

Bathing water results 2010 – The Netherlands

1. Reporting and assessment

This report gives a general overview of bathing water quality in the Netherlands during the 2010 bathing season. The Netherlands has reported under the Directive 2006/7/EC since 2009.

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

For all bathing waters the bathing season lasted five months, from 1 May to 1 October 2010.

A total of 669 bathing waters were monitored in the Netherlands during the 2010 bathing season, of which 90 were coastal (77) or transitional bathing waters (13) and 579 inland bathing waters (28 on rivers; 551 on lakes).

With 669 bathing waters the Netherlands accounts for about 3.2 % of the reported bathing waters of the European Union.

The evolution of the reported number of bathing waters since monitoring of the water quality began under the Directive 76/160/EEC and the Directive 2006/7/EC is presented in Table 1. The number of coastal bathing waters increased significantly since the start of the reporting from 26 in 1990 to 91 in 2009. In 2010, one bathing water was de-listed compared to the previous year. The number of inland bathing waters started with 459 in 1990 and increased afterwards. It fluctuated around 550 bathing waters from 2000 to 2009 (550-558 bathing waters) and increased to 579 in 2010. There were 26 more inland bathing waters in 2010 than in the previous year: 32 new bathing waters were added to the list compared to the previous year and six was de-listed.

3. Bathing water quality

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

Map 1 shows the location of the reported bathing waters in the Netherlands. 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 Dutch authorities.

Coastal bathing waters

In the Netherlands, 92.2 % of the coastal bathing waters met the mandatory water quality in 2010. This is a decrease of 3.4 % compared to the previous year. The rate of compliance with the guide values was 60 %, which is a decrease of 21.3 %. Three bathing waters (3.3 %) were non-compliant with the mandatory value for *Escherichia coli* and three bathing waters (3.3 %) were closed during the season. In 2009, four bathing waters (4.4 %) were non-compliant and no bathing water was closed.

In the early 90's the compliance rate in coastal bathing waters was low (from 26 % to 61 % compliance rate with mandatory values). The dip in 1995 can be explained by the large number of bathing waters that were insufficiently sampled. Compliance with both the mandatory values and the more stringent guide values improved from 1996 onwards. The rate of compliance with the mandatory values was above 98 % since 1998 (100 % compliance in six years) with a dip in 2001, 2004, 2009 and 2010. The rate of compliance with the guide values was above 85 % since 1997 with a dip in 2001, 2002, 2009 and 2010. Since the start of the reporting in 1990, no coastal bathing water had to be closed during the season, except in 2004 (2.4 %) and 2010 (3.3 %).

