

## Bathing water results 2010 – Denmark

### 1. Reporting and assessment

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

For all bathing waters the bathing season lasted three months, from 1 June to 1 September 2010.

A total of 1 169 bathing waters were monitored in Denmark during the 2010 bathing season, of which 1 054 were coastal bathing waters and 115 inland bathing waters on lakes.

With 1 169 bathing waters Denmark accounts for about 5.6 % 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 decreased since the start of the reporting from 1 189 in 1991 to 1 087 in 2009 and further decreased to 1 054 bathing waters in 2010. In 2010, 12 new bathing waters were added to the list, two were re-opened and 47 were de-listed. The number of inland bathing waters remained rather stable since the start of the reporting. It fluctuated from 108 in 1993 to 117 in 1991 and 2009. There were two less inland bathing waters in 2010 than in the previous year: four new bathing waters were added to the list and six were de-listed.

### 3. Bathing water quality

The results of the bathing water quality in Denmark 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](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 freshwater 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 Denmark for all bathing waters.

Map 1 shows the location of the reported bathing waters in Denmark. 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 Danish authorities.

#### Coastal bathing waters

In Denmark, 96.1 % of the coastal bathing waters met the mandatory water quality in 2010. This is an increase of 1.6 % compared to the previous year. Some 77.7 % of the bathing waters met the more stringent guide values, which is an increase of 3.4 %. The number of non-compliant bathing waters with the mandatory value for *Escherichia coli* decreased from 55 (5.1 %) to 39 (3.7 %). No coastal bathing water had to be closed during the season, the same as in 2009.

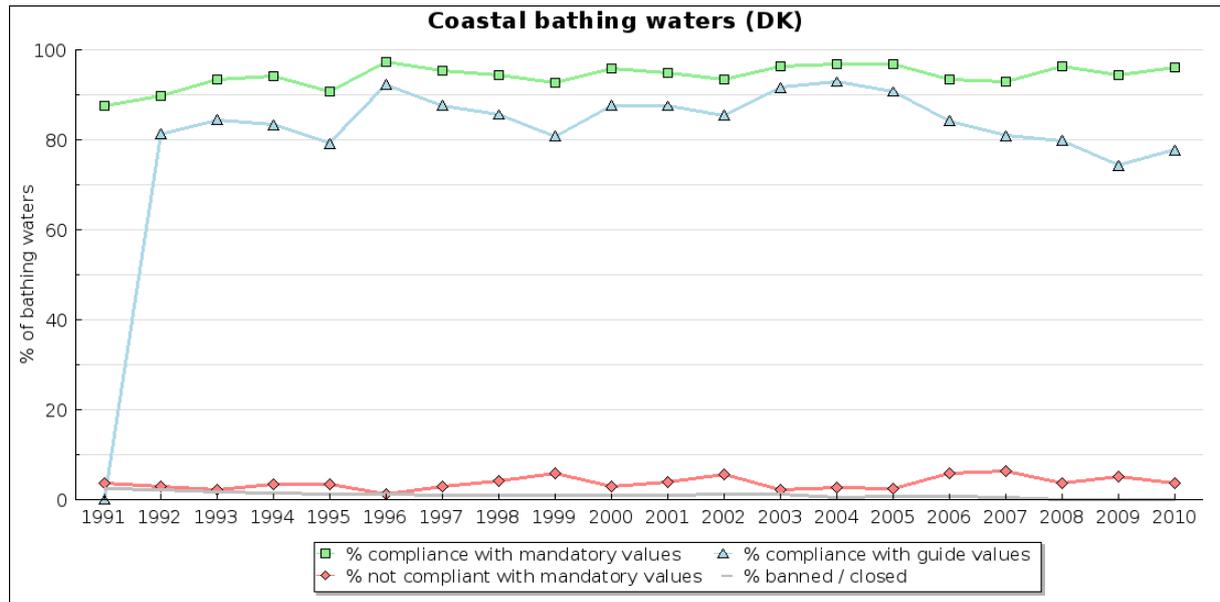
From 1991 Denmark, as most of the Member States at that time, had to take measures to improve the overall water quality. These measures resulted in the improving water quality as can be seen in the increasing compliance results from 1992 onwards. Since then, we see a fairly stable overall bathing water quality with a dip in 2009 for the guide water quality (below 75 %). Closed coastal bathing waters were reported from 1991 to 2007. The number of closed bathing waters decreased from 29 (2.4 %) to six (0.5 %) in that period and reached zero since 2008.

