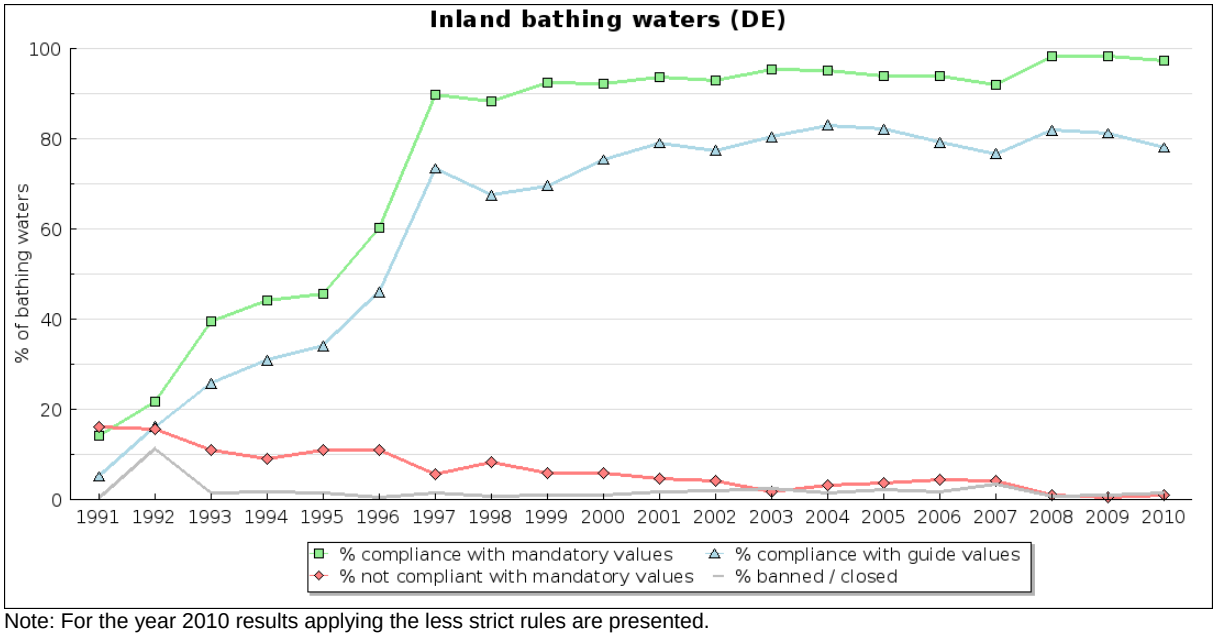
Some 97.2 % of the inland bathing waters were in compliance with the mandatory water quality in 2010. This is a decrease of 1.2. % compared to the previous year. Some 78.1 % of the bathing waters met the guide values, which is a decrease of 3.1 %. The number of bathing waters non-compliant with the mandatory value for *Escherichia coli* increased from nine (0.5 %) to 17 bathing waters (0.9 %). A total of 27 inland bathing waters (1.4 %) had to be closed during the season compared to 18 (0.9 %) in 2009.

Similarly as for the coastal bathing waters, the compliance rate was low for the inland bathing waters in the early 90's. As for the coastal bathing waters, this was largely due to the high number of insufficiently sampled bathing waters. From 1992 onward we see an overall increase in the water quality. Beginning with the 2001 bathing season Germany reached a constant low level of non-compliant inland bathing waters below 5 %. The mandatory water quality was met in minimum 92 % of the bathing waters since 1999. Since 2000, the bathing waters compliant with the more stringent guide values are fluctuating between 75.4 % in 2000 and 83 % in 2004. Since the start of the reporting in 1991, closed inland bathing waters were reported. For the most seasons, the percentage of closed bathing waters was below 3 %.