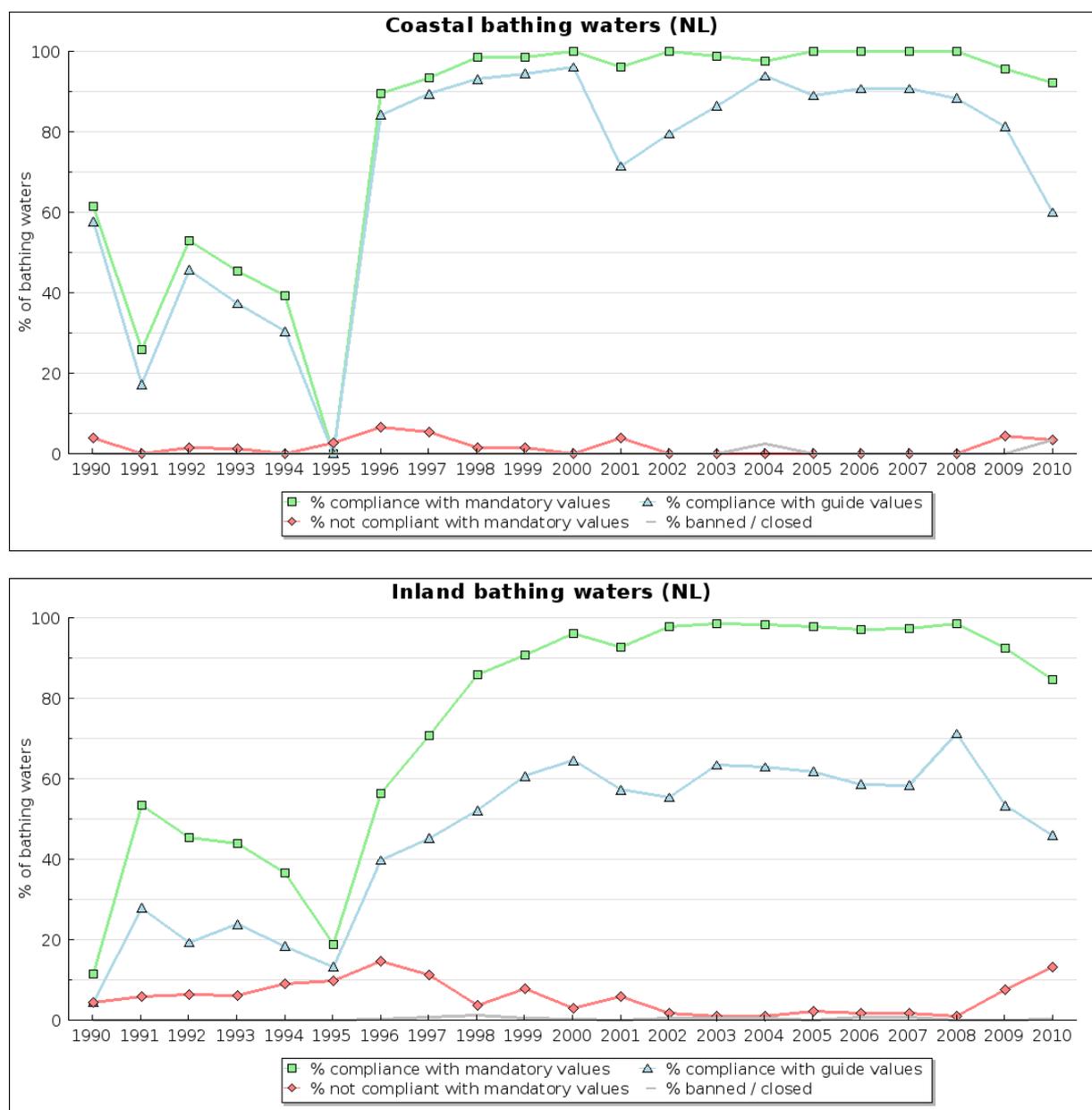
Inland bathing waters

Some 84.6 % of the inland bathing waters met the mandatory water quality in 2010. This is a decrease of 7.8 % compared to the previous year. The rate of compliance with the guide values decreased from

53.3 % to 45.9 %. The number of non-compliant bathing waters with the mandatory value for *Escherichia coli* increased from 42 (7.6 %) to 76 bathing waters (13.1 %). Two bathing waters (0.3 %) had to be closed during the season, while no bathing water was closed in 2009.

Similarly as for the coastal bathing waters, the compliance rate was low for the inland bathing waters in the early 90's (from 11 % to 53 % compliance rate with mandatory values). From 1996 onward there is an overall increase in the compliance rate, although it took the Netherlands till the 2002 bathing season to reach a constant level of non-compliant inland bathing waters below 5 %. However, the percentage of non-compliant bathing waters again reached above 5 % since 2009. The mandatory water quality was met in over 90 % of the bathing waters since 1999 and from 2002 to 2008 in over 97 % of the bathing waters. Since then, the mandatory water quality decreased to less than 85 % in 2010. The bathing waters compliant with the more stringent guide values were fluctuating around 60 % of the bathing waters from 1999 to 2007. After reaching just above 70 % of the bathing waters in 2008, the rate of compliance with the guide values decreased to less than 50 % in 2010. Since 1996, one to seven bathing waters (<1.5 %) had to be closed during the season, except in 2001, 2005, 2008 and 2009 (0 %).

