

Danish bathing water quality in 2016



Denmark 

May 2017

Photo: © Peter Kristensen

BWD Report For the Bathing Season 2016

Denmark

The report gives a general overview of information acquired from the reported data, based on provisions of the Bathing Water Directive¹. The reporting process is described below, as well as state and trends of bathing water quality in Denmark.

1. BWD reporting in the season 2016

In 2016 bathing season, 1036 bathing waters have been reported in Denmark. For each bathing water, five groups of parameters have been delivered²:

- *identification data* – including name, location, geographic type of bathing water and availability to bathers;
- *seasonal data* – including season start and end, national quality classification in present season, potential management measures and changes in quality;
- *monitoring results* – disaggregated numerical values of two microbiological parameters – intestinal enterococci and Escherichia coli (also known as E. coli), recorded at each water sample taken;
- *abnormal situation periods* – periods of unexpected situations that have, or could reasonably be expected to have, an adverse impact on bathing water quality and on bathers' health; reporting is optional;
- *short-term pollution periods* – identifiable events that adversely affect water quality by faecal contamination; reporting is optional.

Bathing waters of Denmark in 2016	
Total reported	1036
Coastal	921
Inland	115
Ordinary season period*	93 days
	1 Jun to 1 Sep
Samples taken	8993
Share of bathing waters with good or excellent water quality	94 %
Reporting under Directive 2006/7/EC since	2008
* Could be extended to 15 September upon municipality request.	

The authorities of Denmark report data according to the new BWD (2006/7/EC) since the season 2008. The data for the season 2016 were delivered to the European Commission by **21 December 2016**.

Altogether, **1036 bathing waters** have been reported – 4.8% of all bathing waters in Europe. Out of all bathing waters in Denmark, 0.48% have been newly identified in 2016 season. 89% of bathing waters in Denmark are of coastal type; the other 11% are inland. **8993 samples** were taken at bathing waters throughout the season – 9 per bathing water on average.

¹ Directive BWD 2006/7/EC, available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF>

² See the BWD Data Dictionary for detailed explanations: http://dd.eionet.europa.eu/datasets/latest/BWQ_2006

The ordinary bathing season period was from 1 June to 1 September, with a maximum season span of 93 days³. Season duration can be extended to 15 September upon municipality request.

Detailed information on bathing waters is available from national portal at <http://svana.dk/vand/badevand/>.

2. Assessment methodology⁴

During the bathing season, water samples are taken and analysed for two bacteria, *Escherichia coli* and intestinal enterococci which may indicate the presence of pollution, usually originating in sewage, livestock waste, bird faeces etc. The results of the analysis are used to assess the quality of the bathing waters concerned and to provide information to the public on the quality of water in the bathing sites concerned.

The monitoring requirements under the Directive are:

- taking a pre-season sample (taken shortly before the start of the bathing season)⁵;
- a minimum of four samples per season⁶;
- a minimum of one sample per month⁷.

If these rules are satisfied, the bathing water is categorised as 'sampling frequency satisfied'. If not all monitoring requirements are fulfilled the bathing water is categorised as 'not enough samples'. 97.2% of bathing waters met the described monitoring requirements set by the Directive, while the rest did not satisfy monitoring requirements for different reasons: being new; having changed environmental conditions that might affect water quality classification; closed; not monitored due to legal issues, physical inaccessibility to the site etc.

³ If season length in a country varies depending on bathing water, the single longest season per bathing water is indicated, and not the overall count of season days in a country.

⁴ The methodology used by the EC and the EEA is described here, while results of assessment by national authorities may differ in individual cases.

⁵ A pre-season sample is taken into account at total number of samples per season.

⁶ Three samples are sufficient if the season does not exceed eight weeks or the region is subject to special geographical constraints.

⁷ If, for any reason, it is not possible to take the sample at the scheduled date, a delay of four extra days is allowed. Thus, the interval between two samples should not exceed 31 + 4 days.