Figure 1: Results of bathing water quality in Germany from 1991 to 2010



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



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

Table 1: Results of bathing water quality in Germany from 1991 to 2010

DE												
		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	1991	440	80	18.2	206	46.8	74	16.8	1	0.2	159	36.1
	1992	441	245	55.6	313	71	87	19.7	15	3.4	26	5.9
	1993	437	266	60.9	332	76	67	15.3	5	1.1	33	7.6
	1994	444	263	59.2	356	80.2	64	14.4	2	0.5	22	5.0
	1995	440	263	59.8	341	77.5	53	12	3	0.7	43	9.8
	1996	428	335	78.3	383	89.5	24	5.6	0	0	21	4.9
	1997	416	320	76.9	379	91.1	33	7.9	2	0.5	2	0.5
	1998	417	313	75.1	379	90.9	36	8.6	2	0.5	0	0.0
	1999	414	342	82.6	387	93.5	26	6.3	1	0.2	0	0.0
	2000	411	360	87.6	398	96.8	13	3.2	0	0	0	0.0
	2001	409	367	89.7	406	99.3	3	0.7	0	0	0	0.0
	2002	404	339	83.9	393	97.3	10	2.5	1	0.2	0	0.0
	2003	394	326	82.7	384	97.5	8	2	2	0.5	0	0.0
	2004	390	356	91.3	385	98.7	4	1	1	0.3	0	0.0
	2005	389	356	91.5	385	99	2	0.5	2	0.5	0	0.0
	2006	351	311	88.6	343	97.7	4	1.1	4	1.1	0	0.0
	2007	351	282	80.3	329	93.7	20	5.7	1	0.3	1	0.3
	2008	373	282	75.6	368	98.7	5	1.3	0	0	0	0.0
	2009	373	302	81	371	99.5	0	0	2	0.5	0	0.0
	2010*	370	298	80.5	368	99.5	1	0.3	0	0.0	1	0.3
	2010	370	292	78.9	362	97.8	1	0.3	0	0.0	7	1.9
Inland bathing waters	1991	1514	78	5.2	213	14.1	244	16.1	2	0.1	1055	69.7
	1992	1820	295	16.2	394	21.6	284	15.6	203	11.2	939	51.6
	1993	1701	439	25.8	672	39.5	188	11.1	23	1.4	818	48.1
	1994	1915	592	30.9	846	44.2	172	9	31	1.6	866	45.2
	1995	1828	623	34.1	836	45.7	200	10.9	27	1.5	765	41.8
	1996	1808	832	46	1090	60.3	197	10.9	9	0.5	512	28.3
	1997	1723	1265	73.4	1545	89.7	97	5.6	24	1.4	57	3.3
	1998	1656	1118	67.5	1462	88.3	137	8.3	13	0.8	44	2.7
	1999	1639	1141	69.6	1514	92.4	97	5.9	15	0.9	13	0.8
	2000	1615	1217	75.4	1490	92.3	94	5.8	16	1	15	0.9
	2001	1601	1265	79	1498	93.6	74	4.6	26	1.6	3	0.2
	2002	1592	1232	77.4	1478	92.8	66	4.1	30	1.9	18	1.1
	2003	1572	1264	80.4	1500	95.4	26	1.7	37	2.4	9	0.6
	2004	1561	1296	83	1484	95.1	48	3.1	24	1.5	5	0.3
	2005	1553	1275	82.1	1459	93.9	55	3.5	34	2.2	5	0.3
	2006	1564	1238	79.2	1467	93.8	70	4.5	25	1.6	2	0.1
	2007	1588	1217	76.6	1462	92.1	67	4.2	54	3.4	5	0.3
	2008	1890	1547	81.9	1857	98.3	20	1.1	13	0.7	0	0.0
	2009	1906	1548	81.2	1875	98.4	9	0.5	18	0.9	4	0.2
	2010*	1915	1495	78.1	1862	97.2	17	0.9	27	1.4	9	0.5
	2010	1915	1482	77.4	1844	96.3	17	0.9	27	1.4	27	1.4

*****Less strict rules applied (41 days taken as a maximum difference between two samples for reporting under Directive 2006/7/EC). **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 (1991-2007) or the mandatory value for *Escherichia coli* (2008-2010).