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



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

Table 1: Results of bathing water quality in the Netherlands from 1990 to 2010

NL												
		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	1990	26	15	57.7	16	61.5	1	3.8	0	0.0	9	34.6
	1991	58	10	17.2	15	25.9	0	0.0	0	0.0	43	74.1
	1992	70	32	45.7	37	52.9	1	1.4	0	0.0	32	45.7
	1993	75	28	37.3	34	45.3	1	1.3	0	0.0	40	53.3
	1994	79	24	30.4	31	39.2	0	0.0	0	0.0	48	60.8
	1995	72	0	0.0	0	0.0	2	2.8	0	0.0	70	97.2
	1996	76	64	84.2	68	89.5	5	6.6	0	0.0	3	3.9
	1997	76	68	89.5	71	93.4	4	5.3	0	0.0	1	1.3
	1998	72	67	93.1	71	98.6	1	1.4	0	0.0	0	0.0
	1999	72	68	94.4	71	98.6	1	1.4	0	0.0	0	0.0
	2000	77	74	96.1	77	100.0	0	0.0	0	0.0	0	0.0
	2001	77	55	71.4	74	96.1	3	3.9	0	0.0	0	0.0
	2002	78	62	79.5	78	100.0	0	0.0	0	0.0	0	0.0
	2003	81	70	86.4	80	98.8	0	0.0	0	0.0	1	1.2
	2004	82	77	93.9	80	97.6	0	0.0	2	2.4	0	0.0
	2005	82	73	89.0	82	100.0	0	0.0	0	0.0	0	0.0
	2006	86	78	90.7	86	100.0	0	0.0	0	0.0	0	0.0
	2007	86	78	90.7	86	100.0	0	0.0	0	0.0	0	0.0
	2008	86	76	88.4	86	100.0	0	0.0	0	0.0	0	0.0
	2009	91	74	81.3	87	95.6	4	4.4	0	0.0	0	0.0
2010	90	54	60.0	83	92.2	3	3.3	3	3.3	1	1.1	
Inland bathing waters	1990	459	20	4.4	53	11.5	20	4.4	0	0.0	386	84.1
	1991	571	159	27.8	305	53.4	34	6.0	0	0.0	232	40.6
	1992	545	105	19.3	247	45.3	35	6.4	0	0.0	263	48.3
	1993	491	117	23.8	216	44.0	30	6.1	0	0.0	245	49.9
	1994	511	94	18.4	187	36.6	46	9.0	0	0.0	278	54.4
	1995	522	69	13.2	98	18.8	51	9.8	0	0.0	373	71.5
	1996	516	205	39.7	291	56.4	75	14.5	1	0.2	149	28.9
	1997	511	231	45.2	361	70.6	57	11.2	4	0.8	89	17.4
	1998	528	275	52.1	453	85.8	19	3.6	7	1.3	49	9.3
	1999	534	324	60.7	485	90.8	42	7.9	3	0.6	4	0.7
	2000	558	360	64.5	536	96.1	16	2.9	2	0.4	4	0.7
	2001	554	317	57.2	513	92.6	32	5.8	0	0.0	9	1.6
	2002	556	308	55.4	544	97.8	9	1.6	3	0.5	0	0.0
	2003	558	354	63.4	550	98.6	5	0.9	3	0.5	0	0.0
	2004	550	346	62.9	540	98.2	5	0.9	3	0.5	2	0.4
	2005	550	340	61.8	538	97.8	12	2.2	0	0.0	0	0.0
	2006	553	324	58.6	537	97.1	10	1.8	4	0.7	2	0.4
	2007	555	324	58.4	540	97.3	10	1.8	4	0.7	1	0.2
	2008	556	396	71.2	548	98.6	6	1.1	0	0.0	2	0.4
	2009	553	295	53.3	511	92.4	42	7.6	0	0.0	0	0.0
2010*	579	266	45.9	490	84.6	76	13.1	2	0.3	11	1.9	
2010	579	265	45.8	488	84.3	75	13.0	2	0.3	14	2.4	

*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 (1991-2008) or the mandatory value for *Escherichia coli* (2009-2010).

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

NL												
		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	644	369	57.3	598	92.9	46	7.1	0	0.0	0	0.0
	2010*	669	320	47.8	573	85.7	79	11.8	5	0.7	12	1.8
	2010	669	319	47.7	571	85.4	78	11.7	5	0.7	15	2.2

*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*.