#### Inland bathing waters

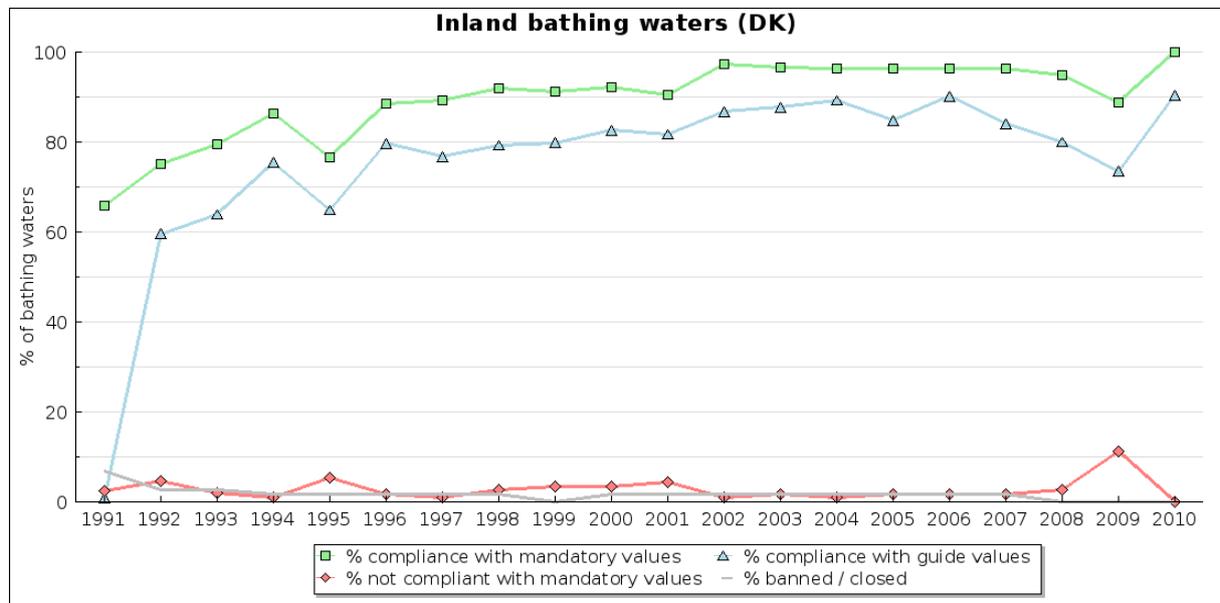
All inland bathing waters met the mandatory water quality in 2010. This is an increase of 11.1 % compared to the previous year. The rate of compliance with the guide values was 90.4 %, which is an increase of 16.9 %. No bathing water was non-compliant with the mandatory value for *Escherichia coli* compared to 13 bathing waters (11.1 %) in 2009. No inland bathing water had to be closed during the season, the same as in 2009.

Overall there was no major change in the situation for the inland bathing water quality in Denmark lately. As for the coastal bathing waters, measures were taken to improve inland water quality of rivers and lakes from 1991 onward. We see an overall increase in the water quality, but it took Denmark till the 2002 bathing season to reach a constant level of non compliant inland bathing waters below 2 %, except for 2008 and 2009. The mandatory water quality was met in more than 90 % of the bathing waters since 1998 and since 2002 in over 96 % of the bathing waters with a drop in 2008 and 2009. Since 2000, the number of bathing waters compliant with the more stringent guide values is fluctuating between 80 % in 2008 and 90.4 % in 2010, except for 2009 (73.5 %). From 1994 to 2007, two bathing waters were closed during the season (1.7-1.8 %), except for 1999.