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

DE												
		Total number of bathing waters	Compliance with guide and mandatory values**		Compliance with mandatory value		Not compliant		Banned/closed temporarily or throughout the season		Insufficiently sampled or not sampled	
			number	%	number	%	number	%	number	%	number	%
All bathing waters	2009	2279	1850	81.2	2246	98.6	9	0.4	20	0.9	4	0.2
	2010*	2285	1793	78.5	2230	97.6	18	0.8	27	1.2	10	0.4
	2010	2285	1774	77.6	2206	96.5	18	0.8	27	1.2	34	1.5

*****Less strict rules applied (41 days taken as a maximum difference between two samples for reporting under Directive 2006/7/EC). **Bathing waters which were compliant with the guide values were also compliant with the mandatory value for *Escherichia coli.*

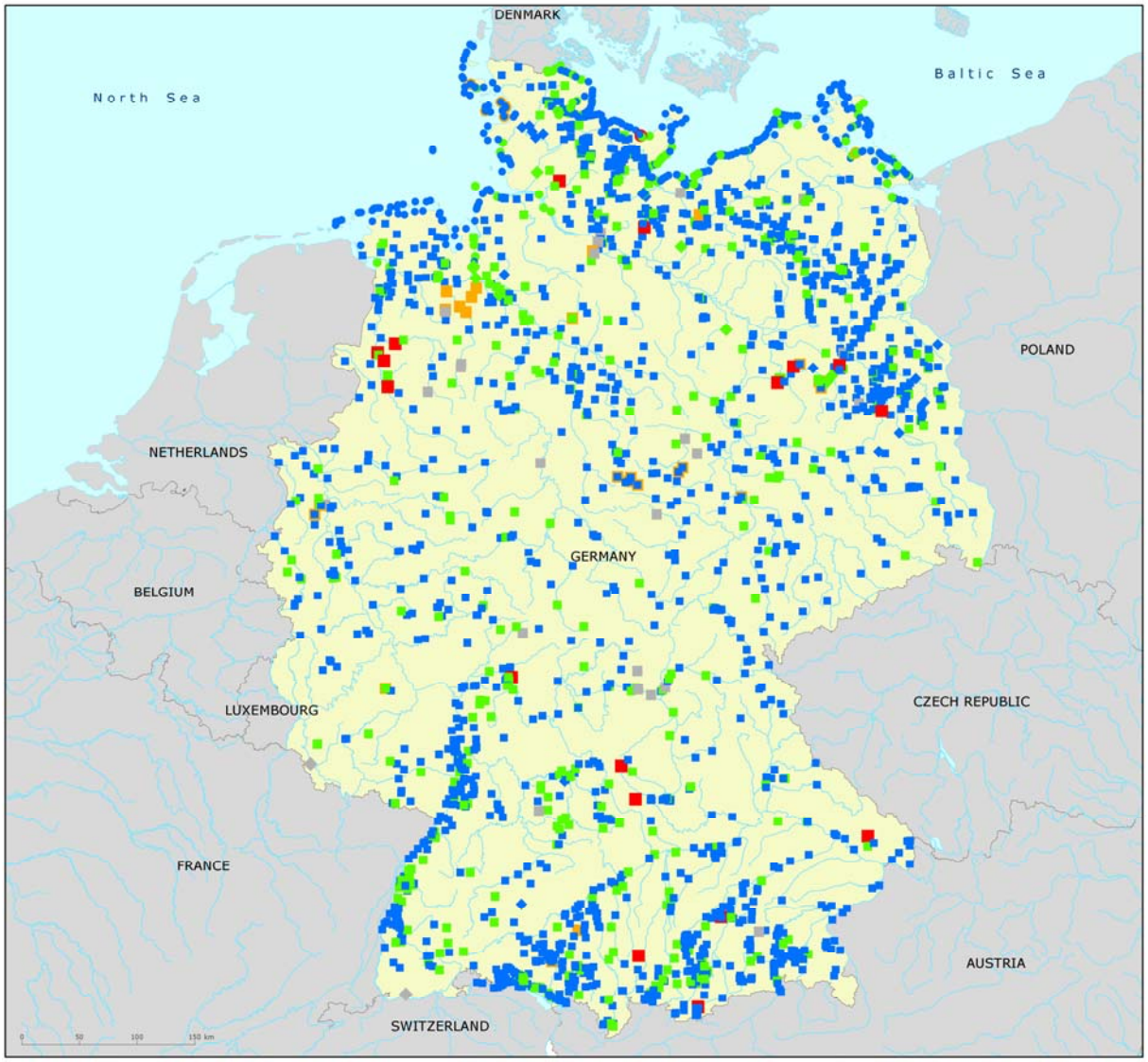
4. Important information as provided by the German authorities