Table 1 shows the statistics of bathing waters according to monitoring requirements.

Table 1: Bathing waters in 2016 according to compliance with BWD monitoring provisions

	Count	Share of total [%]
<p>BWs with sampling frequency satisfied (and are not new, are not subject to changes or were not closed in 2016)</p> <p>These bathing waters have been monitored according to provisions and have complete dataset from the last assessment period. They have been quality-classified (excellent, good, sufficient, poor).</p>	1005	97.0%
<p>BWs with sampling frequency not satisfied (and are not new, are not subject to changes or were not closed in 2016)</p> <p>These bathing waters exist throughout the last assessment period but have not been monitored throughout the period according to provisions for various individual reasons. They may be quality-classified if there is an adequate volume of samples available for credible classification.</p>	7	0.7%
<p>BWs that are new, subject to changes or closed in 2016</p> <p>These bathing waters do not have complete dataset for the last assessment period because they are new, have been subject to changes (that are likely to affect the classification of the bathing water) or have been closed. They cannot be quality-classified.</p>	24	2.3%
Total number of bathing waters in 2016	1036	100%

Bathing waters where sampling frequency was not satisfied can still be quality assessed if at least four samples per season (three samples if the season does not exceed eight weeks or the region is subject to special geographical constraints) are available and equally distributed throughout the season. Assessment of bathing water quality is possible when the bathing water sample dataset is available for four consecutive seasons. Bathing waters are accordingly classified to one of the bathing water quality classes (excellent, good, sufficient, or poor).

The classification is based on pre-defined percentile values for microbiological enumerations, limiting the classes given in Annex I of the Directive. The Directive defines different limit values for coastal and inland waters.

Quality assessment is not possible for all bathing waters. In these cases, they are instead classified as either:

- not enough samples⁸;
- new⁹;
- changes¹⁰;
- closed¹¹.

⁸ Not enough samples have been provided throughout the last assessment period (the last four bathing seasons or, when applicable, the period specified in Article 4.2 or 4.4).

⁹ Classification not yet possible because bathing water is newly identified and a complete set of samples is not yet available.

¹⁰ Classification is not yet possible after changes that are likely to affect the classification of the bathing water.

¹¹ Bathing water is closed temporarily or throughout the bathing season.

3. Bathing water quality

The results of the bathing water quality in Denmark throughout the past period are presented in Figure 1 (for coastal bathing waters) and Figure 2 (for inland bathing waters). The previous reports are available on the European Commission's bathing water quality website¹² and the European Environment Agency's bathing water website¹³.

3.1 Coastal bathing waters

In Denmark, 97.0% of all existing coastal bathing waters met at least sufficient water quality standards in 2016. See Appendix 1 for numeric data.