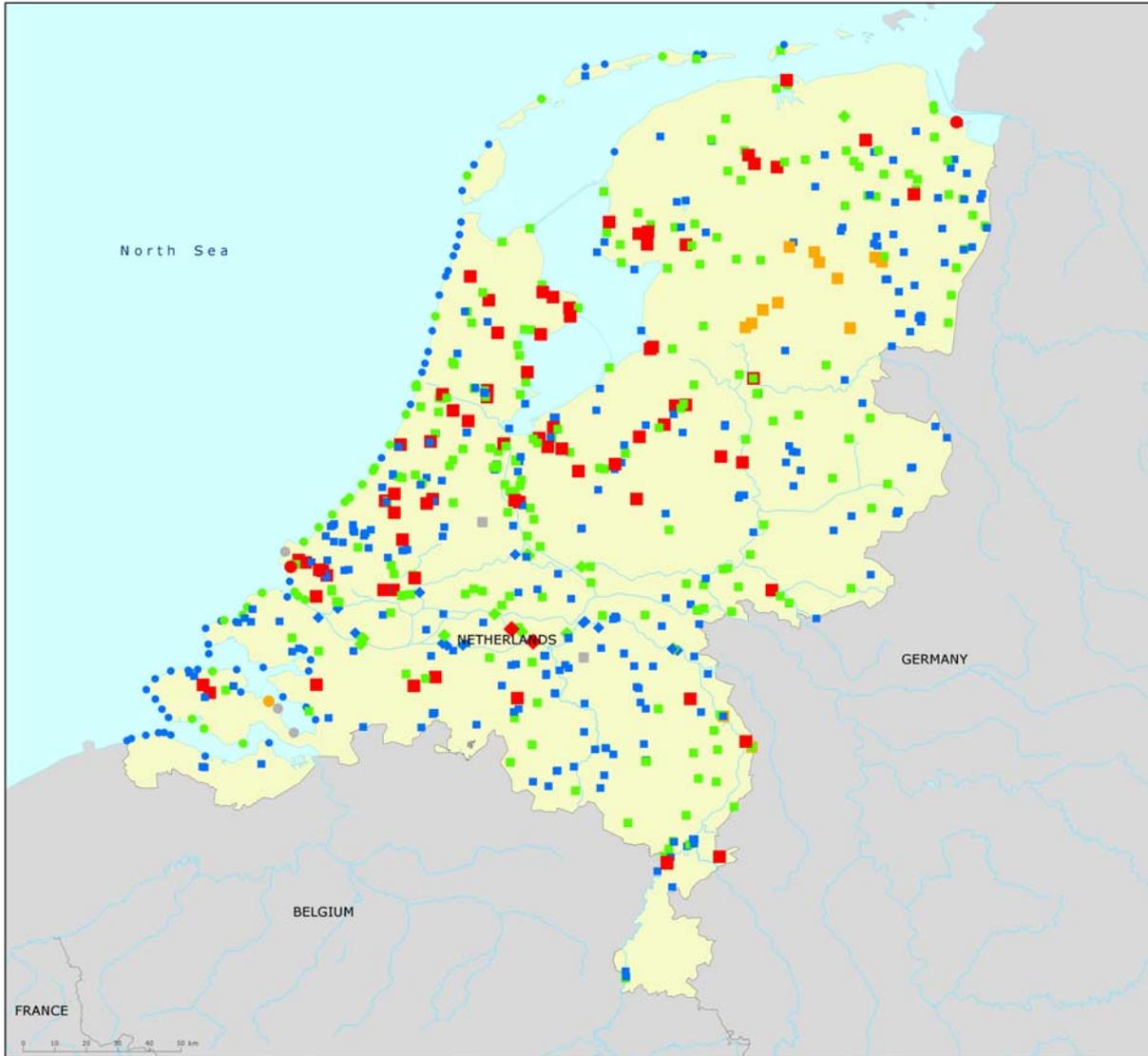
4. Important information as provided by the Dutch authorities

The Dutch authorities reported reasons for de-listing of bathing waters (in Dutch) as follows:

Bathing water identification code	Bathing water name	River Basin District	Reasons for change
NLBW02_9004	MEERTJE VAN LAAGDUURSWOUDE, MAKKINGA	Rijn/ Rhein/ Rhin/Rhine	<i>Uit onderzoek is gebleken dat locatie niet gebruikt wordt door zwemmers, geen inrichting voor zwemmen.</i>
NLBW12_187101	VEERSLOOT	Rijn/ Rhein/ Rhin/Rhine	<i>Na enkele jaren tellen geconstateerd dat er niet meer wordt gezwommen.</i>
NLBW25_890305*	ASSUMBURG (EENDRACHT)	Schelde/ Scheldt/ Escaut	<i>De officiële meetlocatie NLBW25_890305 is gewijzigd in NLBW25_890327. Deze wijziging van locatie vloeit voort uit het zwemwaterprofiel dat voor deze zwemplas is vastgesteld (betere representativiteit).</i>
NLBW36_bhut33	HUTTENHEUGTE DAGRECREATIE	Rijn/Rhein/ Rhin/Rhine	<i>Locatie wordt niet meer gebruikt als zwemwaterlocatie. Water heeft een andere bestemming gekregen.</i>
NLBW58_ORODE050	RODE BEEK BOVENLOOP BRUNSSUM BAC.	Maas/Meuse	<i>Het water heeft een specifiek ecologische functie, locatie niet aangewezen als badlocatie.</i>
NLBW89_BATHBSD	BATH BADSTRAND	Schelde/ Scheldt/ Escaut	<i>Er wordt niet meer gezwommen, door sedimentatie en erosie is het strand veranderd in schorren en slikken.</i>
NLBW89_KREEKRSLUIS KREEKRSLUIS	KREEKRSLUIS BUFFERBEKKEN BADSTRAND	Schelde/ Scheldt/ Escaut	<i>Onderzoek (incl. publieke participatie art. 11) laat zien dat hier geen 'groot aantal' zwemmers zijn.</i>