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



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



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

DK												
		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	1189	0	0	1042	87.6	44	3.7	29	2.4	74	6.2
	1992	1172	953	81.3	1051	89.7	33	2.8	27	2.3	61	5.2
	1993	1179	996	84.5	1100	93.3	25	2.1	20	1.7	34	2.9
	1994	1189	991	83.3	1120	94.2	40	3.4	17	1.4	12	1.0
	1995	1187	940	79.2	1078	90.8	40	3.4	15	1.3	54	4.5
	1996	1195	1103	92.3	1162	97.2	15	1.3	14	1.2	4	0.3
	1997	1194	1046	87.6	1140	95.5	35	2.9	13	1.1	6	0.5
	1998	1194	1022	85.6	1126	94.3	49	4.1	12	1	7	0.6
	1999	1176	950	80.8	1090	92.7	70	6	11	0.9	5	0.4
	2000	1161	1018	87.7	1112	95.8	33	2.8	11	0.9	5	0.4
	2001	1159	1015	87.6	1101	95	46	4	12	1	0	0.0
	2002	1154	986	85.4	1077	93.3	64	5.5	13	1.1	0	0.0
	2003	1141	1045	91.6	1100	96.4	26	2.3	14	1.2	1	0.1
	2004	1136	1056	93	1100	96.8	30	2.6	6	0.5	0	0.0
	2005	1145	1039	90.7	1109	96.9	27	2.4	8	0.7	1	0.1
	2006	1146	965	84.2	1071	93.5	67	5.8	8	0.7	0	0.0
	2007	1158	937	80.9	1076	92.9	73	6.3	6	0.5	3	0.3
	2008	1145	914	79.8	1104	96.4	41	3.6	0	0	0	0.0
	2009	1087	808	74.3	1027	94.5	55	5.1	0	0	5	0.5
	2010*	1054	819	77.7	1013	96.1	39	3.7	0	0.0	2	0.2
2010	1054	814	77.2	1004	95.3	39	3.7	0	0.0	11	1.0	
Inland bathing waters	1991	117	1	0.9	77	65.8	3	2.6	8	6.8	29	24.8
	1992	109	65	59.6	82	75.2	5	4.6	3	2.8	19	17.4
	1993	108	69	63.9	86	79.6	2	1.9	3	2.8	17	15.7
	1994	110	83	75.5	95	86.4	1	0.9	2	1.8	12	10.9
	1995	111	72	64.9	85	76.6	6	5.4	2	1.8	18	16.2
	1996	113	90	79.6	100	88.5	2	1.8	2	1.8	9	8.0
	1997	112	86	76.8	100	89.3	1	0.9	2	1.8	9	8.0
	1998	111	88	79.3	102	91.9	3	2.7	2	1.8	4	3.6
	1999	114	91	79.8	104	91.2	4	3.5	0	0	6	5.3
	2000	115	95	82.6	106	92.2	4	3.5	2	1.7	3	2.6
	2001	115	94	81.7	104	90.4	5	4.3	2	1.7	4	3.5
	2002	113	98	86.7	110	97.3	1	0.9	2	1.8	0	0.0
	2003	114	100	87.7	110	96.5	2	1.8	2	1.8	0	0.0
	2004	112	100	89.3	108	96.4	1	0.9	2	1.8	1	0.9
	2005	112	95	84.8	108	96.4	2	1.8	2	1.8	0	0.0
	2006	112	101	90.2	108	96.4	2	1.8	2	1.8	0	0.0
	2007	113	95	84.1	109	96.5	2	1.8	2	1.8	0	0.0
	2008	115	92	80	109	94.8	3	2.6	0	0	3	2.6
	2009	117	86	73.5	104	88.9	13	11.1	0	0	0	0.0
	2010	115	104	90.4	115	100.0	0	0.0	0	0.0	0	0.0

\*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 Denmark in 2009 and 2010**

DK												
		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	1204	894	74.3	1131	93.9	68	5.6	0	0.0	5	0.4
	2010*	1169	923	79.0	1128	96.5	39	3.3	0	0.0	2	0.2
	2010	1169	918	78.5	1119	95.7	39	3.3	0	0.0	11	0.9

\*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 Danish authorities

The bathing water season in Denmark runs from 1 June to 1 September. Sampling generally starts one month before the start of the bathing season. Samplings for the evaluation of the bathing water are taken at places that are normally used for bathing, including areas, which are reserved specifically for bathing in accordance with regional and local planning. Moreover, samples must to the extent required be taken to demarcate known pollution sources, e.g. harbours, sewage discharges and mouth of rivers.

The analytical methods used in Denmark:

- *Escherichia coli*: DS/EN ISO 9308-1 or DS/EN ISO 9308-3;
- Intestinal enterococci: DS/EN ISO 7899-2 or DS/EN ISO 7899-1.