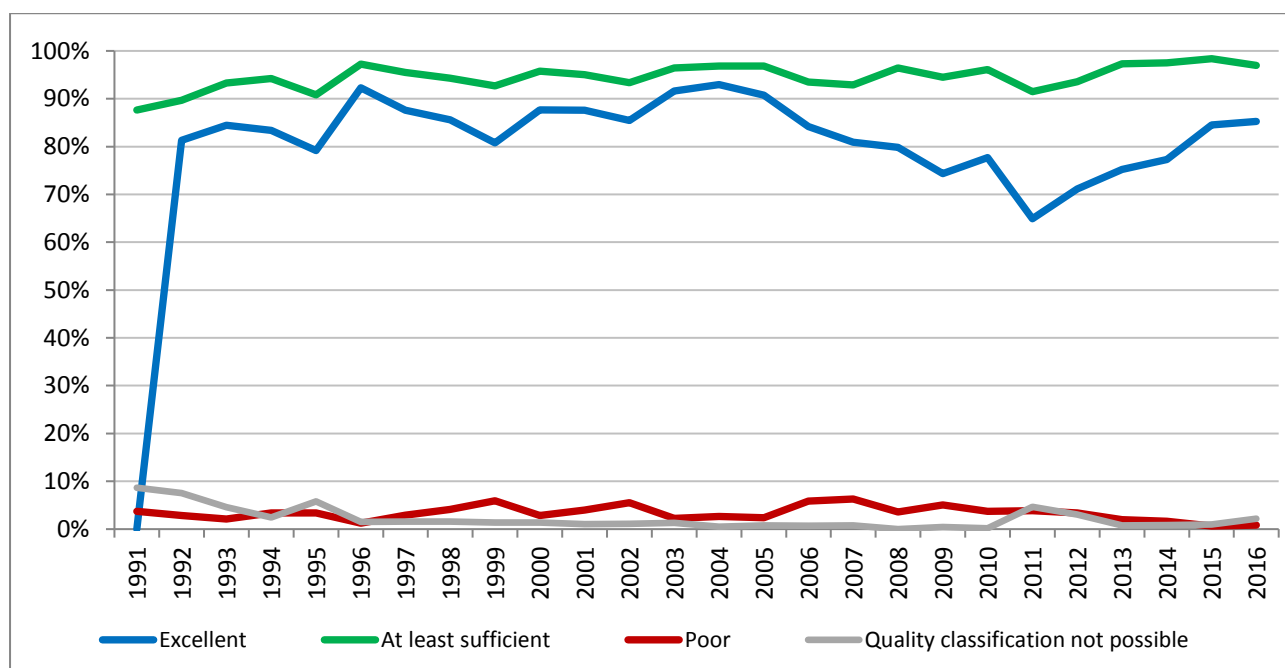


Figure 1: Coastal bathing water quality trend in Denmark. Note: the "At least sufficient" class also includes bathing waters of "Excellent" quality class, the sum of shares is therefore not 100%.

¹² http://ec.europa.eu/environment/water/water-bathing/index_en.html

¹³ <http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water>

3.2 Inland bathing waters

95.7% of all existing inland bathing waters were of at least sufficient water quality in 2016. See Appendix 1 for numeric data.