In Germany, the 16 federal states of the Federal Republic of Germany – the Länder - are responsible for monitoring of bathing waters. There are extended bathing waters in Germany where the authorities regularly take several (2-3) samples per sampling date (day) at different places in order to better detect possible problems with pollution.

The German authorities reported reasons for de-listing of bathing waters as follows:

Bathing water identification code	Bathing water name	RBD	Reasons for change
DEBW_PR_0175	GRAUELSBAUM, BAGGERSEE	Rhein	Bathing water was destroyed by construction work and does no longer exist, sampling not possible.
DEBY_PR_DAH_0168	WALDSCHWAIGSEE, KARLSFELD, SUEDOSTUFER	Donau	Low number of bathers.
DEBY_PR_HAS_0012	MOENUS-SEE, STETTFELD, SANDSTRAND	Rhein	Sampling not possible, no bathing by designation as a nature reserve.
DEMV_PR_1_0771	OSTSEE, VITT	Warnow/ Peene	Low number of bathers due to poor infrastructure. The bathers use the better accessible bathing water DEMV_PR_1_0770 Putgarten-Nordstrand.
DEMV_PR_1_0818	OSTSEE, ROSENGARTEN	Warnow/ Peene	Low number of bathers due to poor infrastructure. The bathers use the better accessible bathing water DEMV_PR_1_0795 Zeltplatzstrand Zicker-Zudar.
DEMV_PR_1_0832	OSTSEE, INSEL RIEMS	Warnow/ Peene	Access to this bathing water is very difficult. Infrastructure has not improved as expected. Good alternative bathing water in close proximity (Eldena DEMV_PR_1_0831).
DENI_PR_TK25_2925_01	MORAENE SEE DITTMERN	Weser	Delisting in 2010 due to steadily decreasing number of bathers. Bathing water no longer accessible for the local public.
DENI_PR_TK25_3025_01	BROCK, IMBROCK-BADETEICH	Weser	Delisting in 2010 due to steadily decreasing number of bathers. Bathing water no longer accessible for the local public.
DENI_PR_TK25_3719_01	KIESTEICH – GEVATTERFEL	Weser	Delisting in 2010 due to steadily decreasing number of bathers because of unattractive surroundings (garbage dumping).
DENW_PR_0036	FREIZEITZENTRUM TONWERKE	Rhein	Private bathing water with no access to the public. Low number of bathers.
DERP_PR_0031	HOLZSCHER WEIHER	Rhein	The owner of the bathing water has decided to no longer allow bathing; infrastructure has been withdrawn; bathing stopped in 2009.
DESH_PR_0096	OSTS;FEHMARN;GOLD	Schlei/ Trave	The former bathing water is now dominated by surf and kite activities. Number of bathers has steadily decreased due to lack of infrastructure. More attractive bathing waters are situated in close proximity.