#### De-listing of bathing waters

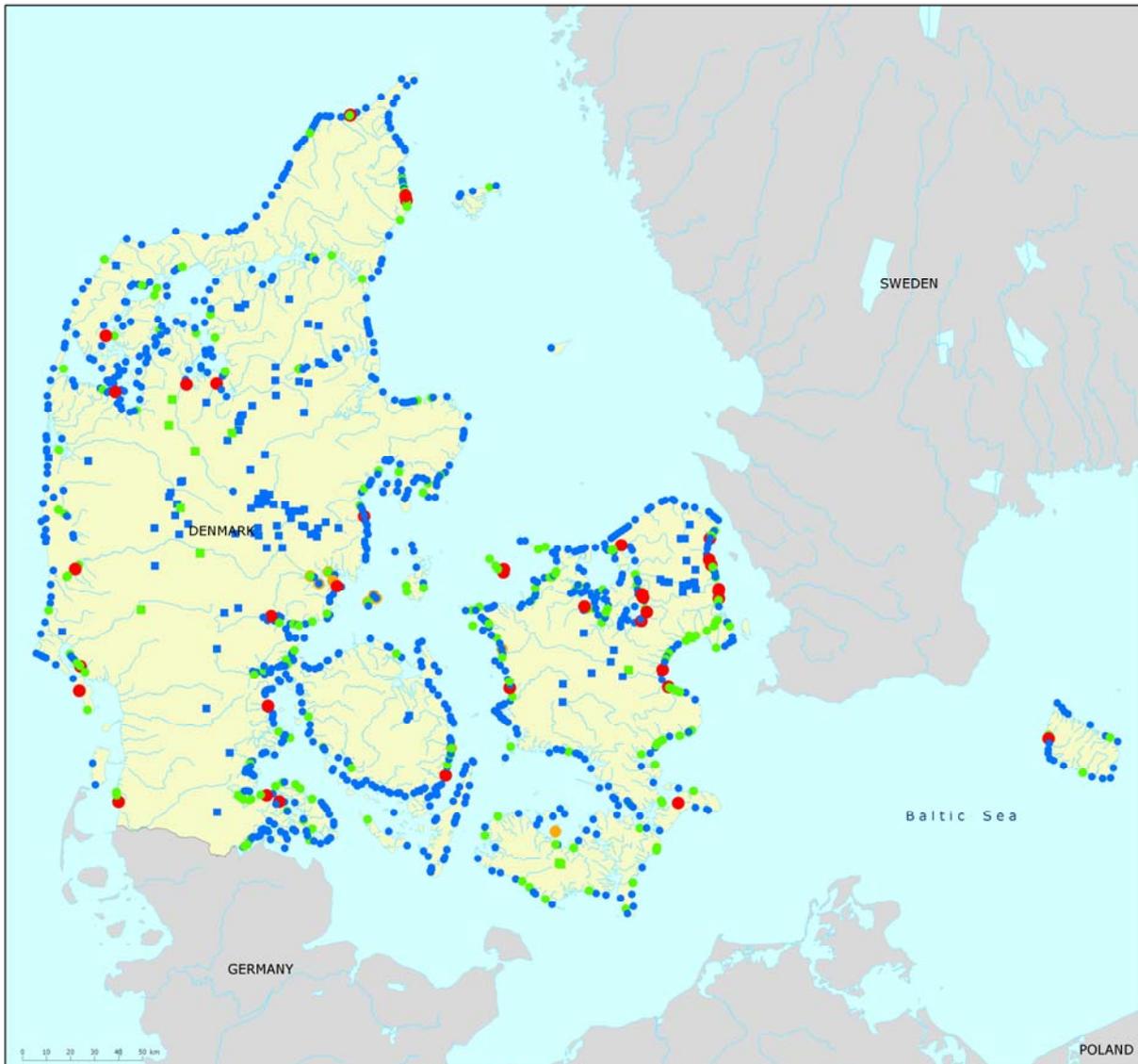
A total of 53 bathing waters have been de-listed in 2010. In 2009 there were likewise a great number of de-listed bathing waters. The main reason for that is probably the New Bathing Water Directive (Directive 2006/7/EC). This Directive requires more improved information concerning each bathing site, and the local authorities in Denmark have therefore paid more attention to the different bathing waters the last couple of years.