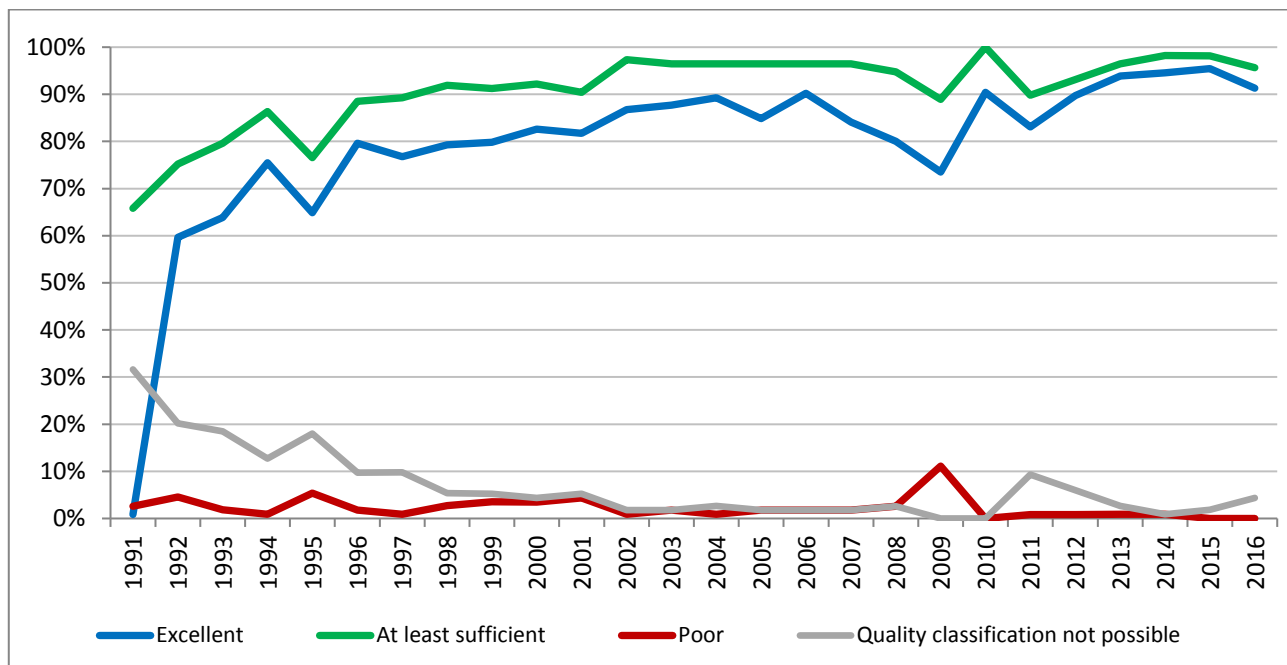


Figure 2: Inland bathing water quality trend in Denmark. Note: the “At least sufficient” class also includes bathing waters of “Excellent” quality class, the sum of shares is therefore not 100%.

4. Information regarding management and other issues

The municipalities are responsible for inspecting bathing water in Denmark and they publish the current bathing water quality on their websites. For the 2016 bathing season no short-term pollutions or abnormal situations have been reported by national authorities.

5. Bathing water quality assessment presentation in online viewers

The European bathing water legislation focuses on sound management of bathing waters, greater public participation and improved information dissemination. More on the bathing and other water legislation can be found on the European Commission's website: http://ec.europa.eu/environment/water/index_en.htm.

The bathing water section of the Water Information System for Europe (WISE) which is accessible at the EEA bathing water website (<http://www.eea.europa.eu/themes/water/interactive/bathing/state-of-bathing-waters>) allows users to view the bathing water quality at more than 21 000 coastal and inland sites across Europe. The WISE bathing water quality data viewer combines text and graphical visualisation, providing a quick overview of the bathing water's locations and achieved quality. Having

access to bathing water information, citizens are encouraged to make full use of it and participate with their comments.