*One de-listed and one new bathing water were created by a change of location resulting from the bathing water profile.

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



Bathing water quality			
Bathing waters on rivers	Bathing waters on lakes	Coastal/transitional bathing waters	Sampling interval not in full compliance with the Directive 2006/7/EC.
◆ Compliant with guide values	■ Compliant with guide values	● Compliant with guide values	◇ Sampling interval not in full compliance with the Directive 2006/7/EC.
◆ Compliant with mandatory values	■ Compliant with mandatory values	● Compliant with mandatory values	○ No data
◆ Closed*	■ Closed*	● Closed*	□ Outside data coverage (data available, not presented on the map)
◆ Insufficiently sampled or not sampled	■ Insufficiently sampled or not sampled	● Insufficiently sampled or not sampled	
◆ Not compliant with mandatory values	■ 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; Bathing waters data and coordinates: Dutch authorities

The Dutch authorities also reported reasons for closing of bathing waters (in Dutch) as follows:

Bathing water identification code	Bathing water name	River Basin District	Reasons for change
NLBW28_145580	ZWEMPLAS AUTOTRON ROSMALEN	Maas/Meuse	<i>Wordt niet bemonsterd, niet toegankelijk ivm bouwwerkzaamheden. Hek geplaatst.</i>
NLBW95_MAASVTBSD	MAASVLAKTE	Rijn/Rhein/ Rhin/Rhine	<i>Vanwege herinrichting was de locatie het gehele badseizoen gesloten.</i>
NLBW14_20314	PLAS CATTENBROEK	Rijn/Rhein/ Rhin/Rhine	<i>Locatie heeft maar 9 metingen. De locatie was aan het begin van het seizoen nog in inrichting en was toen nog niet fatsoenlijk te bemonsteren. Ten tijde van de inrichting was zwemmen niet mogelijk.</i>
NLBW89_ KRABBDKRHBSD	KRABBENDIJKE ROELSHOEK BADSTRAND	Schelde/ Scheldt/ Escaut	<i>Aan het begin van het badseizoen heeft bureau dijkversterking werkzaamheden uitgevoerd aan de dijk. De locaties waren niet toegankelijk (hekken en gevaar voor drijfzand). Toen de locaties zijn opgeleverd is de bemonstering gestart. Hierdoor heeft o.a. de startmeting niet plaats kunnen vinden.</i>
NLBW89_ YERSKPWBSD	YERSEKE POSTWEG BADSTRAND	Schelde/ Scheldt/ Escaut	<i>Aan het begin van het badseizoen heeft bureau dijkversterking werkzaamheden uitgevoerd aan de dijk. De locaties waren niet toegankelijk (hekken en gevaar voor drijfzand). Toen de locaties zijn opgeleverd is de bemonstering gestart. Hierdoor heeft o.a. de startmeting niet plaats kunnen vinden.</i>

Additional information for some bathing waters in regard to management measures can be obtained from the report of bathing water quality for the 2010 bathing season, table BWQD_2006_SeasonallInfo, attribute ManMeas (in Dutch) (http://cdr.eionet.europa.eu/nl/eu/bathing/envtq9c4g/NL_bathing_water_2010.xls).

Information to the public

Procedures for providing the public with information vary from one province to another. In general, material can be obtained from tourist offices and the provincial authorities. In addition, the latest information about areas where bathing is prohibited or where there are certain risks (botulism, blue-green algae, etc.) can be found on teletext (p. 725) or the Internet (www.waterland.net/zwemwater). Information about bathing water quality is available locally in the most popular bathing areas.

Water quality improvement

Considerable effort has been made to reduce pollution from storm water overflows nearby bathing areas. Many discharges due to overflows have either been sanitised or the discharge point has been displaced to surface waters where there is no risk for 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 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 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 (IWRIS), 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 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>.