Reasons for de-listing are mainly that the site is not used as bathing water because of none or very few visitors due to poor inaccessibility (18 bathing sites).

Other reasons for change are reported:

- The bathing site is located very close to another bathing site (16 bathing sites);
- The bathing site is changed to monitoring sites (13 bathing sites);
- Disbanded due to the longstanding prohibition against bathing, there probably never will be repealed (two bathing sites in Lemvig);
- The lake will continue to be unfit for bathing (Birkerød Sø, Næsset);
- The bathing site is disbanded. It has served as a control station for Dronningmølle Strand. It is a small, private beach area (Munkerup gårde);
- There is no overflow of effluent into the lake (Bryrup Langsø - two bathing sites).

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



Bathing water quality		
<b>Bathing waters on lakes</b>	<b>Coastal/transitional bathing waters</b>	<b>Sampling interval not in full compliance with the Directive 2006/7/EC.</b>
■ 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: GISCU; Large rivers and lakes: EEA, WFD Article 3; Bathing waters data and coordinates: Danish authorities

The reasons for de-listing of each bathing location as reported by the Danish authorities are as follows:

Bathing water identification code	Bathing water name	Municipality	Reasons for change
DKBW957	Skagen nord,v/B.Nansens villa	Frederikshavn	Water quality in the area defined by St. 50, located approx. 600 meters south of st. 40.
DKBW1482	Røjle Klint 100 m Ø	Middelfart	The site is not used as bathing site. The beach is very small and inaccessible. Therefore very few visitors.
DKBW563	Aulby Mølleå 250m Ø	Middelfart	Bathing site reclassified to monitoring site. The station serves as boundary of the effluent from Aulby Mølle Å.
DKBW531	Rudbæksbanke S	Middelfart	The site is not used as bathing site.
DKBW534	Fluepapiret	Middelfart	The site is not used as bathing site.
DKBW539	Feriebyen S	Middelfart	The site is not used as bathing site.
DKBW540	Psykiatrisk afd.	Middelfart	The site is not used as bathing site.
DKBW978	900 m. syd for Skagen havn	Frederikshavn	Water quality in the area defined by St. 70, located approx. 670 meters south of st. 60.
DKBW915	Syd for Aalbæk havn	Frederikshavn	Few bathers. Is only approx. 500 meters north of st. 120.
DKBW695	Stranden syd for Rugholm Å	Frederikshavn	Water quality at st. 180 covered by st.170, ca. 950 meters further north.
DKBW696	Stranden 100 m nord for Rugholm å	Frederikshavn	The site is not used as bathing site. (Lots of stones in the area).
DKBW1538	Nord for Rønnerhavnen, 200 m nord for st. 250	Frederikshavn	Water quality in the area determined at Station 250, located approx. 200 meters south of the station 240
DKBW683	Nord for Brovig	Frederikshavn	The site is not used as bathing site.
DKBW985	30 m nord for Sæby å	Frederikshavn	Water quality in the area defined by St. 370, located approx. 150 meters north of st. 380.
DKBW983	Nr. Strandhave	Frederikshavn	The site is not used as bathing site.
DKBW1377	Ud for udløb af Hedevangsbæk	Frederikshavn	Inaccessible areas. Water quality in the area defined by St. 430, approximately 350 meters north of st. 450.
DKBW214	Ferring Sø ved Vejlbj	Lemvig	Disbanded due to the longstanding prohibition against bathing, there probably never will be repealed.
DKBW213	Ferring Sø ved Gåskjær	Lemvig	Disbanded due to the longstanding prohibition against bathing, there probably never will be repealed.
DKBW136	Birkerød Sø, Næsset	Rudersdal	Bathing water quality in Birkerød Lake has over the past year has been declining since the lake during the bathing season has been marked by strong algal blooms. Thus, the water is generally very unclear and the amount of potentially toxic blue-green algae in the swimming season has increased year by year. There is no prospect that the water quality in the lake during the foreseeable future improved to such an extent that water quality could be described as satisfactory. It is also the administration's view that The site is not used as bathing site, presumably because of the uninviting appearance. Since, in the light of the above is likely that the lake will continue to be unfit for bathing, the management is reasonable to discontinue Birkerød lake as bathing site, including ceasing the monitoring of water quality.
DKBW93	Sdr. Alslev	Guldborgsund	The site is located very close to another bathing site and there is no sewer discharge or river output.
DKBW380	Udsholt strand	Gribskov	Bathing Site reclassified to monitoring site. Sewer discharge. The site is not used as bathing site.
DKBW381	100 m vest for Orebjerg rende	Gribskov	Bathing site reclassified to monitoring site in river output. Signs with bathing is not recommended are now present.
DKBW382	100 m øst for Højbro Å	Gribskov	Bathing site reclassified to monitoring site in river output. Signs with bathing is not recommended are now present.
DKBW387	Munkerup gårde	Gribskov	Disbanded. Has served as a control station for Dronningmølle Strand. It is a small, private beach area.