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



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; Bathing waters data and coordinates: German authorities

The German authorities also reported reasons for closing of bathing waters as follows:

Bathing water identification code	Bathing water name	Reasons for change	Closed
DEBB_PR_0206	MELLENSEE, MELLENSEE, STRANDBAD	Temporarily closed, from 2010-07-20 to 2010-09-15 due to construction defects.	YT
DEBE_PR_0011	FREIBAD TEGELSEE	Closed due to termination of contract with leaseholder, re-opening planed for 2011.	YP
DEBW_PR_0169	SCHWOERSTADT, RHEIN BEIM SCHWIMMBAD	Temporarily closed 2010-06-11 to 2010-06-14 and 2010-06-18 to 2010-07-15 due to high concentrations of EC.	YT
DEBW_PR_0310	BIBERSFELD, STARKHOLZBACHER SEE	Bathing site closed for renovation, reopening probably 2011.	YP
DEBY_PR_BA_0029	BAGGERSEE EBING, RATTELSDORF, EBING	Temporarily closed, bathing ban due to cyanobacteria from 2010-07-16 to 2010-08-02.	YT
DEBY_PR_EBE_0170	KLOSTERSEE, EBERSBERG	Temporarily closed, bathing ban 2010-06-26 to 2010-07-03 due to cyanobacteria and high concentration of EC; bathing ban 2010-08-27 to 2010-09-09 due high concentration of EC.	YT
DEBY_PR_HAS_0008	BADESEE GOSSMANNSDORF, HOFHEIM-GOSSMANNSDORF, GOSSMANNSDORF, STEG	Temporarily closed, bathing ban due to high concentration of EC from 2010-08-19 to 2010-08-26.	YT
DEBY_PR_HAS_0013	PFISTER-FREIZEITLAND, ELTMANN-ROSSSTADT, ROSSSTADT, SANDSTRAND	Temporarily closed from 2010-05-15 to the end of the season due to ongoing construction work.	YP
DEBY_PR_HAS_0014	SANDER SEE, SAND AM MAIN, SANDSTRAND	Temporarily closed, bathing ban due to high concentration of EC 2010-07-23 to 2010-07-30.	YT
DEHE_PR_0065	GEDERNER SEE, CAMPINGPARK	In 2010, sampling in Gederner See not possible due to low water level. In 2010, no bathing due to renovation and remediation work.	YP
DEHH_PR_5900_102131001	OEJENDORFER SEE; BADEPLATZ NORD	Temporarily closed from 2010-08-10 to 2010-09-13 (reason: cyanobacteria).	YT
DEHH_PR_5900_102131002	OEJENDORFER SEE; BADEPLATZ SUED	Temporarily closed from 2010-08-10 to 2010-09-13 (reason: cyanobacteria).	YT
DEHH_PR_5900_102606008	EICHBAUMSEE; BADEPLATZ NORD	Lake Eichbaum was closed due to ongoing remediation work. Phosphate precipitation was realized in November 2010.	YP
DEHH_PR_5900_102606009	EICHBAUMSEE; BADEPLATZ OST	Lake Eichbaum was closed due to ongoing remediation work. Phosphate precipitation was realized in November 2010.	YP
DEMV_PR_2_0153	PLOGGENSEE, GREVESMÜHLEN	Bathing water was closed during the 2010 season because current owner has left and new owner - who would have to invest in remediation measures - has not yet been found. Sampling not possible.	YP
DEMV_PR_2_0401	KUMMEROWER SEE, SALEM	Temporarily closed from 2010-08-16 to the end of the season due to high concentrations of EC/IE.	YT
DENI_PR_TK25_2626_02	SEE IM MASCHENER MOOR (SUEDL. RICHT. B4)	Temporarily closed. Bathing ban due to cyanobacteria 2010-08-10 to 2010-09-15.	YT
DENI_PR_TK25_3014_02	HELENENSEE - GROSSENKNETEN	Re-opened, temporarily closed. Bathing ban due to cyanobacteria 2010-07-01 to 2010-09-15.	YT
DENI_PR_TK25_3416_01	DUEMMER SEE - LEMBRUCH	Temporarily closed. Bathing ban due to cyanobacteria 2010-07-09 to 2010-07-12, 2010-07-13 to 2010-07-22 and 2010-07-23 to 2010-07-26. Bathing ban due to high concentrations of IE 2010-08-26 to 2010-09-01.	YT
DENI_PR_TK25_3516	DUEMMER SEE -	Temporarily closed. Bathing ban due to	YT