Appendix 1: Results of bathing water quality in Denmark from 2013 to 2016

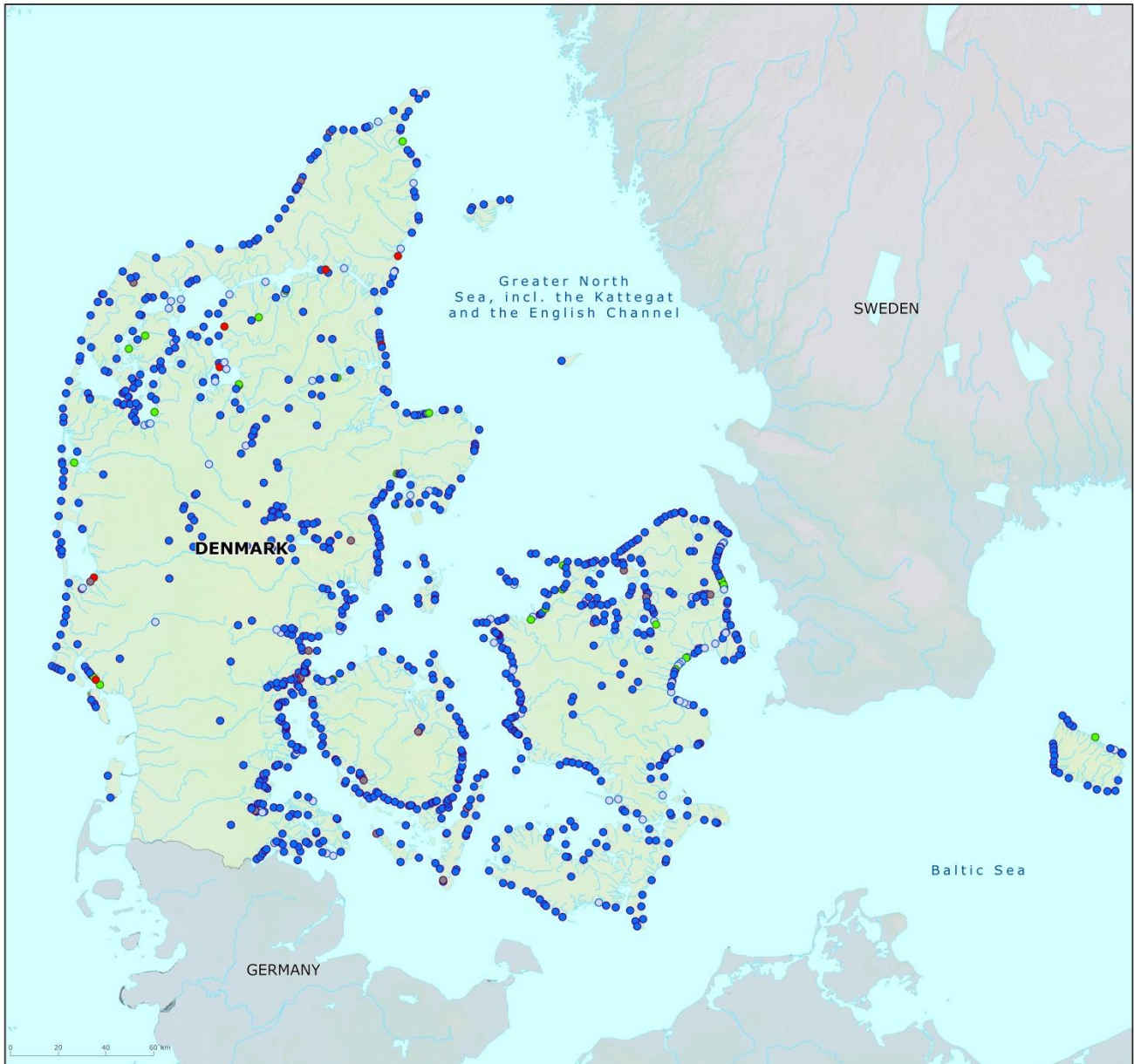
Table 2: Bathing waters in the season 2016 according to quality

		Total number of bathing waters	Excellent quality		At least sufficient quality		Poor quality		Quality classification not possible: not enough samples /new bathing waters/bathing waters subject to changes/closed	
			No	%	No	%	No	%	No	%
Coastal	2013	923	694	75.2	898	97.3	18	2.0	7	0.8
	2014	917	709	77.3	894	97.5	15	1.6	8	0.9
	2015	918	776	84.5	903	98.4	6	0.7	9	1.0
	2016	921	785	85.2	893	97.0	8	0.9	20	2.2
Inland	2013	114	107	93.9	110	96.5	1	0.9	3	2.6
	2014	111	105	94.6	109	98.2	1	0.9	1	0.9
	2015	110	105	95.5	108	98.2	0	0.0	2	1.8
	2016	115	105	91.3	110	95.7	0	0.0	5	4.3
Total	2013	1037	801	77.2	1008	97.2	19	1.8	10	1.0
	2014	1028	814	79.2	1003	97.6	16	1.6	9	0.9
	2015	1028	881	85.7	1011	98.3	6	0.6	11	1.1
	2016	1036	890	85.9	1003	96.8	8	0.8	25	2.4

Note: the class "At least sufficient" also includes bathing waters which are of excellent quality, the sum of shares is therefore not 100%.

Appendix 2: Bathing water quality map

Map 1: Bathing waters reported during the 2016 bathing season in Denmark



Bathing water quality

- Excellent water quality
- Good water quality
- Sufficient water quality
- Poor water quality
- Quality classification not possible: not enough samples / new bathing waters / bathing waters with changes / closed
- No data
- Outside data coverage (data available, not presented on the map)

Source: National boundaries: EEA; Large rivers and lakes: EEA, WFD Article 3; Bathing waters data and coordinates: Danish authorities; Digital Elevation Model over Europe (EU-DEM): EEA.