Bathing water identification code	Bathing water name	Municipality	Reasons for change
DKBW388	60 m vest for udløb af Esrum Å	Gribskov	Bathing site reclassified to monitoring site in river output. Signs that bathing is not recommended are now present.
DKBW390	100 m vest for Pandehave Å	Gribskov	Bathing site reclassified to monitoring site in river output. Signs that bathing is not recommended are now present.
DKBW391	100 m øst for Pandehave Å	Gribskov	Bathing site reclassified to monitoring site in river output. Signs that bathing is not recommended are now present.
DKBW395	Rågeleje, ved Molevej 6	Gribskov	Bathing site reclassified to monitoring site in river output. Signs that bathing is not recommended are now present.
DKBW400	Ud for Vesterbæk	Helsingør	Bathing Site reclassified to monitoring site. Sewer discharge. The site is not used for bathing.
DKBW401	50 m syd-øst for Hornbæk havn	Helsingør	Bathing Site reclassified to monitoring site. Sewer discharge. The site is not used as bathing site.
DKBW439	Sandager næs N	Assens	The station is located north of sewerage. There is pumping with overflow (if the pump puts out.) The station is located approx. 270 meters north of the station Sandager Næs S. We believe that 'a control station is enough. Sandager Næs S retained as a control station is where a jetty.
DKBW442	Aborg Strand S	Assens	Approximately 100 meters north of the station is an outlet from meadow / marsh / forest area. The station is located approx. 210 meters south of Aborg Beach N. We estimate that one control station is enough. Aborg Beach N retained as a control station is located where there is a jetty and most bathers.
DKBW443	Nordstien	Assens	Disbanded on 09-03-2010. The beach is approx. 250 meters north of Mariedal beach. Less attractive beach with surface drainage. Often large amounts of seaweed.
DKBW446	Assensnæs Rylevej	Assens	The site is not used as bathing site. Narrow rocky beach. Used normally never of bathers. Located just north of the old ground pools from Assens sugar factory and approx. 330 meters south of Assens Næs.
DKBW448	Å Strand N	Assens	Bathing Site reclassified to monitoring site. Stations 100 to 140 are separated by a distance of approx. 150 meters. Bathing takes place frequently between Å Strand S and Å å N, and between Å å S and Å å 150 m S. There are effluents from Å strand Sewer south of Å Strand N and from Å å between stations Å å N and Å a 150 m S. We estimate that 2 control stations and a monitoring station is sufficient here.
DKBW449	Å Strand S	Assens	Disbanded on 09-03-2010. Stations 100 to 140 are separated by a distance of approx. 150 meters. Bathing takes place frequently between Å Strand S and Å å N, and between Å å S and Å å 150 m S. There are effluents from Å strand Sewer south of Å Strand N and from Å å between stations Å å N and Å a 150 m S. We estimate that 2 control stations and a monitoring station is sufficient here.
DKBW451	Å å S	Assens	Disbanded on 09-03-2010. Stations 100 to 140 are separated by a distance of approx. 150 meters. Bathing takes place frequently between Å Strand S and Å å N, and between Å å S and Å å 150 m S. There are effluents from Å strand Sewer south of Å Strand N and from Å å between stations Å å N and Å a 150 m S. We estimate that 2 control stations and a monitoring station is sufficient here.
DKBW454	Helnæs Sommerland SV	Assens	Disbanded on 09-03-2010. Purification northeast of bathing station is being decommissioned. The station is preserved (No. 150), amidst the holiday area and the closest parking space.
DKBW456	Campingplads	Nordfyns	The site is not used as bathing site.
DKBW547	Christianslund S	Nyborg	Disbanded. Sample taken from the middle of the beach as a replacement for Station 150.