Bathing water identification code	Bathing water name	Reasons for change	Closed
_01	HUEDE	cyanobacteria 2010-07-09 to 2010-07-12 and 2010-07-13 to 2010-07-22. Bathing ban due to high concentrations of EC and IE from 2010-08-26 to 2010-09-01.	
DENI_PR_TK25_3613_01	NATURFREIBAD ATTERSEE	Temporarily closed. Bathing ban due to high concentrations of IE 2010-07-31 to 2010-08-23, probably due to water fowl.	YT
DENW_PR_0034	FREIZEITANLAGE HÖXTER-GODELHEIM/BADESTELLE	Temporarily closed 2010-08-19 to 2010-09-14 due to cyanobacteria.	YT
DENW_PR_0050	KRUPPSEE/FREIBAD	Temporarily closed 2010-08-11 to 2010-08-27 due to cyanobacteria).	YT
DESL_PR_04002	NIED, REHLINGEN-SIERSBURG, SIERSBURG CAMPINGPLATZ	As in the years before closed (uncertain water quality).	YP
DEST_PR_0011	GRÖNINGER SEE	Temporarily closed 2010-08-27 to 2010-09-15. Bathing ban due to high concentrations of EC.	YT
DEST_PR_0051	CONCORDIA SEE	The area around the bathing water was closed off due to a landslide on 2009-07-18. Bathing was banned. Sampling 2010 not possible.	YT
DETH_PR_0061	BEBRAER TEICHE	Temporarily closed 2010-08-23 to 2010-09-12 due to high concentrations of IE and EC.	YT

YT: Closed part of the season (temporarily) (at least 14 days or at least three days in case of microbiological contamination).
YP: Closed the entire season (permanently).

One bathing site was affected by short term pollution four times. Replaced sample was taken in one case. Abnormal situation was reported at two bathing waters.

Information on establishment of bathing waters profiles for some bathing waters and other significant management measures can be obtained from the report of bathing water quality for the 2010 bathing season by the German authorities, table BWQD_SeasonalInfo, attribute ManMeas (http://cdr.eionet.europa.eu/de/eu/nbwd/envtrbayg/BWQ_2010_DATA_ACQUISITION_DE_corr1.xls).

Information for and participation of the public

Visitors are notified of bathing water quality by results displayed at the site itself and in tourist offices. Many local and regional authorities publish the information in their own reports, brochures and maps. During the bathing season, specific information and the latest sampling results are released to the media. Increasing use of websites is being made by counties to give the public and media access to regularly updated information. These sites include background information on monitoring and the significance of health parameters as well as brief descriptions of the bathing waters and details provided by the local and regional authorities. The results are updated every week but special measures – such as bathing bans – are announced within 24 h. The links to websites of a county can be found at http://www.umweltbundesamt.de/gesundheit-e/badegewaesser/index.htm. Following the demands of the new Directive, public participation especially concerning the list of bathing waters is realized e.g. by invitations through internet and news papers.

Wastewater treatment and treatment of diffuse pollution sources

Sewage treatment connection rate in Germany is 96 % (2007 figure) varying from 84 % to 100 % in the 16 counties (Länder). Wastewater is treated in about 10 000 wastewater treatment plants. Minimum quality standards for chemical parameters in treated wastewater depend on the size of the treatment plant and are regulated by law. An increasing number of wastewater treatment plants are being upgraded to include tertiary treatment. The 2001 Act on prevention and control of infectious diseases also makes provisions for health quality parameters for treated wastewater but no microbiological standards have been set. As ever greater quantities of wastewater are being processed, health hazards due to diffuse pollution of bathing waters are becoming more apparent. The relevant authorities are becoming increasingly aware of the situation and take efforts for identification

and remediation of diffuse pollution sources. Storm water overflow retention and treatment is a major issue in improving bathing water quality.

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) 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 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 location. 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.