Bathing water identification code	Bathing water name	Municipality	Reasons for change
DKBW1010	200 m vest for Hesteskoen	Aalborg	Hesteskoen - There are actually 3 bathing resorts at Hesteskoen. There was no significant difference in levels of bacteria at these 3 stations. Stations 200 meters east and 200 meters west of Horse Shoe assessed in due course, be established as actual control stations, but at some point been transferred to bathing stations. Aalborg has no interest in maintaining the stations, and dismantles them therefore.
DKBW1011	200 m øst for Hesteskoen	Aalborg	Hesteskoen - There are actually 3 bathing resorts at Hesteskoen. There was no significant difference in levels of bacteria at these 3 stations. Stations 200 meters east and 200 meters west of Horse Shoe assessed in due course, be established as actual control stations, but at some point been transferred to bathing stations. Aalborg has no interest in maintaining the stations, and dismantles them therefore.
DKBW1016	Aggerholm	Silkeborg	Bryrup Langsø is a long, deep, nutrient rich lake. Water retention in the lake is just under three months. The lake has four small inlet and one outlet. There is no overflow of effluent into the lake.
DKBW1119	Lindsnakke	Aabenraa	The site is not used as bathing site. Road near the water, no beach. Stones and seaweed along the water's edge.
DKBW1138	Spramshuse	Aabenraa	The site is not used as bathing site.
DKBW1182	Dybvighoved	Aabenraa	The site is not used as bathing site. Only access for walkers, no real beach, rocky waters edge.
DKBW1349	Nørreby strand	Nordfyns	The site is not used as bathing site. Closed because this area is not suitable for bathing.
DKBW1363	Skjernå-Nørrekanal	Herning	The site is not used as bathing site. The site is taken out of the program from 2010, since there are no bathers in this place after having created new lakes in the area.
DKBW1460	Store Sjørup strand, indenfor	Norddjurs	The site is not used as bathing site. It is a very shallow basin close to the beach.
DKBW1493	Sdr. Åby 100 m V	Middelfart	Bathing Site reclassified to monitoring site. 09-03-2010
DKBW1511	Odden Bryrup Langsø	Silkeborg	Bryrup Langsø is a long, deep, nutrient rich lake. Water retention in the lake is just under three months. The lake has four small inlet and one outlet. There is no overflow of effluent into the lake.
DKBW1519	Udsholt Strand Øst	Gribskov	Bathing Site reclassified to monitoring site. Sewer discharge. The site is not used as bathing site.
DKBW1552	Havnebad Aalborg, Kajkant	Aalborg	In Aalborg municipality's desire to establish a harbor bath, was in 2007 elected two stations, which had taken samples of bathing water. This was a station at the quayside and a station 20 yards from the quayside. Aalborg Municipality believes that the above criteria for the pooling of bathing also here is respected. Since port bath will be located slightly from the quayside, it will be most effective to maintain station 20 meters from the quay.

## Bans

In Denmark bathing is prohibited when pollution cannot be reduced to a level which is acceptable for human health and if bathing water does not comply to microbiological parameters for three successive bathing seasons. This means that bathing is prohibited unless the pollution can be eliminated before the next bathing season starts.

## Information to the public

At the home page of the Danish Nature Agency, [www.naturstyrelsen.dk](http://www.naturstyrelsen.dk) the public can find general information about bathing water. Most of the local authorities in Denmark have a home page with bathing water information.

## Waste water treatment

Today all treatment plants above 5 000 PE have tertiary treatment and the discharge from these plants has no impact on the bathing water quality. There are only a few direct discharges of treated industrial wastewater and they have no impact on the bathing water quality.

In 1997 a national plan for improvement of untreated discharge of waste water from scattered settlement was agreed. In 2004 it was estimated that 90 000 estates/household should have improved treatment. Of these around 20 000 have been improved.

In 2010 Denmark has been preparing a national water plan due to the Water Framework Directive which proposes a further response to scattered settlement, wastewater treatment plants and storm water outfalls.

Both of these action plans will in the near future contribute to improvements of the general water quality in rivers, lake and coastal waters and thereby also contribute to improvements of the 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](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 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>.